



# **K S R Institute for Engineering and Technology**

**Tiruchengode, Namakkal (Dt) , Tamil Nadu**

**(Approved by AICTE, Affiliated to Anna University, Accredited by NAAC (A+) & NBA)**



**1.2.1. Percentage of Programs in which Choice Based Credit System (CBCS) / elective course system has been implemented.**

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## ANNA UNIVERSITY : : CHENNAI – 600 025

### THE MINUTES OF THE 22<sup>nd</sup> ACADEMIC COUNCIL

**MINUTES OF THE 22<sup>nd</sup> MEETING OF THE ACADEMIC COUNCIL HELD ON  
26.07.2017 AT 10.00 A.M. IN THE ACADEMIC COUNCIL HALL OF ANNA  
UNIVERSITY CHENNAI UNDER THE CHAIRMANSHIP OF THE CHAIRMAN,  
CONVENER COMMITTEE, ANNA UNIVERSITY CHENNAI.**

The following members were present:

1	The Chairman	Convener Committee, Anna University, Chennai -25.
2	Dr. S. Ganesan	The Registrar (Secretary), Anna University, Chennai – 25.
3	Dr. S.S. Ramakrishnan	Chairman, Faculty of Civil Engineering, AU, Chennai – 25.
4	Dr. L. Karunamoorthy	Chairman, Faculty of Mechanical Engineering, AU, Ch – 25.
5	Dr. B. Umamaheswari	Chairperson, Faculty of Electrical Engineering, AU, Ch – 25.
6	Dr. A.P. Shanthy	Chairperson, Faculty of I & C, AU, Chennai – 44.
7	Dr. A. Peer Mohamed	Chairman, Faculty of Technology, AU, Chennai – 25.
8	Dr. Ranees Vadamuthu	Chairperson, Faculty of Architecture & Planning, AU, Ch – 25.
9	Dr. K. Sivakumar	Chairman, Faculty of S & H, AU, Ch – 25.
10	Dr. L. Suganthi	Chairperson, Faculty of Management Sciences, AU, Ch-25
11	Dr. N. Rajendran	The Director, University Library, Anna University, Ch – 25.
12	Dr. B.V. Mudgal	Professor, Department of Civil Engineering, CWR, AU, Ch – 25
13	Dr. S. Usa	Professor, Division of High Voltage, Department of Electrical Engg, AU, Chennai– 25
14	Dr. S. N. Geetha	Professor, Department of Management Studies, Anna University, Ch – 25.
15	Dr. N. Selvakumar	Professor, Department of Textile Technology, AC Tech, Anna University, Ch – 25.
16	Dr. K.R. Sitalakshmi	Professor, Department of Architecture, SAP Campus, Anna University, Ch – 25.
17	Dr. M. Venkatesan	Professor, Department of Mathematics, AU, Chennai – 25.
18	Dr. V. Kumar	The Principal, Thanthai Periyar Government Institute of Technology, T.P.G.I.T., Bagayam, Vellore – 632 002.
19	Dr. Indra Getzy David	The Principal, Government College of Engg, Kanyakumari Road, Perumalpuram, Tirunelveli – 627 007
20	Dr. Esther Annlin Kala James	The Principal, Govt. College of Engineering, Srirangam, Fatima Nagar (PO), Tiruchirappalli – 620 012.
21	Dr. J. Lakshmana Perumal	The Principal, Government College of Engg, Karuppur Village, Salem – 636 011.
22	Dr.P. Thamarai	The Principal, Government College of Engg., Settikarai, Dharmapuri – 636 704.

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|----|----------------------------|---|
| 23 | Dr. S. Jayanthi            | The Principal, Government College of Engineering, Bodiyanayakanur, Theni District – 625 513.  |
| 24 | Dr. P. Thirumal            | The Principal, Government College of Engineering, Bargur, Madepalli, Krishnagiri – 635 104.   |
| 25 | Dr. V. Selladurai          | The Principal, Coimbatore Institute of Technology, Avinashi Road, Coimbatore – 641 014.   |
| 26 | Dr. A. Elango              | The Principal, Alagappa Chettiar College of Engineering and Technology, Karaikudi, Sivaganga – 630 004.                                     |
| 27 | Dr. G. Wiselin Jiji        | The Principal, Dr. Sivanthi Athitanar College of Engineering Tiruchendur - 628 215, Tuticorin District                                      |
| 28 | Dr.P.K.Suresh              | The Principal, Meenakshi Sundararajan Engineering College 363, Arcot Road, Kodambakkam, Chennai - 600 024.                                  |
| 29 | Dr. G. Mahendran           | The Principal, IFET College of Engineering, Villupuram-605108   |
| 30 | Dr.C.V.Jayakumar           | The Principal, Sri Sai Ram Engineering College, Sai Leo Nagar, West Tambaram, Chennai – 600 044.  |
| 31 | Dr. N. Duraipandian        | The Principal, Velammal Engineering College, Velammal Nagar, Ambattur –Red Hills Road, Chennai – 600 066.                                   |
| 32 | Dr. B. Chidhambara Rajan   | The Principal, Valliammai Engineering College, SRM Nagar, Kattankulathur - 603 203.   |
| 33 | Dr. D.Valavan              | The Principal, Saranathan College of Engineering, Verikateswara Nagar, Edamalai Patti, Pudur Post, Panjappur Village, Srirangam Taluk-12    |
| 34 | Dr. Ganesan Shanthy        | The Principal, Shivani Engineering College, Trichy-Dindigul Road, Poolangulathupatti, Tiruchirappalli – 620 009.                            |
| 35 | Dr. S.Charles              | The Principal, Dhanalakshmi Srinivasan College of Engineering NH-47, Narakkara (P.O), Madhukkarai (TK), Coimbatore Dist.                    |
| 36 | Dr. J. Janet               | The Principal, Sri Krishna College of Engineering & Technology, Kuriamulthur Post, Coimbatore - 641 008.                                    |
| 37 | Dr. K.A. Mohamed Junaid    | The Principal, RMK Engineering College, RSM Nagar, Kavaraipettai, Gummidipoondi Taluk - 601 206.  |
| 38 | Dr.V.Venkatachalam         | The Principal, Erode Sengunthar Engineering College Thudupathi, Perundurai Tk, Erode – 638 057.   |
| 39 | Dr .R S Kumar              | The Principal, Kumaraguru College of Technology Chinnavedampatti, Saravanampatty, Coimbatore - 641049.                                      |
| 40 | Dr. V. Lakshmi Prabha      | Former Principal, GCT, Coimbatore. B1, KTVR Towers, Thadagam Road, Coimbatore - 641013  |
| 41 | Thiru. Murali, M.E.,       | Superintendent Engineer, Load Despatch Centre, TNEB Chennai – 600 002   |
| 42 | Dr. Rajendra Kumar, I.A.S. | Chairman & Managing Director– ELCOT, 692, M.H.U. Complex, Anna Salai, Nandanam, Chennai - 35  |
| 43 | Mr. C. Duraisamy           | The Chief Engineer (DOTE), Technical Education Circle, Ch – 25.   |
| 44 | Mr. A. J. Jegadheeson,     | Head, Manufacturing Methods, TQM Office, Lucas TVS, Padi, Chennai - 50  |
| 45 | Dr. G. Balakrishnan        | Engineering Supervisor – I, Caterpillar India Private Limited, Sriperumputhur Road, Tiruvallur, Chennai – 600 113.                          |
| 46 | Dr. Hema Gopal             | Vice- President, Tata Consultancy Services, Onesez Unit, 200 Ft Road, Thoraipakkam, Chennai – 600 096.                                      |
| 47 | Dr. M. Perumal Pillai      | Executive Director / Scientist 'G', National Institute of Electronics & Information Technology, NIT Campus Post, Calicut - Kerala - 673 601 |
| 48 | Dr. K. Prakashan           | Manager (Testing), CIPET Head Office, TVK Industrial Estate, Guindy, Chennai-32   |
| 49 | Mr. Iniyam Nehru           | Senior Technical Director, National Informatics Centre, 3rd Avenue, Tiruvalluvar Nagar, Besant Nagar, Chennai – 600 090.                    |

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|----|---------------------------|---|
| 50 | Mr. P. Balakrishnan, FIE  | Professor, Appadurai Chair (TNEB Chair), Department of EEE<br>Tamil Nadu Electricity Board  |
| 51 | Dr. M. S. Srinivasan, FIE | Fellow of Indian Institution of Technical Arbitrators, No.26, Oliver<br>Road, Mylapore, Chennai - 600 004.  |
| 52 | Dr. R. Mahadevan          | Former President, Society of Automotive Engineers, No.1,<br>Ground Floor, Gandhi Mandapam Road, ISTE Professional<br>Road, Kotturpuram, Ch-600 025. |
| 53 | Thiru. Shanmuganathan     | Additional Industrial Advisor, MSME Development Institute<br>Government of India, Chennai, 65/1, G.S.T. Road, Guindy, Ch-32                         |
| 54 | Thiru. Bala Subramanian   | The General Manager, Tamilnadu Small Industries,<br>Development Corporation Limited (TANSIDCO), Guindy<br>Industrial Estate, Chennai - 32           |
| 55 | Dr. S. Arul Daniel        | Professor, Department of EEE, National Institute of Technology,<br>Tiruchirappalli – 620 015.   |

### Special Invitees

- |    |   |   |
|----|---|---|
| 56 | The Dean                                  | CEG Campus, Anna University, Chennai - 25.                                |
| 57 | The Dean                                  | ACT Campus, Anna University, Chennai - 25.                                |
| 58 | The Dean                                  | MIT Campus, Anna University, Chennai - 25.                                |
| 59 | The Dean                                  | SAP Campus, Anna University, Chennai - 25.                                |
| 60 | The Controller of Examinations            | Anna University, Chennai - 600 025.                                       |
| 61 | The Additional Controller of Examinations | Anna University, Chennai - 600 025.                                       |
| 62 | The Deputy Controller of Examinations     | Anna University, Chennai - 600 025.                                       |
| 63 | The Director                              | Centre for Research, Anna University, Chennai<br>– 600 025.               |
| 64 | The Director                              | Centre for Distance, Anna University, Chennai –<br>600 025.               |
| 65 | The Director                              | Centre for Centre for Academic Courses, Anna<br>University, Chennai – 25. |
| 66 | The Additional Directors                  | Centre for Centre for Academic Courses, Anna<br>University, Chennai – 25. |
| 67 | The Deputy Directors                      | Centre for Centre for Academic Courses, Anna<br>University, Chennai – 25. |

The meeting began with the Registrar and Secretary, Academic Council, Anna University, Chennai, delivering the welcome address and calling the meeting to order. He outlined briefly the various agenda items to be presented at the meeting. He also described the various committees and Academic meetings held to formulate the Choice Based Credit System Regulations and Syllabi for the UG and PG Programmes offered under the Affiliated Institutions in the Academic Year 2017-2018. After the formal welcome, he requested the Chairman, Convener Committee to deliver the Special Address and Chair the meeting.

The Chairman, Convener Committee while addressing the Council, highlighted that the curricula and syllabi of 57 PG programmes and curricula and syllabi of the first two semesters of 41 UG programmes would be discussed in the Academic Council. The Chairman, Convener Committee stressed the challenge in shaping and formulating the Regulations under the Choice Based Credit System which calls for a flexible and learner oriented approach to the teaching learning process. He sought the cooperation and valuable guidance from the respective members to achieve the goals of the University.

Following the address by the Chairman, Convener Committee, Commissioner of Technical Education and Dr. Rajendra Kumar, Chairman & Managing Director- ELCOT addressed the gathering. The Director, Academic Courses moved the following agenda items on behalf of the Chairman, Convener Committee.

### Items Moved by the Chairman, Convener Committee

- VC 22.01 TO NOTE THE APPROVAL GIVEN BY THE SYNDICATE TO THE MINUTES OF THE 21<sup>st</sup> MEETING OF THE ACADEMIC COUNCIL HELD ON 07.01.2016.**

The Minutes of the 21<sup>st</sup> Meeting of the Academic Council held on 07.01.2016 as approved by the Syndicate in its meeting held on 06.10.2016.

**RESOLVED TO NOTE** the approval of the Minutes of the 21<sup>st</sup> Academic Council.

#### ➤ Minutes of 21<sup>st</sup> Academic Council

- VC 22.02 TO CONSIDER AND RATIFY THE EQUIVALENCE GRANTED BY THE EQUIVALENCE COMMITTEE FOR THE DEGREES AWARDED BY OTHER INDIAN UNIVERSITIES AND FOREIGN UNIVERSITIES AS ELIGIBLE QUALIFICATION FOR ADMISSION TO VARIOUS PG / M.S. / Ph.D. PROGRAMMES OF ANNA UNIVERSITY, CHENNAI.**

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**RESOLVED TO RATIFY** the equivalence granted by the Equivalence Committee for the degrees awarded by other Indian Universities and Foreign Universities as eligible qualification for admission to various PG / M.S. / Ph.D. programmes of Anna University, Chennai.

**EQUIVALENCY GRANTED**

**VC 22.03 TO CONSIDER AND RATIFY THE FOLLOWING NOTIFICATION GRANTING PERMISSION TO THE STUDENTS OF UNIVERSITY DEPARTMENTS / AFFILIATED INSTITUTIONS WHO HAVE EXHAUSTED THE MAXIMUM PERIOD OF STUDY, TO WRITE THE ARREAR EXAM (S) AS THE LAST CHANCE, TO COMPLETE THEIR DEGREE PROGRAMME.**

**RESOLVED TO RATIFY** the following Notification granting permission to the students of University Departments / Affiliated Institutions who have exhausted the maximum period of study, to write the arrear exam (s) as the last chance, to complete their degree programme.


**NOTIFICATION**

**VC 22.04 TO CONSIDER AND RATIFY THE PERMISSION GIVEN TO STUDENTS EXCHANGE PROGRAMME OF ANNA UNIVERSITY DEPARTMENTS TO UNDERGO VARIOUS SEMESTERS OF STUDY AT UNIVERSITIES ABROAD UNDER VARIOUS AGREEMENTS.**

**RESOLVED TO RATIFY** the permission given to students Exchange programme of Anna University Departments to undergo various semesters of study at universities abroad under various agreements.

**ANNEXURE – AI**

**VC 22.05 TO CONSIDER AND RATIFY THE SPECIAL PERMISSION GRANTING ADDITIONAL PERIOD OF STUDY TO INDIVIDUAL STUDENTS FOR COMPLETING THEIR DEGREE PROGRAMMES.**

  
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**RESOLVED TO RATIFY** the special permission granting additional period of study to individual students for completing their degree programmes.

**ANNEXURE - All**

**VC 22.06 TO CONSIDER AND APPROVE THE FOLLOWING REGULATIONS 2017 UNDER CBCS FOR THE UG / PG PROGRAMMES TO BE OFFERED BY THE AFFILIATED INSTITUTIONS.**

**RESOLVED TO APPROVE** the following Regulations 2017 under CBCS for the UG / PG programmes to be offered by the Affiliated Institutions.

- a) **Regulations 2017 – UG – B.E./B.Tech. (Full-Time)**
- b) **Regulations 2017 – UG – B.Arch. (Full-Time)**
- c) **Regulations 2017 – PG – M.E./M.Tech./M.C.A./M.B.A./M.Sc.**
- d) **Regulations 2017 – PG – M. Arch.**

➤ The Members Suggested that in the Clause 15 of UG – B.E./B.Tech. (Full-Time) ,PG – M.E./M.Tech./M.C.A./M.B.A./M.Sc and Clause 14 of PG – M. Arch and Clause 16 of UG – B.Arch. (Full-Time) regarding Award of Letter Grades, **Grade B (Above Average) to be renamed as Grade B (Average).**

**RESOLVED** to carry out suggested modifications.

**VC 22.07 TO CONSIDER AND RATIFY THE FOLLOWING REGULATIONS 2015 UNDER CBCS FOR THE M.Sc. / M.B.A. (5 YEARS INTEGRATED) PROGRAMMES TO BE OFFERED BY THE AFFILIATED INSTITUTIONS.**

**RESOLVED TO RATIFY** the following Regulations 2015 under CBCS for the M.Sc. / M.B.A. (5 years Integrated) programmes to be offered by the Affiliated Institutions.

**Regulations 2015 – M.Sc. / MBA (5 years Integrated)**

**VC 22.08 TO CONSIDER AND RATIFY THE FOLLOWING REGULATIONS 2017 FOR THE UG (PART TIME) PROGRAMMES TO BE OFFERED BY THE UNIVERSITY DEPARTMENTS.**

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**RESOLVED TO RATIFY** the following Regulations 2017 for the UG (Part Time) programmes to be offered by the University Departments.

Regulations 2017 – UG – B.E./B.Tech. (Part-Time)

**VC 22.09 TO CONSIDER AND RATIFY THE AMENDMENTS TO THE UG / PG DEGREE PROGRAMME OFFERED IN UNIVERSITY DEPARTMENTS UNDER R-2012 AND R-2015.**

**RESOLVED TO RATIFY** the amendments to the UG / PG degree programme offered in University Departments under R-2012 and R-2015.

AMENDMENTS – REGULATIONS 2012 - UG


AMENDMENTS – REGULATIONS 2015 (CBCS) - UG

AMENDMENTS – REGULATIONS 2015 (CBCS) - PG

**VC 22.10 TO CONSIDER AND APPROVE THE INTRODUCTION OF ELECTIVE COURSES ON "1. YOUTH RED CROSS MOVEMENT" APPROVED BY THE YRC CELL, ANNA UNIVERSITY AND "2. NATIONAL CADET CORPS STUDIES" APPROVED BY THE NCC, ANNA UNIVERSITY, TO ALL UNDERGRADUATE PROGRAMMES OF BOTH UNIVERSITY DEPARTMENTS AND AFFILIATED INSTITUTIONS AS PER THE DIRECTION OF UGC.**

**RESOLVED TO APPROVE** the introduction of elective courses on "1. Youth Red Cross Movement" approved by the YRC Cell, Anna University and "2. National Cadet Corps Studies" approved by the NCC, Anna University, to all undergraduate programmes of both University Departments and Affiliated Institutions as per the direction of UGC.

1. Youth Red Cross Movement
2. National Cadet Corps Studies

  
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1. BUSINESS BROUGHT FORWARDED BY THE BOARDS OF STUDIES.  
AGENDA FROM FACULTY OF CIVIL ENGINEERING

I. ITEMS PERTAINING TO UNIVERSITY DEPARTMENTS

- FC22.01 TO CONSIDER AND RATIFY THE CURRICULA AND SYLLABI FOR THE UG (PART-TIME) PROGRAMME OFFERED IN UNIVERSITY DEPARTMENTS UNDER R-2017 WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018 ONWARDS.

RESOLVED TO RATIFY the Curricula and Syllabi for the UG (Part-Time) programme offered in University Departments under R-2017 with effect from the Academic year 2017 – 2018 onwards.

**B.E. (PART-TIME) CIVIL ENGINEERING**

- FC22.02 TO CONSIDER AND RATIFY THE SHIFTING OF THE COURSE “CE7611 COMPUTER AIDED BUILDING DRAWING” CURRENTLY LISTED IN THE VI SEMESTER OF B.E. CIVIL ENGINEERING UNDER R-2015 (CBCS) OFFERED IN UNIVERSITY DEPARTMENTS TO IV SEMESTER.

RESOLVED TO RATIFY the shifting of the course “CE7611 Computer Aided Building Drawing” currently listed in the VI semester of B.E. Civil Engineering under R-2015 (CBCS) offered in University Departments to IV semester.

**B.E. Civil Engineering (Revised)**

- FC22.03 TO CONSIDER AND RATIFY THE FOLLOWING REVISED CURRICULUM OF M.E. ENVIRONMENTAL MANAGEMENT (PART TIME) UNDER R-2015 (CBCS) OFFERED IN UNIVERSITY DEPARTMENTS.

RESOLVED TO RATIFY the following revised curriculum of M.E. Environmental Management (Part Time) under R-2015 (CBCS) offered in University Departments.

1. **M.E. Environmental Management (Revised)**
2. **M.E. Structural Engineering (Revised)**

**FC22.04 TO CONSIDER AND RATIFY THE PERMISSION GRANTED FOR THE SPECIAL ELECTIVE COURSES FOR PH.D. / M.S. (BY RESEARCH) PROGRAMMES OFFERED IN THE UNIVERSITY DEPARTMENTS UNDER THE FACULTY OF CIVIL ENGINEERING, ANNA UNIVERSITY, CHENNAI.**

**RESOLVED TO RATIFY** the permission granted for the Special Elective courses for Ph.D. / M.S. (By Research) programmes offered in the University Departments under the Faculty of Civil Engineering, Anna University, Chennai.

**FC9015 Constitutive Modelling in Geomechanics**

**II. ITEMS PERTAINING TO AFFILIATED INSTITUTIONS**

**FC22.05 TO CONSIDER AND APPROVE THE CURRICULUM I TO VIII SEMESTERS AND SYLLABUS OF I & II SEMESTERS FOR THE UG (FT) (CBCS) DEGREE PROGRAMMES TO BE OFFERED IN AFFILIATED INSTITUTIONS UNDER R-2017 WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018 ONWARDS.**

**RESOLVED TO APPROVE** the Curriculum I to VIII semesters and Syllabus of I & II semesters for the UG (FT) (CBCS) degree programmes to be offered in Affiliated Institutions under R-2017 with effect from the Academic year 2017 – 2018 onwards.

1. **B.E. Civil Engineering**
2. **B.E. Environmental Engineering**
3. **B.E. Geoinformatics Engineering**
4. **B. E. Agriculture Engineering**

**FC22.06 TO CONSIDER AND APPROVE THE NEW CURRICULA AND SYLLABI UNDER CBCS FOR THE PG (FT) DEGREE PROGRAMMES TO BE OFFERED IN AFFILIATED INSTITUTIONS UNDER R-2017 WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018 ONWARDS.**

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**RESOLVED TO APPROVE** the new Curricula and Syllabi under CBCS for the PG (FT) degree programmes to be offered in Affiliated Institutions under R-2017 with effect from the Academic year 2017 – 2018 onwards.

1. M.E. Structural Engineering
2. M.E. Construction Engineering and Management
3. M.E. Environmental Engineering
4. M.E. Soil Mechanics and Foundation Engineering
5. M.Tech. Remote Sensing

➤ The Members suggested that the Practical Training courses may be renamed as Practical Training I, II & III in M.E. Structural Engineering and M.E. Construction Engineering and Management.

**RESOLVED** to carry out suggested modifications.

**FC22.07** TO CONSIDER AND APPROVE THE COMMON SYLLABUS FOR CIVIL ENGINEERING RELATED SUBJECTS OF B.E. / B.TECH. DEGREE PROGRAMMES UNDER R-2017 OFFERED BY THE AFFILIATED INSTITUTIONS ANNA UNIVERSITY, CHENNAI WITH EFFECT FROM THE ACADEMIC YEAR 2017 - 2018.

**RESOLVED TO APPROVE** the common syllabus for Civil Engineering related subjects of B.E. / B.Tech. Degree programmes under R-2017 offered by the Affiliated Institutions Anna University, Chennai with effect from the Academic year 2017 - 2018.

Common Syllabus for Civil Engineering Related Subjects of  
B.E. / B.Tech. Degree Programmes Under R-2017

**FC22.08** TO CONSIDER AND RATIFY THE REVISED CURRICULA AND SYLLABI FOR THE UG PROGRAMMES OFFERED IN AFFILIATED INSTITUTIONS UNDER R-2013.

**RESOLVED TO RATIFY** the revised Curricula and Syllabi for the UG programmes offered in Affiliated Institutions under R-2013.

1. B.E. Civil Engineering (FT & PT)
2. B.E. Agriculture Engineering

## AGENDA FROM FACULTY OF MECHANICAL ENGINEERING

## I. ITEMS PERTAINING TO UNIVERSITY DEPARTMENTS

**FM22.01 TO CONSIDER AND RATIFY THE CURRICULA AND SYLLABI FOR THE UG (PART-TIME) PROGRAMME OFFERED IN UNIVERSITY DEPARTMENTS UNDER R-2017 WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018 ONWARDS.**

**RESOLVED TO RATIFY** the Curricula and Syllabi for the UG (Part-Time) programme offered in University Departments under R-2017 with effect from the Academic year 2017 – 2018 onwards.

1. B.E. Mechanical Engineering (Part Time)
2. B.E. Automobile Engineering (Part Time)

**FM22.02 TO CONSIDER AND RATIFY THE FOLLOWING REVISED CURRICULUM OF UG PROGRAMME UNDER R-2015 (CBCS) OFFERED IN UNIVERSITY DEPARTMENTS.**

**RESOLVED TO RATIFY** the following revised Curriculum of UG programme under R-2015 (CBCS) offered in University Departments.

1. B.E. Manufacturing Engineering (Revised)
2. B.E. Mechanical Engineering (Revised)
3. B.E. Automobile Engineering (Revised)
4. B.E. Materials Science and Engg. (Revised)

**FM22.03 TO CONSIDER AND RATIFY THE PRESCRIBED THEORY COURSE "RA7201 AIR CONDITIONING SYSTEMS" SYLLABUS FOR M.E. THERMAL ENGINEERING (FT) UNDER R-2015 (CBCS) UNIVERISTY DEPARTMENT THAT ARE REVISED.**

**RESOLVED TO RATIFY** the prescribed theory course "RA7201 Air Conditioning Systems" syllabus for M.E. Thermal Engineering (FT) under R-2015 (CBCS) University Department that are revised.

Revised Syllabus

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**FM22.04 TO CONSIDER AND RATIFY THE FOLLOWING REVISED CURRICULUM OF M.E. QUALITY ENGINEERING AND MANAGEMENT (FT/PT) UNDER R-2015 (CBCS) OFFERED IN UNIVERSITY DEPARTMENTS.**

**RESOLVED TO RATIFY** the following revised curriculum of M.E. Quality Engineering and Management (FT/PT) under R-2015 (CBCS) offered in University Departments.

**M.E. Quality Engineering and Management (Revised)**

**II. ITEMS PERTAINING TO AFFILIATED INSTITUTIONS**

**FM22.05 TO CONSIDER AND APPROVE THE CURRICULUM I TO VIII SEMESTERS AND SYLLABUS OF I & II SEMESTERS FOR THE UG (FT) (CBCS) DEGREE PROGRAMMES TO BE OFFERED IN AFFILIATED INSTITUTIONS UNDER R-2017 WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018 ONWARDS.**

**RESOLVED TO APPROVE** the Curriculum I to VIII semesters and Syllabus of I & II semesters for the UG (FT) (CBCS) degree programmes to be offered in Affiliated Institutions under R-2017 with effect from the Academic year 2017 – 2018 onwards.

1. **B. E. Aeronautical Engineering**
2. **B. E. Automobile Engineering**
3. **B. E. Marine Engineering**
4. **B. E. Mechanical Engineering**
5. **B. E. Production Engineering**
6. **B. E. Materials Science and Engineering**
7. **B. E. Manufacturing Engineering**
8. **B. E. Industrial Engineering and Management**
9. **B. E. Mechatronics Engineering**
10. **B. E. Mechanical and Automation Engineering**
11. **B. E. Industrial Engineering**
12. **B. E. Mechanical Engineering (Sandwich)**
13. **B. E. Robotics and Automation Engineering**

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 NAMAKKAL DISTRICT, TAMIL NADU.

- The Members suggested that the Open Elective be offered from V semester.

**RESOLVED** that this issue may be decided in the next Board of Studies.

- The Members suggested that Tutorials may be added for the course "Probability and Queuing Theory" and hence credits may be changed as 4 0 0 4 to 3 2 0 4 in the Curricula of B. E. Mechanical Engineering (Sandwich)

**RESOLVED** to carry out suggested modifications.

**FM22.06 TO CONSIDER AND APPROVE THE NEW CURRICULA AND SYLLABI FOR THE PG (FT) (CBCS) DEGREE PROGRAMMES TO BE OFFERED IN AFFILIATED INSTITUTIONS UNDER R-2017 WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018 ONWARDS.**

**RESOLVED TO APPROVE** the new Curricula and Syllabi for the PG (FT) (CBCS) degree programmes to be offered in Affiliated Institutions under R-2017 with effect from the Academic year 2017 – 2018 onwards.

1. M.E. Computer Aided Design
2. M.E. Engineering Design
3. M.E. CAD/CAM
4. M.E. Product Design and Development
5. M.E. Computer Integrated Manufacturing
6. M.E. Manufacturing Engineering
7. M.E. Mechatronics Engineering
8. M.E. Automobile Engineering
9. M.E. Thermal Engineering
10. M.E. Internal Combustion Engineering
11. M.E. Energy Engineering
12. M.E. Industrial Engineering
13. M.E. Industrial Safety Engineering
14. M.E. Aeronautical Engineering
15. M.E. Aerospace Technology

- The Members suggested that Tutorials may be added for the course "Advanced Numerical Methods" and hence L T P C need change from 4 0 0 4 to 3 2 0 4 in the Curricula of M.E. Thermal Engineering, M.E. Automobile Engineering, M.E. Internal Combustion Engineering and M.E. Energy Engineering.
- Members suggested that the title of the course "Advanced Engineering Fluid Mechanics" to be renamed as "Advanced Fluid Mechanics" in the programme M.E. Thermal Engineering.

**RESOLVED** to carry out above suggested modifications.

**FM 22.07 TO CONSIDER AND APPROVE THE COMMON SYLLABI FOR MECHANICAL RELATED SUBJECTS OF B.E. / B.TECH. DEGREE PROGRAMMES UNDER R – 2017, OFFERED BY THE AFFILIATED INSTITUTIONS UNDER THE FACULTY OF MECHANICAL ENGINEERING, ANNA UNIVERSITY, CHENNAI WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018.**

**RESOLVED TO APPROVE** the common Syllabi for Mechanical related Subjects of B.E. / B.Tech. degree programmes under R – 2017, offered by the Affiliated Institutions under the Faculty of Mechanical Engineering, Anna University, Chennai with effect from the Academic year 2017 – 2018.

Common Syllabus for Mechanical Related Subjects of  
B.E. / B.Tech. Degree Programmes under R - 2017

**FM22.08 TO CONSIDER AND RATIFY THE PERMISSION GRANTED FOR THE SPECIAL ELECTIVE COURSES FOR Ph.D. / M.S. (BY RESEARCH) PROGRAMMES OFFERED IN THE AFFILIATED INSTITUTIONS UNDER THE FACULTY OF MECHANICAL ENGINEERING, ANNA UNIVERSITY, CHENNAI.**

  
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**RESOLVED TO RATIFY** the permission granted for the Special Elective courses for Ph.D. / M.S. (By Research) programmes offered in the Affiliated Institutions under the faculty of mechanical engineering, Anna University, Chennai.

1. SME004 Mechanics as Applied to Thin Rods Under Contact Friction Force
2. SME005 Automotive Fuels and Emission



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## AGENDA FROM FACULTY OF ELECTRICAL ENGINEERING

## I. ITEMS PERTAINING TO UNIVERSITY DEPARTMENTS

FE22.01 TO CONSIDER AND RATIFY THE CURRICULA AND SYLLABI FOR THE UG (PART-TIME) PROGRAMME OFFERED IN UNIVERSITY DEPARTMENTS UNDER R-2017 WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018 ONWARDS.

RESOLVED TO RATIFY the Curricula and Syllabi for the UG (Part-Time) programme offered in University Departments under R-2017 with effect from the Academic year 2017 – 2018 onwards.


1. B.E. Electrical and Electronics Engineering (Part Time)
2. B.E. Electronics and Instrumentation Engg. (Part Time)

FE22.02 TO CONSIDER AND RATIFY THE REVISED SYLLABUS OF THE PRESCRIBED THEORY COURSE “EE7303 NETWORK ANALYSIS AND SYNTHESIS” FOR B.E. ELECTRICAL AND ELECTRONICS ENGINEERING(FT) UNDER R-2015 (CBCS) UNIVERISTY DEPARTMENT.

RESOLVED TO RATIFY the revised syllabus of the prescribed Theory course “EE7303 Network Analysis and Synthesis” for B.E. Electrical and Electronics Engineering (FT) under R-2015 (CBCS) University Department.

Revised Syllabus

FE22.03 TO CONSIDER AND RATIFY THE ADDITION OF THE FOLLOWING ADDITIONAL ELECTIVE COURSE IS INCLUDED IN THE ELECTIVE LIST OF THE CURRICULUM FOR M.E. POWER SYSTEMS ENGINEERING DEGREE PROGRAMME (FT/PT) UNDER R-2015 (CBCS) OFFERED BY THE UNIVERSITY DEPARTMENTS.

  
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**RESOLVED TO RATIFY** the addition of the following Additional Elective course is included in the elective list of the Curriculum for M.E. Power Systems Engineering degree Programme (FT/PT) under R-2015 (CBCS) offered by the University Departments.

PW7201 Grid Integration of Renewable Energy Sources

**FE22.04 TO CONSIDER AND RATIFY THE PERMISSION GRANTED FOR THE SPECIAL ELECTIVE COURSES FOR PH.D. / M.S. (BY RESEARCH) PROGRAMMES OFFERED IN THE UNIVERSITY DEPARTMENTS UNDER THE FACULTY OF ELECTRICAL ENGINEERING, ANNA UNIVERSITY, CHENNAI.**

**RESOLVED TO RATIFY** the permission granted for the Special Elective courses for Ph.D. / M.S. (By Research) programmes offered in the University Departments under the Faculty of Electrical Engineering, Anna University, Chennai.

1. FE 9053 Synchronous Reluctance Motor and Drives
2. FE 9054 Congestion Management With Renewable Energy Resources

**II. ITEMS PERTAINING TO AFFILIATED INSTITUTIONS**

**FE22.05 TO CONSIDER AND APPROVE THE CURRICULUM I TO VIII SEMESTERS AND SYLLABUS OF I & II SEMESTERS FOR THE UG (FT) (CBCS) DEGREE PROGRAMMES TO BE OFFERED IN AFFILIATED INSTITUTIONS UNDER R-2017 WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018 ONWARDS.**

**RESOLVED TO APPROVE** the curriculum I to VIII semesters and syllabus of I & II semesters for the UG (FT) (CBCS) degree programmes to be offered in Affiliated Institutions under R-2017 with effect from the Academic year 2017 – 2018 onwards.

1. B.E. Electrical and Electronics Engineering
2. B.E. Electronics and Instrumentation Engineering
3. B.E. Instrumentation and Control Engineering

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**FE22.06 TO CONSIDER AND APPROVE THE NEW CURRICULA AND SYLLABI FOR THE PG (FT) (CBCS) DEGREE PROGRAMMES TO BE OFFERED IN AFFILIATED INSTITUTIONS UNDER R-2017 WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018 ONWARDS.**


**RESOLVED TO APPROVE** the new Curricula and Syllabi for the PG (FT) (CBCS) degree programmes to be offered in Affiliated Institutions under R-2017 with effect from the Academic year 2017 – 2018 onwards.

1. M.E. Power Systems Engineering
2. M.E. Power Electronics and Drives
3. M.E. Embedded System Technologies
4. M.E. Control and Instrumentation Engineering
5. M.E. Instrumentation Engineering
6. M.E. Electrical Drives and Embedded Control

**FE22.07 TO CONSIDER AND APPROVE THE COMMON SYLLABI FOR ELECTRICAL RELATED SUBJECTS OF B.E. / B.TECH. DEGREE PROGRAMMES UNDER R – 2017, OFFERED BY THE AFFILIATED INSTITUTIONS UNDER THE FACULTY OF ELECTRICAL ENGINEERING, ANNA UNIVERSITY, CHENNAI WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018.**

**RESOLVED TO APPROVE** the common syllabi for Electrical related subjects of B.E. / B.Tech. degree programmes under R – 2017, offered by the Affiliated Institutions under the Faculty of Electrical Engineering, Anna University, Chennai with effect from the Academic year 2017 – 2018.

**Common Syllabus for Electrical Related Subjects of  
B.E. / B.Tech. Degree Programmes under R - 2017**

  
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FE22.08 TO CONSIDER AND RATIFY THE ADDITION OF THE FOLLOWING ELECTIVE SUBJECTS FOR B.E. ELECTRICAL AND ELECTRONICS ENGINEERING DEGREE PROGRAMME (FULL-TIME) R-2013 OFFERED BY THE AFFILIATED INSTITUTIONS UNDER THE FACULTY OF ELECTRICAL ENGINEERING, ANNA UNIVERSITY, CHENNAI.

**RESOLVED TO RATIFY** the addition of the following Elective subjects for B.E. Electrical and Electronics Engineering degree programme (Full-Time) R-2013 offered by the Affiliated Institutions under the Faculty of Electrical Engineering, Anna University, Chennai.

1. MA6468 Probability and Statistics
2. EI6001 Data Structures and Algorithms



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## AGENDA FROM FACULTY OF INFORMATION AND COMMUNICATION ENGINEERING

## I. ITEMS PERTAINING TO UNIVERSITY DEPARTMENTS

- FI22.01** TO CONSIDER AND RATIFY THE CURRICULA AND SYLLABI FOR THE UG (PART-TIME) PROGRAMME OFFERED IN UNIVERSITY DEPARTMENTS UNDER R-2017 WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018 ONWARDS.

**RESOLVED TO RATIFY** the Curricula and Syllabi for the UG (Part-Time) programme offered in University Departments under R-2017 with effect from the Academic year 2017 – 2018 onwards.


**B.E. Electronics and Communication Engg. (Part Time)**

- FI22.02** TO CONSIDER AND RATIFY THE FOLLOWING REVISED CURRICULUM OF M.E. COMPUTER SCIENCE AND ENGINEERING UNDER R-2015 (CBCS) OFFERED IN UNIVERSITY DEPARTMENTS.

**RESOLVED TO RATIFY** the following revised curriculum of M.E. Computer Science and Engineering under R-2015 (CBCS) offered in University Departments.

**M.E. Computer Science and Engineering (Revised)**

- FI22.03** TO CONSIDER AND RATIFY THE PRESCRIBED THEORY COURSE "EC7352 DATA STRUCTURES AND OBJECT ORIENTED PROGRAMMING IN C++" SYLLABUS FOR B.E. ELECTRONICS AND COMMUNICATION ENGINEERING (FT) UNDER R-2015 (CBCS), IS LISTED AS AN 'EEC' INSTEAD, IT CAN BE LISTED AS AN 'ES' UNIVERSITY DEPARTMENT THAT ARE REVISED.

  
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**RESOLVED TO RATIFY** the prescribed Theory course "EC7352 Data Structures and Object Oriented Programming in C++" syllabus for B.E. Electronics and Communication Engineering (FT) under R-2015 (CBCS), is listed as an 'EEC' instead, it can be listed as an 'ES' University Department that are revised.

**B.E. Electronics and Communication Engineering (FT) (Revised)**

**FI22.04 TO CONSIDER AND RATIFY THE PERMISSION GRANTED FOR THE SPECIAL ELECTIVE COURSES FOR Ph.D. / M.S. (BY RESEARCH) PROGRAMMES OFFERED IN THE UNIVERSITY DEPARTMENTS UNDER THE FACULTY OF INFORMATION AND COMMUNICATION ENGINEERING, ANNA UNIVERSITY, CHENNAI.**

**RESOLVED TO RATIFY** the permission granted for the Special Elective courses for Ph.D. / M.S. (By Research) programmes offered in the University Departments under the Faculty of Information and Communication Engineering, Anna University, Chennai.

1. FI9101 UAV Aided Military Communications
2. FI9102 Deep Learning Techniques
3. FI9103 Cognitive Computation for Health Care

**II. ITEMS PERTAINING TO AFFILIATED INSTITUTIONS**

**FI22.05 TO CONSIDER AND APPROVE THE CURRICULUM I TO VIII SEMESTERS AND SYLLABUS OF I & II SEMESTERS FOR THE UG (FT) (CBCS) DEGREE PROGRAMMES TO BE OFFERED IN AFFILIATED INSTITUTIONS UNDER R-2017 WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018 ONWARDS.**

**RESOLVED TO APPROVE** the curriculum I to VIII semesters and syllabus of I & II semesters for the UG (FT) (CBCS) degree programmes to be offered in Affiliated Institutions under R-2017 with effect from the Academic year 2017 – 2018 onwards.

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1. B.E. Computer Science and Engineering
2. B.Tech. Information Technology
3. B.E. Electronics and Communication Engineering
4. B.E. Biomedical Engineering
5. B.E. Medical Electronics
6. B.E. Computer and Communication

- The Members suggested that Tutorials may be added for the course "Probability and Queuing Theory" and hence credits may be changed from 4 0 0 4 to 3 2 0 4 in the Curricula of B.E. Computer Science and Engineering.
- The Members suggested that The Course "Free Open Source" may be included as an elective in the Curriculum of B.Tech. Information Technology.
- The Members suggested that the title of the course Circuit Theory in the Curriculum of B.E. ECE may be changed to Circuit Analysis and title of the course Biochemistry in the Curriculum of B.E. Bio Medical Engineering may be changed to Fundamentals of Biochemistry.

**RESOLVED to carry out the above suggestions.**

**FI22.06 TO CONSIDER AND APPROVE THE NEW CURRICULA AND SYLLABI FOR THE PG (FT) (CBCS) DEGREE PROGRAMMES TO BE OFFERED IN AFFILIATED INSTITUTIONS UNDER R-2017 WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018 ONWARDS.**

**RESOLVED TO APPROVE** the new Curricula and Syllabi for the PG (FT) (CBCS) degree programmes to be offered in Affiliated Institutions under R-2017 with effect from the Academic year 2017 – 2018 onwards.

1. M.E. Computer Science and Engineering
2. M.E. Software Engineering
3. M.Tech. Information Technology

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4. M. E. Multimedia Technology
5. M.E. Computer Science and Engineering (Specialization in Networks)
6. M.E. Mobile and Pervasive Computing
7. Master of Computer Applications (M.C.A.)
8. M. E. Applied Electronics
9. M. E. Communication Systems
10. M. E. Bio-Medical Engineering
11. M.E. Medical Electronics
12. M.E. VLSI Design
13. M.E. Communication and Networking
14. M.E. Electronics and Communication Engineering
15. M.E. Digital Signal Processing
16. M.E. Biometrics and Cyber Security

- The Members suggested that topics on IOT may be included in the course Embedded System in the Curriculum of MCA.

**RESOLVED** to carry out the suggestions.

FI22.07 TO CONSIDER AND APPROVE THE COMMON SYLLABI FOR COMPUTER SCIENCE AND ENGINEERING RELATED SUBJECTS OF B.E. / B.TECH. DEGREE PROGRAMMES UNDER R – 2017, OFFERED BY THE AFFILIATED INSTITUTIONS UNDER THE FACULTY OF INFORMATION AND COMMUNICATION ENGINEERING, ANNA UNIVERSITY, CHENNAI WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018.

**RESOLVED TO APPROVE** the common syllabi for Computer Science and Engineering related subjects of B.E. / B.Tech. degree programmes under R – 2017, offered by the Affiliated Institutions under the faculty of Information and Communication Engineering, Anna University, Chennai with effect from the Academic year 2017 – 2018.

Common Syllabus for Computer Science Related Subjects of  
B.E. / B.Tech. Degree Programmes under R - 2017

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FI22.08 TO CONSIDER AND RATIFY THE PERMISSION GRANTED FOR THE SPECIAL ELECTIVE COURSES FOR Ph.D. / M.S. (BY RESEARCH) PROGRAMMES OFFERED IN AFFILIATED INSTITUTIONS UNDER THE FACULTY OF INFORMATION AND COMMUNICATION ENGINEERING, ANNA UNIVERSITY, CHENNAI.

**RESOLVED TO RATIFY** the permission granted for the Special Elective courses for Ph.D. / M.S. (By Research) programmes offered in Affiliated Institutions under the Faculty of Information and Communication Engineering, Anna University, Chennai.

**SIC004 Cloud Security**



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## AGENDA FROM FACULTY OF TECHNOLOGY

## I. ITEMS PERTAINING TO UNIVERSITY DEPARTMENTS

FT22.01 TO CONSIDER AND APPROVE THE FOLLOWING ADDITIONAL LAB COURSE "CT7713 ADVANCED CERAMIC PROCESSING LAB" WHICH IS PROPOSED TO BE INCLUDED IN VII SEMESTER OF THE CURRICULUM FOR B. TECH. CERAMIC TECHNOLOGY DEGREE PROGRAMME (FT) UNDER R-2015 (CBCS) OFFERED BY THE UNIVERSITY DEPARTMENTS.

RESOLVED TO APPROVE the following Additional Lab course "CT7713 Advanced Ceramic Processing Lab" which is proposed to be included in VII semester of the Curriculum for B. Tech. Ceramic Technology degree programme (FT) under R-2015 (CBCS) offered by the University Departments.

B. TECH. Ceramic Technology (Revised)

## II. ITEMS PERTAINING TO AFFILIATED INSTITUTIONS

FT22.02 TO CONSIDER AND APPROVE THE NEW CURRICULA FOR ALL THE SEMESTERS AND SYLLABI OF I & II SEMESTERS FOR THE FOLLOWING UG (FT) DEGREE PROGRAMMES UNDER CBCS TO BE OFFERED IN AFFILIATED INSTITUTIONS UNDER R-2017 WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018 ONWARDS.

RESOLVED TO APPROVE the new Curricula for all the semesters and Syllabi of I & II semesters for the following UG (FT) degree programmes under CBCS to be offered in Affiliated Institutions under R-2017 with effect from the Academic year 2017 – 2018 onwards.

1. B.Tech.Chemical Engineering
2. B.Tech. Biotechnology
3. B.Tech. Polymer Technology
4. B.Tech. Plastics Technology

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5. B.Tech.Textile Technology
6. B.Tech. Fashion Technology
7. B.Tech.Petroleum Engineering
8. B.Tech.Textile Chemistry
9. B.Tech.Chemical & Electrochemical Engineering
10. B.Tech.Petrochemical Technology
11. B.Tech. Pharmaceutical Technology
12. B.E. Petrochemical Engineering
13. B.Tech. Food Technology
14. B.Tech. Handloom and Textile Technology

- The members suggested that in the Curriculum of B.Tech. Chemical Engineering the course "Chemical Engineering Thermodynamics I" may be offered before the course "Heat Transfer" is offered.

**RESOLVED** to carry out the suggestions.

**FT22.03 TO CONSIDER AND APPROVE THE NEW CURRICULA AND SYLLABI UNDER CBCS FOR THE FOLLOWING PG(FT) DEGREE PROGRAMMES TO BE OFFERED IN AFFILIATED INSTITUTIONS UNDER R-2017 (CBCS) WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018 ONWARDS.**

**RESOLVED TO APPROVE** the new Curricula and Syllabi under CBCS for the following PG(FT) degree programmes to be offered in Affiliated Institutions under R-2017 (CBCS) with effect from the Academic year 2017 – 2018 onwards.

1. M.Tech. Chemical Engineering
2. M.Tech. Biotechnology
3. M.Tech. Textile Technology
4. M.Tech. Plastics Technology
5. M.Tech. Textile Technology (with specialization in Textile Chemistry)
6. M.Tech. Nano Science and Technology

7. M.Tech. Polymer Science and Engineering
8. M.Tech. Petroleum Refining and Petrochemicals
9. M.Tech. Biopharmaceutical Technology
10. M.Tech. Environmental Science and Technology

➤ The Members suggested that Tutorials may be added for the course "Advanced Numerical Methods" and hence L T P C need change from 4 0 0 4 to 3 2 0 4 in the Curricula of M. Tech. Chemical Engineering, M. Tech. Petroleum Refining and Petrochemicals and M. Tech. and Environmental Science and Technology.

**RESOLVED to carry out the suggestions.**

**FT22.04 TO CONSIDER AND APPROVE THE SYLLABI OF V TO VIII SEMESTERS FOR THE FOLLOWING UG (FT) DEGREE PROGRAMMES TO BE OFFERED IN AFFILIATED INSTITUTIONS UNDER R-2013 WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018 ONWARDS.**

**RESOLVED TO APPROVE** the Syllabi of V to VIII semesters for the following UG (FT) degree programmes being offered in Affiliated Institutions under R-2013 with effect from the Academic year 2017 – 2018 onwards.

**B. Tech. Handloom and Textile Technology**

**FT22.05 TO CONSIDER AND RATIFY THE PERMISSION GRANTED FOR THE REVISED SYLLABUS FOR THE COURSE "GE6351 - ENVIRONMENTAL SCIENCE AND ENGINEERING" OF B.TECH FOOD TECHNOLOGY DEGREE PROGRAMME OFFERED IN AFFILIATED INSTITUTIONS UNDER R-2013 WITH EFFECT FROM THE ACADEMIC YEAR 2016 – 2017 ONWARDS.**

**RESOLVED TO RATIFY** the permission granted for the following revised syllabus for the course "GE6351 - Environmental Science and Engineering" of B.Tech Food Technology degree programme offered in Affiliated Institutions under R-2013 with effect from the Academic year 2016 – 2017 onwards.

**GE6351 - Environmental Science and Engineering**

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## AGENDA FROM FACULTY OF ARCHITECTURE AND PLANNING

## I. ITEMS PERTAINING TO AFFILIATED INSTITUTIONS

**FA22.01 TO CONSIDER AND APPROVE THE CURRICULUM FOR ALL THE SEMESTERS AND SYLLABI OF I & II SEMESTERS FOR THE B. ARCH. (FT) DEGREE PROGRAMMES (CBCS) TO BE OFFERED IN AFFILIATED INSTITUTIONS UNDER R-2017 WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018 ONWARDS.**

**RESOLVED TO APPROVE** the Curriculum for all the semesters and Syllabi of I & II semesters for the B. Arch. (FT) degree programmes (CBCS) to be offered in Affiliated Institutions under R-2017 with effect from the Academic year 2017 – 2018 onwards.

B. Arch

**FA22.02 TO CONSIDER AND APPROVE THE NEW CURRICULA AND SYLLABI UNDER CBCS FOR THE M. ARCH. (FT) DEGREE PROGRAMMES TO BE OFFERED IN AFFILIATED INSTITUTIONS UNDER R-2017 WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018 ONWARDS.**

**RESOLVED TO APPROVE** the new Curricula and Syllabi under CBCS for the M. Arch. (FT) degree programmes to be offered in Affiliated Institutions under R-2017 with effect from the Academic year 2017 – 2018 onwards.

1. M. Arch. (General)
2. M. Arch. (Environmental Architecture)
3. M. Arch. (Real Estate Development)
4. M. Arch. (Conservation)

  
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## AGENDA FROM FACULTY OF SCIENCE AND HUMANITIES

## I. ITEMS PERTAINING TO UNIVERSITY DEPARTMENTS

**FS22.01 TO CONSIDER AND RATIFY THE PRESCRIBED LAB COURSE "XC7161 COMPUTING LABORATORY" SYLLABUS FOR M.Sc. (5 YEARS INTEGRATED) COMPUTER SCIENCE AND INFORMATION TECHNOLOGY UNDER R-2015 (CBCS) UNIVERSITY DEPARTMENT THAT ARE REVISED.**

**RESOLVED TO RATIFY** the prescribed Lab course "XC7161 Computing Laboratory" syllabus for M.Sc. (5 years Integrated) Computer Science and Information Technology under R-2015 (CBCS) University Department that are revised.

Revised Syllabus

**FS22.02 TO CONSIDER AND RATIFY THE PERMISSION GRANTED FOR THE SPECIAL ELECTIVE COURSES FOR Ph.D. / M.S. (BY RESEARCH) PROGRAMMES OFFERED IN THE UNIVERSITY DEPARTMENTS UNDER THE FACULTY OF SCIENCE AND HUMANITIES, ANNA UNIVERSITY, CHENNAI.**

**RESOLVED TO RATIFY** the permission granted for the Special Elective courses for Ph.D. / M.S. (By Research) programmes offered in the University Departments under the Faculty of Science and Humanities, Anna University, Chennai.

- 1. FS 9013 Mass Communication Strategies for Green Buildings**
- 2. FS 9014 Advanced Chemistry and Technology of Vegetable and Organic Tannages**


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## II. ITEMS PERTAINING TO AFFILIATED INSTITUTIONS

**FS22.03 TO CONSIDER AND APPROVE THE SYLLABI FOR THE FOLLOWING COURSES OF THE UG & PG (FULL-TIME) DEGREE PROGRAMMES (CBCS) TO BE OFFERED IN THE AFFILIATED INSTITUTIONS UNDER REGULATIONS 2017.**

**RESOLVED TO APPROVE** the Syllabi for the following courses of the UG & PG (Full-Time) degree programmes (CBCS) to be offered in the Affiliated Institutions under Regulations 2017.

1. English
2. Mathematics - UG & PG
3. Physics
4. Chemistry

  
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## AGENDA FROM FACULTY OF MANAGEMENT SCIENCES

## I. ITEMS PERTAINING TO UNIVERSITY DEPARTMENTS

**FN22.01 TO CONSIDER AND RATIFY THE FOLLOWING REVISED CURRICULUM OF MBA (PART TIME) UNDER R-2015 (CBCS) OFFERED IN UNIVERSITY DEPARTMENTS.**

**RESOLVED TO RATIFY** the following revised Curriculum of MBA (Part Time) under R-2015 (CBCS) offered in University Departments.

**MBA (Part Time)**

**FN22.02 TO CONSIDER AND RATIFY THE PERMISSION GRANTED FOR THE SPECIAL ELECTIVE COURSES FOR PH.D. / M.S. (BY RESEARCH) PROGRAMMES OFFERED IN THE UNIVERSITY DEPARTMENTS UNDER THE FACULTY OF MANAGEMENT SCIENCES, ANNA UNIVERSITY, CHENNAI.**

**RESOLVED TO RATIFY** the permission granted for the Special Elective courses for Ph.D. / M.S. (By Research) programmes offered in the University Departments under the Faculty of Management Sciences, Anna University, Chennai.

1. **FN 9010 Food Psychology**
2. **FN 9011 Financial Econometrics**
3. **FN 9012 Corporate Frauds & Risk Management**

## II. ITEMS PERTAINING TO AFFILIATED INSTITUTIONS

**FN22.03 TO CONSIDER AND APPROVE THE I TO X SEMESTERS CURRICULA AND I & IV SEMESTERS SYLLABI FOR MBA (INTEGRATED - 5 YEARS) DEGREE PROGRAMME TO BE OFFERED IN AFFILIATED INSTITUTIONS UNDER R-2015 WITH EFFECT FROM THE ACADEMIC YEAR 2016 – 2017 ONWARDS.**

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31 K. S. R. KALVINAGAR,  
TIRUCHENGODE-637 215,  
NAMAKKAL DI. TAMIL NADU.**



**RESOLVED TO APPROVE** the I to X semesters Curricula and I & IV semesters Syllabi for MBA (Integrated - 5 years) degree programme to be offered in Affiliated Institutions under R-2015 with effect from the Academic year 2016 – 2017 onwards.

**MBA (INTEGRATED - 5 YEARS)**

**FN22.04 TO CONSIDER AND APPROVE THE NEW CURRICULA AND SYLLABI FOR THE MBA (FT) (CBCS) DEGREE PROGRAMME TO BE OFFERED IN AFFILIATED INSTITUTIONS UNDER R-2017 WITH EFFECT FROM THE ACADEMIC YEAR 2017 – 2018 ONWARDS.**

**RESOLVED TO APPROVE** the new Curricula and Syllabi for the MBA (FT) (CBCS) degree programme to be offered in Affiliated Institutions under R-2017 with effect from the academic year 2017 – 2018 onwards.

**MASTER OF BUSINESS ADMINISTRATION**

  
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TIRUCHENGODE-637 215,  
NAMAKKAL DI, TAMIL NADU.**

## AGENDA FROM RESEARCH BOARD

**FR 22.01 TO INFORM THE DETAILS ABOUT THE Ph.D. AWARDEES IN THE 36<sup>TH</sup> CONVOCATION.**

**RESOLVED** to note a total number of **1385** Ph.D. and **40** M.S./M.Tech. (By Research) scholars have been awarded degrees under various Faculties during the 36<sup>th</sup> Convocation held on 20.01.2016 as detailed below.

FACULTY	Ph.D.	M.S.	M.Tech.
Civil Engineering	73	4	
Mechanical Engineering	207	6	
Electrical Engineering	169	1	
Information and Communication Engineering	470	9	8
Technology	85	11	
Architecture & Planning	3	-	
Science & Humanities	323	1	
Management Sciences	55	-	
<b>Total</b>	<b>1385</b>	<b>32</b>	<b>8</b>

**FR 22.02 TO INFORM THE DETAILS OF RESEARCH SCHOLARS WHO HAVE BEEN PERMITTED FOR EXTENSION OF TIME TO SUBMIT THEIR Ph.D. THESIS**

**RESOLVED** to note the list of Ph.D. scholars granted extension of time to submit the thesis after the previous Research Board meeting as given in the Annexure – I (A1 – 1 to 44)

**FR 22.03 TO INFORM THE APPROVAL GIVEN FOR SUPERVISOR RECOGNITION**

**RESOLVED** to note the list of applicants recommended by the respective Faculty Chairperson and approved by the Vice-Chancellor for Supervisor Recognition as given in **Annexure – II** (A2 – 1 to 63).

PRINCIPAL  
 ENGINEER  
 K. S. R. K. S. VI NAGAR,  
 TIRUCHENGODE-637 215,  
 NAMAKKAL DI, TAMIL NADU.

Further Resolved to place the approved list of Supervisor Recognized in the forthcoming Academic Council meeting.

**FR 22.04 TO INFORM THE RECOMMENDATIONS OF THE INSPECTION COMMITTEES CONSTITUTED BY THE VICE-CHANCELLOR FOR RECOGNITION OF DEPARTMENT / ORGANIZATION**

**RESOLVED** to note the list of Departments and R&D centres approved by the Vice-Chancellor for research centre recognition based on the recommendation of the Inspection Committee as given in **Annexure-III** (Page No. A3-1 to 2).

**FURTHER RESOLVED** to place the list of recognized research Departments and R&D centres in the forthcoming Academic Council meeting.

**FR 22.05 TO CONSIDER AND APPROVE THE FULL-TIME Ph.D. CANDIDATES WHO HAVE BEEN SELECTED FOR THE AWARD OF ANNA CENTENARY RESEARCH FELLOWSHIP – 2016 FOR VARIOUS DEPARTMENTS AND CENTRES**

**RESOLVED** to note the list of candidates recommended for the award of Anna Centenary Research Fellowship – 2016 as given in **Annexure – IV** (A4 – 1 to 2).

**FR 22.06 TO CONSIDER AND APPROVE THE SELECTION OF CANDIDATES FOR ADMISSION TO Ph.D./M.S. (By RESEARCH) PROGRAMMES FOR JANUARY 2016 SESSION**

**RESOLVED** to note that the written test for eligible candidates was conducted by the Centre for Entrance Examinations, Anna University on 20.12.2015 and the selection is based on the marks/grades secured in Qualifying Degree, Written Test, and Interview.

**RESOLVED** to note the list of absentees and rejected candidates given in **Annexure-V** (Page No. A5-1 to 4).

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**NAMAKAL BL LINE 3404.**

**RESOLVED** to fix the minimum cut off marks for the selection of Ph.D. and M.S.(By Research) candidates for January 2016 as 45%, after perusing the marks obtained by the candidates. Accordingly the Recommended, Not Recommended and Withheld (for want of final semester mark sheets or any other required documents) candidates are given in **Annexure-VI** (Page No. A6 -1 to 28). The recommended candidates shall be admitted to Ph.D./M.S. (By Research) programme after verification of the original certificates and payment of necessary fees either in January 2016 or July 2016 session whichever they opt to join. The final admission for the Withheld candidates for want of Final semester mark sheet and the Recommended candidates whose result is Withheld for want of Course Equivalence/leave sanction and relieving order will be based on furnishing the required documents.

**RESOLVED** to note the following application was not considered for admission to Ph.D. programme as their qualifying PG degree is not equivalent to the PG degree of the specialization offered at Anna University, Chennai, even though he had attended the written test and interview.

Sl. No.	Appn. No.	Name of the candidate	Degree & University	Mode of Study
1.	16192322	Saran Kumar S	Hindustan University	UG Distance Mode and PG in Full Time Mode
2.	16194529	Prasanna SP	Birla Institute of Technology and Science	PG in Distance Mode
3.	16198121	Murugesh K	IGNOU	UG and PG in Distance Mode

**FR 22.07 TO CONSIDER THE PROPOSAL OF THE FOLLOWING AMENDMENTS IN THE Ph.D. REGULATIONS 2015.**

**REGULATIONS 2015 – AMENDMENTS**

**FR 22.08 TO CONSIDER AND APPROVE TO UPDATED LIST OF JOURNALS 2016 AND REMOVAL OF JOURNALS IN REVISED ANNEXURE I/II**

**RESOLVED** to upload the list of journals suggested by Chairpersons in the Updated list of Journals 2016 included in **Annexure VII (A7 – 1 to 12)**. It is also resolved to remove the journals suggested by concerned chairpersons from Annexure I and Annexure II list of Journals as given in **Annexure VII (A7 – 13)**.

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**FR 22.09 TO INFORM THE DETAILS OF RESEARCH SCHOLARS WHO HAVE BEEN PERMITTED FOR EXTENSION OF TIME TO SUBMIT THEIR Ph.D. THESIS**

**RESOLVED** to note the list of Ph.D. scholars granted extension of time to submit the thesis after the previous Research Board meeting as given in the Annexure – I (A1 – 1 to 44)

**FR 22.10 TO INFORM THE APPROVAL GIVEN FOR SUPERVISOR RECOGNITION**

**RESOLVED** to note the list of applicants recommended by the respective Faculty Chairperson and approved by the Vice-Chancellor for Supervisor Recognition as given in **Annexure – II** (A2 – 1 to A2 -94).

**Further Resolved** to place the approved list of Supervisor Recognized in the forthcoming Academic Council meeting.

**FR 22.11 TO INFORM THE RECOMMENDATIONS OF THE INSPECTION COMMITTEES CONSTITUTED BY THE VICE-CHANCELLOR FOR RECOGNITION OF DEPARTMENT / ORGANIZATION AS AN APPROVED RESEARCH CENTRE OF ANNA UNIVERSITY**

**RESOLVED** to note the list of Departments and R&D centres approved by the Vice-Chancellor for research centre recognition based on the recommendation of the Inspection Committee as given in **Annexure-III** (Page No. A3-1 to 3).

**FR 22.12 TO CONSIDER AND APPROVE THE SELECTION OF CANDIDATES FOR ADMISSION TO Ph.D./M.S. (By RESEARCH) PROGRAMMES FOR JULY 2016 SESSION**

**RESOLVED** to note that the written test for eligible candidates was conducted by the Centre for Entrance Examinations, Anna University on 24.04.2016 and the selection is based on the marks/grades secured in Qualifying Degree, Written Test, and Interview.

**RESOLVED** to note the list of absentees and rejected candidates given in **Annexure-V** (Page No. A4-1 to 4).

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NAMAKKAL Dt, TAMIL NADU.

**RESOLVED** to fix the minimum cut off marks for the selection of Ph.D. and M.S.(By Research) candidates for July 2016 as 45%, after perusing the marks obtained by the candidates. Accordingly the Recommended, Not Recommended and Withheld (for want of final semester mark sheets or any other required documents) candidates are given in **Annexure-V** (Page No. A5 -1 to 124). The recommended candidates shall be admitted to Ph.D./M.S. (By Research) programme after verification of the original certificates and payment of necessary fees either in July 2016 or January 2017 session whichever they opt to join. The final admission for the Withheld candidates for want of Final semester mark sheet and the Recommended candidates whose result is Withheld for want of Course Equivalence/leave sanction and relieving order will be based on furnishing the required documents.

**FR 22.13 TO CONSIDER AND APPROVE THE PENALTY FOR PLAGIARISM CONTENTS IN JOURNALS PUBLISHED FOR SUBMISSION OF SYNOPSIS / THESIS**

**RESOLVED** to approve the penalty for plagiarism contents in journals published for submission of synopsis / thesis.

**FR 22.14 TO CONSIDER REMOVAL OF CERTAIN JOURNALS AS RECOMMENDED BY THE FACULTY CHAIRPERSON FROM THE UPDATED LIST RELEASED BY CENTRE FOR RESEARCH DURING JANUARY 2016.**

**RESOLVED** to approve to remove the journals as recommended by the faculty chairperson from the annexure.

**FR 22.15 TO INFORM THE ADMISSION OF Ph.D. SCHOLARS UNDER QIP SCHEME OF AICTE IN JULY 2015 AND JULY 2016 SESSION**

**Resolved** to note that the following candidates were admitted to Ph.D. Programme in July 2015 and July 2016 session on Full Time basis under QIP with the approval of the Vice-Chancellor and the Convener Committee as they have already completed their pre-registration programme during 2014 – 2015 and 2015 – 2016 and fulfilled all other requirements in Annexure:

ANNEXURE RB I**FR 22.16 TO INFORM THE DETAILS OF RESEARCH SCHOLARS WHO HAVE BEEN PERMITTED FOR EXTENSION OF TIME TO SUBMIT THEIR Ph.D. THESIS**

**RESOLVED** to note the extension of time granted to 1016 research scholars based on the recommendation of the Doctoral Committee and approval by the Director (Research) after the previous Research Board meeting.

**FR 22.17 TO INFORM THE APPROVAL GIVEN FOR SUPERVISOR RECOGNITION**

**RESOLVED** to note the list of applicants recommended by the respective Faculty Chairperson and approved by the Dean (CEG) – Member-Convener Committee for Supervisor Recognition.


**Further Resolved** to place the approved list of Supervisor Recognized in the forthcoming Academic Council meeting.

**FR 22.18 TO INFORM THE RECOMMENDATIONS OF THE INSPECTION COMMITTEES CONSTITUTED BY THE VICE-CHANCELLOR FOR RECOGNITION OF DEPARTMENT / ORGANIZATION AS AN APPROVED RESEARCH CENTRE OF ANNA UNIVERSITY**

**RESOLVED** to note the list of Departments and R&D centres approved for research centre recognition based on the recommendation of the Inspection Committee and approved by the member of the convener committee.

**FR 22.19 TO CONSIDER AND APPROVE THE FULL-TIME Ph.D. CANDIDATES WHO HAVE BEEN SELECTED FOR THE AWARD OF ANNA CENTENARY RESEARCH FELLOWSHIP – 2017 FOR VARIOUS DEPARTMENTS AND CENTRES.**

**RESOLVED** to note the list of candidates recommended for the award of Anna Centenary Research Fellowships – 2017.

  
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NAMAKKAL DI, TAMIL NADU.**

**FR 22.20 TO RATIFY THE AMENDMENTS TO THE Ph.D./M.S. (By RESEARCH) REGULATIONS.**

**RESOLVED** to amend the following clause of Ph.D. Regulations 2015 in Annexure.

**ANNEXURE RB II**

**FR 22.21 TO CONSIDER AND APPROVE THE SELECTION OF CANDIDATES FOR ADMISSION TO Ph.D./M.S. (By RESEARCH) PROGRAMMES FOR JANUARY 2017 SESSION**

**RESOLVED** to note that the written test for eligible candidates was conducted by the Centre for Entrance Examinations, Anna University on 23.10.2016 and the selection is based on the marks/grades secured in Qualifying Degree, Written Test, and Interview.

**RESOLVED** to fix the minimum cut off marks for the selection of Ph.D. and M.S.(By Research) candidates for January 2017 as 50%, after perusing the marks obtained by the candidates. The recommended candidates shall be admitted to Ph.D./M.S. (By Research) programme after verification of the original certificates and payment of necessary fees either in January 2017 or July 2017 session whichever they opt to join. The final admission for the withheld candidates for want of final semester mark sheet and the recommended candidates whose result is withheld for want of course equivalence/leave sanction and relieving order will be based on furnishing the required documents.

**RESOLVED** to note the list of candidates not eligible for admission to Ph.D. programme as their qualifying PG degree is not equivalent to the PG degree of the specialization offered at Anna University, Chennai.

**FR 22.22 MATTERS FOR DISCUSSION**

**22.22.01 TO DISCUSS AND IMPLEMENT THE PH.D. REGULATIONS IN ACCORDANCE WITH UGC (MINIMUM STANDARDS AND PROCEDURE FOR AWARD OF M.PHIL/Ph.D. DEGREE) REGULATIONS 2016**



**Resolved** to implement the following clauses of the UGC Regulations 2016 from January 2017 in Annexure.

**ANNEXURE RB III**

**22.22.02 TO ENHANCE THE QUALITY OF THESIS**

**Resolved** to note that the Recognized Research Centre/Institutions shall be instructed to acquire suitable software for checking the Language and Grammar in order to enhance the quality of the synopsis/thesis/ publications.

**22.22.03 TO CONSIDER THE INCLUSION OF TWO JUNIOR RESEARCH FELLOW (JRF) CANDIDATES AWARDED IN IGCAR, KALPAKKAM FOR ADMISSION TO PH.D. PROGRAMME FOR JANUARY 2017 SESSION**

**Resolved** to implement UGC regulations 2016 for admission Ph.D./M.S.(By Research) programme Entrance Test for those students who qualify UGC-NET (including JRF)/UGC-CSIR NET (including JRF)/SLET/GATE/teacher fellowship holder from January 2017 session as per UGC regulation 2016 in Annexure.

**ANNEXURE RB IV**

**Further Resolved** to consider two candidates Ms.Shobhana and Ms.C.Bhuvanewari who were qualified for Junior Research Fellow (JRF) at Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam, Department of Atomic Energy, Government of India for admission to Ph.D. programme during January 2017 session.

**FR 22.23 TO INFORM THE DETAILS OF RESEARCH SCHOLARS WHO HAVE BEEN PERMITTED FOR EXTENSION OF TIME TO SUBMIT THEIR Ph.D. THESIS**

**RESOLVED** to note the list of Ph.D. scholars granted extension of time to submit the thesis after the previous Research Board meeting as given in agenda Annexure – I (A1 – 1 to A1- 76)

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NAMAKKAL Dt. TAMIL NADU.

**FURTHER RESOLVED** that request of scholars for extension to submit synopsis beyond 6 years may be granted for one year only. If required further extension of 6 month shall be granted as a special case based on the recommendation of the supervisor forwarded by the Head of the Department through the Principal provided the scholars submit Synopsis / Thesis.

**FR 22.24 TO INFORM THE APPROVAL GIVEN FOR SUPERVISOR RECOGNITION.**

**RESOLVED** to note as given in agenda **Annexure – II** (A2 – 1 to A2 -85).

**FR 22.25 TO INFORM THE RECOMMENDATIONS OF THE INSPECTION COMMITTEES CONSTITUTED BY THE CONVENER COMMITTEE FOR RECOGNITION OF DEPARTMENT / ORGANIZATION AS AN APPROVED RESEARCH CENTRE OF ANNA UNIVERSITY.**

**RESOLVED** to note the list of Departments and R&D centres approved by the Convener Committee for research centre recognition based on the recommendation of the Inspection Committee as given in agenda **Annexure-III**(Page No.A3-1 to A3-3).

**FR 22.26 TO CONSIDER AND APPROVE THE SELECTION OF CANDIDATES FOR ADMISSION TO Ph.D./M.S. (By RESEARCH) PROGRAMMES FOR JULY 2017 SESSION.**

**RESOLVED** to note that the written test for eligible candidates was conducted by the Centre for Entrance Examinations, Anna University on 07.05.2017 and the selection is based on the marks/grades secured in Qualifying Degree, Written Test, and Interview.

**RESOLVED** to note the list of candidates exempted from the written test, who have qualified for UGC-NET (including JRF)/ UGC-CSIR NET (including JRF)/ SLET /GATE / Teacher Fellowship holder as per UGC regulation given in agenda **Annexure- IV** (Page No. A4-1 to A4-2).

**RESOLVED** to note the list of absentees given in agenda Annexure-V (Page No.A5-1 to A5-4).

**RESOLVED** to fix the cut off marks for the selection of Ph.D. and M.S.(By Research) candidates for July 2017 as 50%, after perusing the marks obtained by the candidates. The recommended candidates shall be admitted to Ph.D./M.S. (By Research) programme after verification of the original certificates and payment of necessary fees either in July 2017 or January 2018 session whichever they opt for. The final admission for the withheld candidates for want of Final Semester Mark Sheet and the recommended candidates whose result is withheld for want of Course Equivalence/Leave Sanction and Relieving Order (as applicable) will be based on furnishing the required documents.

**FR 22.27 TO CONSIDER AND APPROVE 50% FEE CONCESSION TO THE REGULAR FACULTY MEMBERS WHO ARE WORKING IN GOVERNMENT POLYTECHNIC COLLEGES.**

**RESOLVED** to approve the 50% fee concession to the regular faculty members who are working in Government Polytechnic Colleges doing Part Time research.

**FR 22.28 TO CONSIDER AND APPROVE THE REMOVAL OF JOURNALS LISTED IN ANNEXURE -II AND SOME JOURNALS FROM THE UPDATED LIST.**


**RESOLVED** to approve the removal of journals listed in Annexure -II

It is resolved to approve the removal list of journals given in the agenda Annexure - VII (Page.No.A7-1 to A7-2) except Sl.No.1 & 2 (All IEEE Transactions and All ACM Transactions).

It is also resolved that a common meeting of Faculty Chairpersons may be convened to finalize the journals, which are indexed in Web of Science, SCI, Scopus, Thomson Reuters and ICI.

**FURTHER RESOLVED** that in future only one list will be displayed.

**FR 22.29 TO CONSIDER AND APPROVE THE RESEARCH CENTRE RECOGNITION FOR GOVERNMENT ORGANIZATIONS WITHOUT INSPECTION.**

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NAMAKKAL DL, TAMIL NADU.

**RESOLVED** to follow the existing norms for sending expert members and the TA/DA may be met from the Centre for Research if the Government Organisation had the difficulty to meet the expenditure.

**ANY OTHER ITEM:**

**RESOLVED** to approve the request of change of faculty from Faculty of Civil Engineering to Faculty of Architecture and Planning for the three candidates, Ms.A.Madhumathi (Reg.No.1408101004), Mr.V.Balasubramanian, (Reg.No. 1408101006) and Ms.P.Shabitha (Reg.No.1408101009) who had registered for Ph.D. in the Faculty of Civil Engineering in erstwhile Anna University of Technology Tirunelveli, since there was no Faculty of Architecture and Planning at Anna University of Technology, Tirunelveli.

**5. ANY OTHER ITEMS, IF ANY, WITH THE PERMISSION OF THE CHAIRMAN OF THE ACADEMIC COUNCIL.**

Other points discussed by the Academic council.

- Members suggested that a suitable model be designed to identify the difficulty level of the questions based on Blooms Taxonomy. It was also suggested that each question may be tagged with the difficulty level in order to enable better evaluation strategies.

**RESOLVED TO NOTE** that steps will be taken to come up with the suitable model.

- Members suggested that a pedagogy based Value Added Course may be introduced.

**RESOLVED** to consider the issue and come up with suitable syllabus for the same.

- The members suggested that Entrepreneurship Development Programme may be added in the curriculum of all programmes.

**RESOLVED** to consider the suggestion and include the same in the curriculum after discussions in the next Board of Studies.

**REGISTRAR & SECRETARY**  
**OF THE**  
**ACADEMIC COUNCIL**

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**K. S. R. KALVI NAGAR,**  
**TIRUCHENGODE-637 215,**  
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# ANNA UNIVERSITY, CHENNAI

## UG (B.E. / B. Tech.) REGULATIONS 2008

### CREDIT SYSTEM

### AFFILIATED COLLEGES

### DEGREE OF BACHELOR OF ENGINEERING / TECHNOLOGY

The following Regulations are applicable to all Engineering Colleges affiliated to Anna University, Chennai (other than Autonomous Colleges) and to all the University Colleges of Engineering of Anna University, Chennai.

#### 1. PRELIMINARY DEFINITIONS AND NOMENCLATURE

In these Regulations, unless the context otherwise requires:

- I) "Programme" means Degree Programme, that is B.E./B.Tech. Degree Programme.
- II) "Discipline" means specialization or branch of B.E./B.Tech. Degree Programme, like Civil Engineering, Textile Technology, etc.
- III) "Course" means a theory or practical subject that is normally studied in a semester, like Mathematics, Physics, etc.
- IV) "Director, Academic Courses" means the authority of the University who is responsible for all academic activities of the University Departments for implementation of relevant rules of this Regulations.
- V) "Head of the Institution" means the Principal of the Campus.
- VI) "Chairperson" means the Head of the Faculty.
- VII) "Head of the Department" means head of the Department concerned.
- VIII) "Controller of Examinations" means the authority of the University who is responsible for all activities of the University Examinations.
- IX) "University" means ANNA UNIVERSITY, CHENNAI.

#### 2. ADMISSION

- 2.1 Candidates seeking admission to the first semester of the eight semester B.E. / B.Tech. Degree Programme:

Should have passed the Higher Secondary Examinations of (10 +2) Curriculum (Academic Stream) prescribed by the Government of Tamil Nadu with Mathematics, Physics and Chemistry as three of the four courses of study under Part-III or any examination of any other University or authority accepted by the Syndicate of Anna University as equivalent thereto.

(OR)

Should have passed the Higher Secondary Examination of Vocational stream (Vocational groups in Engineering / Technology) as prescribed by the Government of Tamil Nadu.

(OR)

Should possess the Diploma in Engineering / Technology awarded by the State Board of Technical Education, Tamil Nadu or any other authority accepted by the Syndicate of the university as equivalent thereto.

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K. S. R. KALVI NAGAR,  
TRUCHENGODE - 637 215,  
NAMAKKAL Dt, TAMIL NADU.

## 2.2 Lateral entry admission

- (i) The candidates who possess the Diploma in Engineering / Technology awarded by the State Board of Technical Education, Tamilnadu or its equivalent are eligible to apply for Lateral entry admission to the third semester of B.E. / B.Tech. in the branch corresponding to the branch of study.

(OR)

- (ii) The candidates who possess the Degree in Science (B.Sc.) (10+2+3 stream) with Mathematics as a subject at the B.Sc. Level are eligible to apply for Lateral entry admission to the third semester of B.E. / B.Tech.

Such candidates shall undergo two additional Engineering subject(s) in the third or fifth and fourth or sixth semesters respectively as prescribed by the respective Faculty. (See **Annexure - I**).

## 3. PROGRAMMES OFFERED

A candidate may be offered a programme in any one of the branches of study approved by the University (See **Annexure - II**), and offered by that college where the candidate is admitted.

Programmes offered in Anna University, Chennai are mentioned in Annexure - II.

## 4. STRUCTURE OF PROGRAMMES

- 4.1 Every Programme will have curricula with syllabi consisting of theory and practicals such as:

- (i) General core courses comprising mathematics, basic sciences, Engineering sciences, humanities and engineering.
- (ii) Core courses of Engineering/Technology.
- (iii) Elective courses for specialization in related fields.
- (iv) Workshop Practice, Computer Practice, Engineering Graphics, Laboratory work, Industrial training, Seminar presentation, Project work, Educational tours, Camps etc.
- (v) NCC / NSS / NSO / YRC activities for character development

There shall be a certain minimum number of core courses and sufficient number of elective courses that can be opted by the student. The blend of different courses shall be so designed that the student, at the end of the programme, would have been trained not only in his / her relevant professional field but also would have developed as a socially conscious human being.

- 4.2 Each course is normally assigned certain number of credits with 1 credit per lecture period per week, 1 credit per tutorial period per week, 1 credit for 2 periods of laboratory or practical or seminar or project work per week (2 credits for 3 or 4 periods of practical) and 1 credit for 2 weeks, 2 credits for 4 weeks and 3 credits for 6 weeks of industrial training during semester vacations.
- 4.3 Each semester curriculum shall normally have a blend of lecture courses not exceeding 7 and practical courses not exceeding 4. However, the total number of courses per semester shall not exceed 10.
- 4.4 For the award of the degree, a student has to earn certain minimum total number of credits specified in the curriculum of the relevant branch.
- 4.5 The medium of instruction is English for all courses, examinations, seminar presentations and project / thesis / dissertation reports except for the programmes offered as Tamil Medium courses.

## 5. DURATION OF THE PROGRAMME


- 5.1 A student is ordinarily expected to complete the B.E. / B.Tech. Programme in 8 semesters (four academic years) but in any case not more than 14 Semesters for HSC candidates and not more than 12 semesters for Lateral Entry Diploma / B.Sc. Candidates.
- 5.2 Each semester shall normally consist of 90 working days or 450 periods of 50 minutes each. The principal shall ensure that every teacher imparts instruction as per the number of periods / hours specified in the syllabus and that the teacher teaches the full content of the specified syllabus for the course being taught.
- 5.3 The Head of the Institution / Principal may conduct additional classes for improvement, special coaching, conduct of model test etc., over and above the Specified periods. But for the purpose of calculation of attendance requirement or writing the end semester examinations (as per clause 6) by the students 450 periods conducted within the specified academic schedule alone shall be taken into account and the overall percentage of attendance shall be calculated accordingly.

The University Examination will ordinarily follow immediately after the last working day of the semester commencing from 1 semester as per academic schedule prescribed from time to time.

- 5.4 The total period for completion of the programme reckoned from the commencement of the first semester to which the candidate was admitted shall not exceed the maximum period specified in clause 5.1 Irrespective of the period of break of study (vide clause 18.3) in order that he/she may be eligible for the award of the degree (vide clause 15).

## 6. REQUIREMENTS FOR COMPLETION OF THE SEMESTER

- 6.1 A Candidate who has fulfilled the following conditions shall be deemed to have satisfied the requirements for completion of a semester.  
Ideally every student is expected to attend all classes and secure 100% attendance. However, in order to give provision for certain unavoidable reasons such as Medical / participation in sports / personal, the student is expected to attend atleast 75% of the classes during **any semester commencing from First semester.**
- 6.1.1 **Therefore, he/she shall secure not less than 75% (after rounding off to the nearest integer) of overall attendance taking into account the total number of 450 periods in a semester within 90 working days in all courses put together attended by the candidate as against the total number of periods in all courses offered during the semester (vide clause 5.3)**
- 6.2 However, a candidate who secures overall attendance between 65% and 74% in that current semester due to medical reasons (prolonged hospitalization / accident / specific illness / Participation in Sports events) may be permitted to appear for the current semester examinations subject to the condition that the candidate shall submit the medical certificate attested by the Head of the Institution. The same shall be forwarded to the Controller of Examinations, Anna University, Chennai for record purposes.
- 6.3 Candidates who **secure less than 65% of overall attendance** shall not be permitted to write the University examination at the end of the semester and not permitted to move to the next semester. They are required to repeat the incomplete semester in the next academic year, as per the norms prescribed.

  
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## 7. CLASS ADVISER

To help the students in planning their courses of study and for general advice on the academic programme, the Head of the Department of the students will attach a certain number of students to a teacher of the Department who shall function as Class Adviser for those students throughout their period of study. Such Class Advisers shall advise the students and monitor the courses undergone by the students, check the attendance and progress of the students attached to him/her and counsel them periodically. If necessary, the Class adviser may also discuss with or inform the parents about the progress of the students.

## 8. CLASS COMMITTEE

8.1. Every class shall have a class committee consisting of teachers of the class concerned, student representatives and a chairperson who is not teaching the class. It is like the 'Quality Circle' (more commonly used in industries) with the overall goal of improving the teaching-learning process. The functions of the class committee include

- Solving problems experienced by students in the class room and in the laboratories.
- **Clarifying the regulations of the degree programme and the details of rules therein particularly clause 5 and 6 which should be displayed on college Notice-Board.**
- Informing the student representatives the academic schedule including the dates of assessments and the syllabus coverage for each assessment.
- Informing the student representatives the details of Regulations regarding weightage used for each assessment. In the case of practical courses (laboratory / drawing / project work / seminar etc.) the breakup of marks for each experiment / exercise / module of work, should be clearly discussed in the class committee meeting and informed to the students.
- Analyzing the performance of the students of the class after each test and finding the ways and means of solving problems, if any.
- Identifying the weak students, if any, and requesting the teachers concerned to provide some additional help or guidance or coaching to such weak students.

8.2 The class committee for a class under a particular branch is normally constituted by the head of the department. However, if the students of different branches are mixed in a class (like the first semester which is generally common to all branches), the class committee is to be constituted by the Principal.

8.3 The class committee shall be constituted within the first week of each semester.

8.4 At least 4 student representatives (usually 2 boys and 2 girls) shall be included in the class committee.

8.5 The chairperson of the class committee may invite the Faculty adviser(s) and the Head of the department to the meeting of the class committee.

8.6 The Principal may participate in any class committee of the institution.

8.7 The chairperson is required to prepare the minutes of every meeting, submit the same to Principal within two days of the meeting and arrange to circulate it among the students and teachers concerned. If there are some points in the minutes requiring action by the management, the same shall be brought to the notice of the Management by the Head of the Institution.



- 8.8 The first meeting of the class committee shall be held within one week from the date of commencement of the semester, in order to inform the students about the nature and weightage of assessments within the framework of the Regulations. Two or three subsequent meetings may be held in a semester at suitable intervals. The Class Committee Chairman shall put on the Notice Board the cumulative attendance particulars of each student at the end of every such meeting to enable the students to know their attendance details to satisfy the clause 6 of this Regulation. During these meetings the student members representing the entire class, shall meaningfully interact and express the opinions and suggestions of the other students of the class in order to improve the effectiveness of the teaching-learning process.

## 9. COURSE COMMITTEE FOR COMMON COURSES

Each common theory course offered to more than one discipline or group, shall have a "Course Committee" comprising all the teachers teaching the common course with one of them nominated as Course Coordinator. The nomination of the course Coordinator shall be made by the Head of the Department / Principal depending upon whether all the teachers teaching the common course belong to a single department or to several departments. The 'Course committee' shall meet in order to arrive at a common scheme of evaluation for the test and shall ensure a uniform evaluation of the tests. Wherever feasible, the course committee may also prepare a common question paper for the internal assessment test(s).

## 10. SYSTEM OF EXAMINATION


- 10.1 Performance in each course of study shall be evaluated based on (i) continuous internal assessment throughout the semester and (ii) University examination at the end of the semester.
- 10.2 Each course, both theory and practical (including project work & Viva voce Examinations) shall be evaluated for a maximum of 100 marks. The project work shall be evaluated for a maximum of 100 marks.
- 10.2.1 For all theory and practical courses including project work, the continuous internal assessment will carry **20 marks** while the End Semester University examination will carry **80 marks**.

Project work may be allotted to a single student or to a group of students not exceeding 4 per group.

- 10.3 The University examination (theory and practical) of 3 hours duration shall ordinarily be conducted between October and December during the odd semesters and between April and June during the even semesters.
- 10.4 The University examination for project work shall consist of evaluation of the final report submitted by the student or students of the project group (of not exceeding 4 students) by an external examiner followed by a viva-voce examination conducted separately for each student by a committee consisting of the external examiner, the guide of the project group and an internal examiner.
- 10.5 For the University examination in both theory and practical courses including project work the internal and external examiners shall be appointed by the University.

## 11. PROCEDURE FOR AWARDING MARKS FOR INTERNAL ASSESSMENT

For all theory and practical courses the continuous assessment shall be for a maximum of 20 marks (consisting of 15 marks for tests/experiments and 5 marks for attendance). The above continuous assessment shall be awarded as per the procedure given below:

  
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11.1.

(a) **Theory Courses**

Three tests each carrying 100 marks shall be conducted during the semester by the Department / College concerned. The total marks obtained in all tests put together out of 300, shall be proportionately reduced for 15 marks and rounded to the nearest integer (This also implies equal weightage to all the three tests).

(b) **Practical Courses:**

Every practical exercise / experiment shall be evaluated based on the exercise / experiment prescribed as per the syllabi and the records of work done maintained. There shall be at least one test during the semester. The criteria for arriving at the internal assessment marks (15 marks) shall be decided based on the recommendation of the class committee and shall be announced at the beginning of every semester by the Principal.

(c) **Internal Assessment for Theory Courses with Laboratory Component:**

The maximum marks for Internal Assessment shall be 15 in case of theory courses with Laboratory component.


If there is a theory course with Laboratory component, there shall be three tests: the first two tests (each 100 marks) will be from theory portions and the third test (maximum mark 100) will be for laboratory component. The sum of marks of first two tests shall be reduced to 30 marks and the third test mark shall be reduced to 30 marks. The sum of these 60 marks (Vide clause 11) may then be arrived at for 15 and rounded to the nearest integer.

11.2 **Project Work:**

The Principal shall constitute a review committee for each branch of study. There shall be three reviews (each 100 Marks) during the semester by the review committee. The student shall make presentation on the progress made by him / her before the committee. The total marks obtained in the three reviews shall be **reduced for 15 marks** and rounded to the nearest integer. (This also implies equal weightage to all the three assessments), **5 marks** shall be given for Attendance (Clause 11.3).

11.2.1 The project report shall carry a maximum 30 marks (same mark shall be awarded for the report submitted to every student within the project group) while the viva-voce examination shall carry 50 marks. (Marks are awarded to each student of the project group based on the individual performance in the viva-voce examination).

Attendance	Review I	Review II	Review III	End semester Examinations				
				Thesis Submission (30)		Viva-Voce (50)		
				Internal	External	Internal	External	Guide
5	5	5	5	15	15	16.66	16.66	16.66

  
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### 11.3 Attendance

The remaining 5 marks for attendance shall be awarded as given below:

#### Theory and Practical courses and Project Work

76% to 80% of attendance - 1 mark  
81% to 85% of attendance - 2 marks  
86% to 90% of attendance - 3 marks  
91% to 95% of attendance - 4 marks  
96% to 100% of attendance -5 marks

- 11.3 Every teacher is required to maintain an 'ATTENDANCE AND ASSESSMENT RECORD' which consists of attendance marked in each lecture or practical or project work class, the test marks and the record of class work (topic covered), separately for each course. This should be submitted to the Head of the department periodically (at least three times in a semester) for checking the syllabus coverage and the records of test marks and attendance. The Head of the department will put his signature and date after due verification. At the end of the semester, the record should be verified by the Principal who will keep this document in safe custody (for five years). The University or any inspection team appointed by the University may inspect the records of attendance and assessment of both current and previous semesters.

## 12. REQUIREMENTS FOR APPEARING FOR UNIVERSITY EXAMINATIONS

A candidate shall normally be permitted to appear for the University Examinations of any semester commencing from I semester if he/she has satisfied the semester completion requirements (subject to Clause 6) and has registered for examination in all courses of the semester. Registration is mandatory for semester examinations as well as arrear examinations, failing which the candidate will not be permitted to move to the higher semester.

A candidate who has already appeared for any subject in a semester and passed the examination is not entitled to reappear in the same subject for improvement of grades / marks.

## 13. PASSING REQUIREMENTS

- 13.1 A candidate who secures not less than 50% of total marks prescribed for the courses with a minimum of 45% of the marks prescribed for the end-semester University Examination in both theory and practical courses (including Project work), shall be declared to have passed the Examination.
- 13.1.1 If a candidate fails to secure a pass in a particular course, it is mandatory that he/she shall register and reappear for the examination in that course during the subsequent semester when examination is conducted in that course; he/she should continue to register and reappear for the examinations in the failed subjects till he / she secures a pass.
- 13.1.2 The internal assessment marks obtained by the candidate in the first appearance shall be retained and considered valid for all subsequent attempts till the candidate secure a pass. However, from the 3<sup>rd</sup> attempt onwards if a candidate fails to obtain pass marks (IA + End Semester Examination) as per clause 13.1 then the passing requirement shall be as follows:  
The candidate should secure 50% and above the maximum marks prescribed for course in the university examinations alone irrespective of Internal Assessment marks obtained.

#### 14. AWARD OF LETTER GRADES

14.1.1 All assessments of a course will be done on absolute marks basis. However, for the purpose of reporting the performance of a candidate, letter grades, each carrying certain number of points, will be awarded as per the range of total marks (out of 100) obtained by the candidate in each subject as detailed below:

Letter grade	Grade Points	Marks Range
S	10	91 – 100
A	9	81 – 90
B	8	71 – 80
C	7	61 – 70
D	6	57 – 60
E	5	50 – 56
U	0	< 50
I	0	
W	0	

"U" denotes **Reappearance** is required for the examination in the course. (This grade will figure both in Marks Sheet as well as in Result Sheet)

"W" denotes **withdrawal** from the course.

The Grade "I" denotes inadequate attendance (as per clause 12) and hence prevention from writing the end semester examination.

The Grade "I" and "W" will figure only in the Result Sheets.

#### Grade sheet

After results are declared, Grade Sheets will be issued to each student which will contain the following details:

- The college in which the candidate has studied
- The list of courses enrolled during the semester and the grade scored.
- The Grade Point Average (GPA) for the semester and
- The Cumulative Grade Point Average (CGPA) of all courses enrolled from first semester onwards.

GPA for a semester is the ratio of the sum of the products of the number of credits for courses acquired and the corresponding points to the sum of the number of credits for the courses acquired in the semester.

$$\text{GPA} = \frac{\text{Sum of [Credits acquired x Grade points]}}{\text{Sum of Credits acquired}}$$

CGPA will be calculated in a similar manner, considering all the courses registered from first semester. "U", "I" and "W" grades will be excluded for calculating GPA and CGPA.

$$\text{CGPA} = \frac{\sum_{i=1}^n C_i \text{GP}_i}{\sum_{i=1}^n C_i}$$

  
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where  $C_i$  – is the Credits assigned to the course

$GP_i$  – is the point corresponding to the grade obtained for each Course

$n$  – is number of all Courses successfully cleared during the particular semester in the case of GPA and during all the semesters in the case of CGPA

14.1.2 Whenever students, having arrear subjects, appear for the end semester examination during which there are no regular batch of students writing the same subjects, then, the letter grades for the arrears subjects shall be awarded based on the range of marks approved by the class committee immediately preceding end semester examination in which regular students wrote.

#### 14.2 REVALUATION

A candidate can apply for revaluation of his/her semester examination answer paper in a theory course, within 2 weeks from the declaration of results, on payment of a prescribed fee through proper application to the Controller of Examinations through the Head of the Institution. A candidate can apply for revaluation of answer scripts for not exceeding 5 subjects at a time. The Controller of Examination will arrange for the revaluation and the results will be intimated to the candidate concerned through the Head of the Institution. Revaluation is not permitted for practical courses, seminars, practical training and for project work.

### 15. ELIGIBILITY FOR THE AWARD OF THE DEGREE

15.1 A student shall be declared to be eligible for the award of the Degree if he/she has

- Successfully gained the required number of total credits as specified in the Curriculum corresponding to his/her Programme within the stipulated time.
- No disciplinary action is pending against him/her.
- Successfully completed the field visit / industrial training, if any, as prescribed in the curriculum.
- The award of the degree must be approved by the Syndicate.
- Successfully completed any additional courses prescribed by the Director, Academic Courses, whenever any candidate is readmitted under Regulations other than R – 2008 (clause 18.2).

### 16. CLASSIFICATION OF THE DEGREE AWARDED

16.1 A candidate who qualifies for the award of the Degree (vide clause 15) having passed the examination in all the courses in his/her first appearance within the specified minimum number of semesters securing a **CGPA of not less than 8.50** shall be declared to have passed the examination in **First Class with Distinction**. For this purpose the withdrawal from examination (vide clause 17.4) will not be construed as an appearance. Further, the authorized break of study (vide clause 18.3) will not be counted for the purpose of classification.

16.2 A candidate who qualifies for the award of the Degree (vide clause 15) having passed the examination in all the courses within the specified minimum number of semesters plus one year (two semesters), securing a **CGPA of not less than 6.50** shall be declared to have passed the examination in **First Class**. Further, the authorized break of study (vide clause 18.3) will not be counted for the purpose of classification.

16.3 All other candidates (not covered in clauses 16.1 and 16.2) who qualify for the award of the degree (vide Clause 15) shall be declared to have passed the examination in **Second Class**.

16.4 A candidate who is absent in semester examination in a course / project work after having enrolled for the same shall be considered to have appeared in that examination for the purpose of classification. (subject to clause 17 and 18)

#### 17. PROVISION FOR WITHDRAWAL FROM END-SEMESTER EXAMINATION

17.1 A candidate, may for valid reasons and on prior application, be granted permission to withdraw from appearing for the examination of any one course or consecutive examinations of more than one course in a semester examination.

17.2 Such withdrawal shall be permitted only once during the entire period of study of the degree programme.

17.3 Withdrawal application is valid only if it is made within 10 days prior to the commencement of the examination in that course or courses and recommended by the Head of the Institution and approved by the Controller of Examinations.

17.3.1 Notwithstanding the requirement of mandatory TEN days notice, applications for withdrawal for special cases under extraordinary conditions will be considered on the merit of the case.

17.4 Withdrawal shall not be construed as an appearance for the eligibility of a candidate for First Class with Distinction. This provision is not applicable to those who seek withdrawal during VII semester.

17.5 Withdrawal from the End semester examination is **NOT** applicable to arrears subjects of previous semesters

17.6 The candidate shall reappear for the withdrawn courses during the examination conducted in the subsequent semester.

#### 18. INDUSTRIAL VISIT

Every student is required to undergo one Industrial visit for every theory course offered, starting from the third semester of the Programme. Every teacher shall take the students at least for one industrial visit in a semester.

#### 19. PROVISION FOR AUTHORISED BREAK OF STUDY

19.1 **Break of Study shall be granted only once for valid reasons for a maximum of one year during the entire period of study of the degree programme.** However, in extraordinary situation the candidate may apply for additional break of study not exceeding another one year by paying prescribed fee for break of study. If a candidate intends to temporarily discontinue the programme in the middle of the semester for valid reasons, and to rejoin the programme in a subsequent year, permission may be granted based on the merits of the case provided he / she applies to the **Director, Student Affairs in advance**, but not later than the last date for registering for the end semester examination of the semester in question, through the Principal of the Institution stating the reasons therefore and the probable date of rejoining the programme.

19.2 The candidates permitted to rejoin the programme after break of study / prevention due to lack of attendance, shall be governed by the Curriculum and Regulations in force at the time of rejoining.

19.2(i) The students rejoined in any of the semesters are required to gain the stipulated number of credits in order to become eligible for the award of degree, under NEW Regulations.

19.2(ii) If any shortage of credits is observed cumulatively till the semester in which he / she is readmitted, then the Principal / student (through the Principal) shall apply to the Director, Academic Courses for prescribed additional courses, if any, at the beginning of the readmitted semester itself, so as to compensate for the shortage of the credits.

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- 19.3 The authorized break of study (for a maximum of one year) will not be counted for the duration specified for passing all the courses for the purpose of classification. (vide Clause 16.1 & 16.2). However, additional break of study granted will be counted for the purpose of classification.
- 19.4 The total period for completion of the Programme reckoned from, the commencement of the first semester to which the candidate was admitted shall not exceed the maximum period specified in clause 5.1 irrespective of the period of break of study (vide clause 18.3) in order that he/she may be eligible for the award of the degree.
- 19.5 If any student is detained for want of required attendance, the period spent in that semester shall not be considered as permitted 'Break of Study' (Clause 18.3) is not applicable for this case.

## 20. PERSONALITY AND CHARACTER DEVELOPMENT

All students shall enroll, on admission, in any one of the personality and character development programmes (the NCC / NSS / NSO / YRC) and undergo training for about 80 hours and attend a camp of about Seven days. The training shall include classes on hygiene and health awareness and also training in first-aid.

**National Cadet Corps (NCC)** will have about 20 parades.

**National Service Scheme (NSS)** will have social service activities in and around the College / Institution.

**National Sports Organization (NSO)** will have sports, Games, Drills and Physical exercises.

**Youth Red Cross (YRC)** will have activities related to social services in and around college / institutions.

While the training activities will normally be during week ends, the camp will normally be during vacation period.

Every student shall put in a minimum of 75% attendance in the training and attend the camp compulsorily. The training and camp shall be completed during the first year of the programme. However, for valid reasons, the Principal may permit a student to complete this requirement in the second year.

## 21. DISCIPLINE

Every student is required to observe disciplined and decorous behavior both inside and outside the college and not to indulge in any activity which will tend to bring down the prestige of the University / College. The Principal shall constitute a disciplinary committee consisting of Principal, Two Heads of Department of which one should be from the faculty of the student, to enquire into acts of indiscipline and notify the University about the disciplinary action recommended for approval. In case of any serious in disciplinary action which leads to suspension or Dismissal, then a committee shall be constituted including one representative from Anna University, Chennai. In this regard, the member will be nominated by Anna University on getting information from the Head of Institution.

If a student indulges in malpractice in any of the University / internal examination he / she shall be liable for punitive action as prescribed by the university from time to time.

## 22. REVISION OF REGULATION AND CURRICULUM

The University may from time to time revise, amend or change the Regulations, scheme of examinations and syllabi if found necessary.

  
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### ANNEXURE- I

ADDITIONAL COURSES TO BE STUDIED BY THE B.SC. GRADUATES ADMITTED TO III SEMESTER B.E. / B.TECH. UNDER LATERAL ENTRY SCHEME.

THE FOLLOWING TWO ADDITIONAL COURSES ARE PRESCRIBED FOR THE B.SC. GRADUATES

- a. The First course to be studied either in their III semester or V semester of study.

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	GE2111	Engineering Graphics	2	3	0	5

- b. The Second course to be studied during the IV or VI semester of their study.

The student can register for any ONE of the following courses as applicable to their Branch of study.

- i. For Non-Circuit Branches: (Any one of the Following)

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	ME2151	Engineering Mechanics *	3	1	0	4
2.	GE2151	Basic Electrical & Electronics Engineering*	4	0	0	4

- ii. For Circuit Branches:

- a. For Branches under Electrical Faculty (Any one of the Following)

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	EE2151	Circuit Theory * (For branches under Electrical Faculty)	3	1	0	4
2.	GE2152	Basic Civil & Mechanical Engineering *	4	0	0	4

- b. For Branches under I & C Faculty (Any one of the Following)

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	EC2151	Electric Circuits and Electron Devices * (For branches under I & C Faculty)	3	1	0	4
2.	GE2152	Basic Civil & Mechanical Engineering *	4	0	0	4



**Non-Circuit Branches are:**

Civil Engineering, Mechanical Engineering, Aeronautical Engineering, Automobile Engineering, Marine Engineering, Production Engineering, Chemical Engineering, Biotechnology, Polymer Technology, Textile Technology, Textile Technology (Fashion Technology), Petroleum Engineering, Plastics Technology.

**Circuit Branches are:**

- a. **Electrical Faculty:** Electrical and Electronics Engineering, Electronics and Instrumentation Engineering and Instrumentation and Control Engineering.
- b. **Information and Communication Engineering Faculty:** Computer Science and Engineering, Electronics and Communication Engineering, Information Technology and Biomedical Engineering.

  
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## ANNEXURE – II

### B.E. Degree Programmes :

B.E. Aeronautical Engineering  
B.E. Automobile Engineering  
B.E. Civil Engineering  
B.E. Computer Science and Engineering  
B.E. Electrical and Electronics Engineering  
B.E. Electronics and Communication Engineering  
B.E. Electronics and Instrumentation Engineering  
B.E. Instrumentation and Control Engineering  
B.E. Marine Engineering  
B.E. Mechanical Engineering  
B.E. Production Engineering  
B.E. Bio Medical Engineering

### B.Tech. Degree Programmes:

B.Tech. Chemical Engineering  
B.Tech. Biotechnology  
B.Tech. Information Technology  
B.Tech. Polymer Technology  
B.Tech. Textile Technology  
B.Tech. Textile Technology (Fashion Technology)  
B.Tech. Petroleum Engineering  
B.Tech. Plastics Technology

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**ANNA UNIVERSITY, CHENNAI**

**REGULATIONS 2013**

**(Common to all B.E. / B.Tech. Degree (8 Semesters) Full – Time Programmes of Affiliated Institutions)**

**CREDIT SYSTEM**

**AFFILIATED COLLEGES**

**DEGREE OF BACHELOR OF ENGINEERING / BACHELOR OF TECHNOLOGY**

This Regulations is applicable to the students admitted to B.E./B.Tech. Programmes at all Engineering Colleges affiliated to Anna University, Chennai (other than Autonomous Colleges) and to all the University Colleges of Engineering of Anna University, Chennai from the academic year 2013-2014.

**1. PRELIMINARY DEFINITIONS AND NOMENCLATURE**

In these Regulations, unless the context otherwise requires:

- I) **"Programme"** means Degree Programme, that is B.E./B.Tech. Degree Programme.
- II) **"Discipline"** means specialization or branch of B.E./B.Tech. Degree Programme, like Civil Engineering, Textile Technology, etc.
- III) **"Course"** means a theory or practical subject that is normally studied in a semester, like Mathematics, Physics, etc.
- IV) **"Director, Academic Courses"** means the authority of the University who is responsible for all academic activities of the Academic Programmes for implementation of relevant rules of this Regulations pertaining to the Academic Programmes.
- V) **"Chairman"** means the Head of the Faculty.
- VI) **"Head of the Institution"** means the Principal of the College.
- VII) **"Head of the Department"** means head of the Department concerned.
- VIII) **"Controller of Examinations"** means the authority of the University who is responsible for all activities of the University Examinations.
- IX) **"University"** means ANNA UNIVERSITY, CHENNAI.

**2. ADMISSION**


- 2.1 Candidates seeking admission to the first semester of the eight semester B.E. / B.Tech. Degree Programme:

Should have passed the Higher Secondary Examinations of (10+2) Curriculum (Academic Stream) prescribed by the Government of Tamil Nadu with Mathematics, Physics and Chemistry as three of the four subjects of study under Part-III or any examination of any other University or authority accepted by the Syndicate of Anna University as equivalent thereto.

(OR)

Should have passed the Higher Secondary Examination of Vocational stream (Vocational groups in Engineering / Technology) as prescribed by the Government of Tamil Nadu.

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## 2.2 Lateral entry admission

(i) The candidates who possess the Diploma in Engineering / Technology awarded by the State Board of Technical Education, Tamilnadu or its equivalent are eligible to apply for Lateral entry admission to the third semester of B.E. / B.Tech. in the branch corresponding to the branch of study.

(OR)

(ii) The candidates who possess the Degree in Science (B.Sc.) (10+2+3 stream) with Mathematics as a subject at the B.Sc. Level are eligible to apply for Lateral entry admission to the third semester of B.E. / B.Tech.

Such candidates shall undergo two additional Engineering subject(s) in the third and fourth semesters as prescribed by the University.

## 3. PROGRAMMES OFFERED

B.E. / B.Tech. Programmes under the Faculty of Civil Engineering, Faculty of Mechanical Engineering, Faculty of Electrical Engineering, Faculty of Information and Communication Engineering and Faculty of Technology.

## 4. STRUCTURE OF PROGRAMMES

4.1 Every Programme will have curricula with syllabi consisting of theory and practical courses such as:

(i) General core courses comprising Mathematics, Basic sciences, Engineering sciences, Humanities and Management.

(ii) Core courses of Engineering/Technology.

(iii) Elective courses for specialization in related fields.

(iv) Workshop Practice, Computer Practice, Engineering Graphics, Laboratory work, Industrial Training, Seminar presentation, Project work, Educational tours, Camps etc.

(v) NCC / NSS / NSO / YRC activities for character development


There shall be a certain minimum number of core courses and sufficient number of elective courses that can be opted by the students. The blend of different courses shall be so designed that the student, at the end of the programme, would have been trained not only in his / her relevant professional field but also would have developed as a socially conscious human being.

4.2 Each course is normally assigned a certain number of credits with 1 credit per lecture period per week, 1 credit per tutorial period per week, 1 credit for 2 periods of laboratory or practical or seminar or project work per week (2 credits for 3 or 4 periods of practical).

4.3 Each semester curriculum shall normally have a blend of lecture courses not exceeding 7 and practical courses not exceeding 4. However, the total number of courses per semester shall not exceed 10.

4.4 For the award of the degree, a student has to earn certain minimum total number of credits specified in the curriculum of the relevant branch of study.

4.5 The medium of instruction is English for all courses, examinations, seminar presentations and project / thesis / dissertation reports except for the programmes offered in Tamil Medium.

  
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K. S. R. INSTITUTE FOR  
ENGINEERING AND TECHNOLOGY,  
K. S. R. KALVI NAGAR,  
TIRUCHENGODE - 637 215,  
NAMBIALUR IN, TAMIL NADU.

## 5. DURATION OF THE PROGRAMME

- 5.1 A student is ordinarily expected to complete the B.E. / B.Tech. Programme in 8 semesters (four academic years) but in any case not more than 14 Semesters for HSC (or equivalent) candidates and not more than 12 semesters for Lateral Entry Candidates.
- 5.2 Each semester shall normally consist of 90 working days or 450 periods of 50 minutes each. The Head of the Institution shall ensure that every teacher imparts instruction as per the number of periods specified in the syllabus and that the teacher teaches the full content of the specified syllabus for the course being taught.
- 5.3 The Head of the Institution may conduct additional classes for improvement, special coaching, conduct of model test etc., over and above the specified periods. But for the purpose of calculation of attendance requirement for writing the end semester examinations (as per clause 6) by the students, following method shall be used.

$$\text{Percentage of Attendance} = \frac{\text{Total no. of periods attended in all the courses per semester}}{(\text{No. of periods / week as prescribed in the curriculum}) \times 15} \times 100$$

taken together for all courses of the semester

The University Examination will ordinarily follow immediately after the last working day of the semester as per the academic schedule prescribed from time to time.

- 5.4 The total period for completion of the programme reckoned from the commencement of the first semester to which the candidate was admitted shall not exceed the maximum period specified in clause 5.1 irrespective of the period of break of study (vide clause 18.4) in order that he/she may be eligible for the award of the degree (vide clause 15).

## 6. ATTENDANCE REQUIREMENTS FOR COMPLETION OF THE SEMESTER

- 6.1 A Candidate who has fulfilled the following conditions shall be deemed to have satisfied the requirements for completion of a semester.

Ideally every student is expected to attend all classes and secure 100% attendance. However, in order to give provision for certain unavoidable reasons such as Medical / participation in sports, the student is expected to attend atleast 75% of the classes.

Therefore, he/she shall **secure not less than 75%** (after rounding off to the nearest integer) of overall attendance as calculated as per clause 5.3.

- 6.2 However, a candidate who secures overall attendance between 65% and 74% in the current semester due to medical reasons (prolonged hospitalization / accident / specific illness) / Participation in Sports events may be permitted to appear for the current semester examinations subject to the condition that the candidate shall submit the medical certificate / sports participation certificate attested by the Head of the Institution. The same shall be forwarded to the Controller of Examinations for record purposes.
- 6.3 Candidates who **secure less than 65% overall attendance and candidates who do not satisfy the clause 6.1 and 6.2** shall not be permitted to write the University examination at the end of the semester and not permitted to move to the next semester. They are required to repeat the incomplete semester in the next academic year, as per the norms prescribed.

## 7. CLASS ADVISOR

There shall be a class advisor for each class. The class advisor will be one among the (course-instructors) of the class. He / She will be appointed by the HoD of the department concerned. The class advisor is the ex-officio member and the Convener of the class committee. The responsibilities for the class advisor shall be:

- To act as the channel of communication between the HoD and the students of the respective class.
- To collect and maintain various statistical details of students.
- To help the chairperson of the class committee in planning and conduct of the class committee meetings.
- To monitor the academic performance of the students including attendance and to inform the class committee.
- To attend to the students' welfare activities like awards, medals, scholarships and industrial visits.

## 8. CLASS COMMITTEE

8.1. Every class shall have a class committee consisting of teachers of the class concerned, student representatives and a chairperson who is not teaching the class. It is like the 'Quality Circle' (more commonly used in industries) with the overall goal of improving the teaching-learning process. The functions of the class committee include

- Solving problems experienced by students in the class room and in the laboratories.
- **Clarifying the regulations of the degree programme and the details of rules therein particularly (clause 5 and 6) which should be displayed on college Notice-Board.**
- Informing the student representatives, the academic schedule including the dates of assessments and the syllabus coverage for each assessment.
- Informing the student representatives the details of Regulations regarding weightage used for each assessment. In the case of practical courses (laboratory / drawing / project work / seminar etc.) the breakup of marks for each experiment / exercise / module of work, should be clearly discussed in the class committee meeting and informed to the students.
- Analyzing the performance of the students of the class after each test and finding the ways and means of solving problems, if any.
- Identifying the weak students, if any, and requesting the teachers concerned to provide some additional help or guidance or coaching to such weak students.

8.2 The class committee for a class under a particular branch is normally constituted by the Head of the Department. However, if the students of different branches are mixed in a class (like the first semester which is generally common to all branches), the class committee is to be constituted by the Head of the Institution.


8.3 The class committee shall be constituted within the first week of each semester.

8.4 At least 4 student representatives (usually 2 boys and 2 girls) shall be included in the class committee.

8.5 The Chairperson of the class committee may invite the Class adviser(s) and the Head of the Department to the class committee meeting.

8.6 The Head of the Institution may participate in any class committee of the institution.

8.7 The chairperson is required to prepare the minutes of every meeting, submit the same to Head of the Institution within two days of the meeting and arrange to circulate it among the students and teachers concerned. If there are some points in the minutes requiring action by the management, the same shall be brought to the notice of the Management by the Head of the Institution.

  
**PRINCIPAL,**  
**K. S. R. INSTITUTE FOR**  
**ENGINEERING AND TECHNOLOGY,**  
**K. S. R. KADAVANUR,**  
**TIRUCHENGOORE - 607 215,**  
**TAMIL NADU.**

- 8.8 The first meeting of the class committee shall be held within one week from the date of commencement of the semester, in order to inform the students about the nature and weightage of assessments within the framework of the Regulations. Two or three subsequent meetings may be held in a semester at suitable intervals. The Class Committee Chairman shall put on the Notice Board the cumulative attendance particulars of each student at the end of every such meeting to enable the students to know their attendance details to satisfy the clause 6 of this Regulation. During these meetings the student members representing the entire class, shall meaningfully interact and express the opinions and suggestions of the other students of the class in order to improve the effectiveness of the teaching-learning process.

## 9. COURSE COMMITTEE FOR COMMON COURSES

Each common theory course offered to more than one discipline or group, shall have a "Course Committee" comprising all the teachers teaching the common course with one of them nominated as Course Coordinator. The nomination of the Course Coordinator shall be made by the Head of the Department / Head of the Institution depending upon whether all the teachers teaching the common course belong to a single department or to several departments. The 'Course committee' shall meet in order to arrive at a common scheme of evaluation for the test and shall ensure a uniform evaluation of the tests. Wherever feasible, the course committee may also prepare a common question paper for the internal assessment test(s).

## 10. SYSTEM OF EXAMINATION

- 10.1 Performance in each course of study shall be evaluated based on (i) continuous internal assessment throughout the semester and (ii) University examination at the end of the semester.

- 10.2 Each course, both theory and practical (including project work & viva voce Examinations) shall be evaluated for a maximum of 100 marks.

For all theory and practical courses including project work, the continuous internal assessment will carry 20 marks while the End - Semester University examination will carry 80 marks.

- 10.3 Industrial training and seminar shall carry 100 marks and shall be evaluated through internal assessment only.

- 10.4 The University examination (theory and practical) of 3 hours duration shall ordinarily be conducted between October and December during the odd semesters and between April and June during the even semesters.

- 10.5 The University examination for project work shall consist of evaluation of the final report submitted by the student or students of the project group (of not exceeding 4 students) by an external examiner and an internal examiner, followed by a viva-voce examination conducted separately for each student by a committee consisting of the external examiner, the supervisor of the project group and an internal examiner.

- 10.6 For the University examination in both theory and practical courses including project work the internal and external examiners shall be appointed by the Controller of Examinations.

## 11. PROCEDURE FOR AWARDING MARKS FOR INTERNAL ASSESSMENT

For all theory and practical courses (including project work) the continuous assessment shall be for a maximum of 20 marks. The above continuous assessment shall be awarded as per the procedure given below:

### 11.1(a) Theory Courses

Three tests each carrying 100 marks shall be conducted during the semester by the Department / College concerned. The total marks obtained in all tests put together out of 300, shall be proportionately reduced for 20 marks and rounded to the nearest integer (This also implies equal weightage to all the three tests).

**(b) Practical Courses:**

The maximum marks for Internal Assessment shall be 20 in case of practical courses. Every practical exercise / experiment shall be evaluated based on conduct of experiment / exercise and records maintained. There shall be at least one test. The criteria for arriving at the Internal Assessment marks of 20 is as follows: 75 marks shall be awarded for successful completion of all the prescribed experiments done in the Laboratory and 25 marks for the test. The total mark shall be reduced to 20 and rounded to the nearest integer.

**(c) Theory Courses with Laboratory Component:**

If there is a theory course with Laboratory component, there shall be three tests: the first two tests (each 100 marks) will be from theory portions and the third test (maximum mark 100) will be for laboratory component. The sum of marks of first two tests shall be reduced to 60 marks and the third test mark shall be reduced to 40 marks. The sum of these 100 marks may then be arrived at for 20 and rounded to the nearest integer.

**11.2(a)** The seminar / Case study is to be considered as purely INTERNAL (with 100% internal marks only). Every student is expected to present a minimum of 2 seminars per semester before the evaluation committee and for each seminar, marks can be equally apportioned. The three member committee appointed by Head of the Institution will evaluate the seminar and at the end of the semester the marks can be consolidated and taken as the final mark. The evaluation shall be based on the seminar paper (40%), presentation (40%) and response to the questions asked during presentation (20%).

**(b)** The Industrial / Practical Training, Summer Project, Internship shall carry 100 marks and shall be evaluated through internal assessment only. At the end of Industrial / Practical training / internship / Summer Project, the candidate shall submit a certificate from the organization where he / she has undergone training and a brief report. The evaluation will be made based on this report and a Viva-Voce Examination, conducted internally by a three member Departmental Committee constituted by the Head of the Institution. The certificates (issued by the organization) submitted by the students shall be attached to the mark list sent by the Head of the Institution to the Controller of Examinations.

**11.3 Project Work:**

Project work may be allotted to a single student or to a group of students not exceeding 4 per group.

The Head of the Institutions shall constitute a review committee for project work for each branch of study. There shall be three reviews during the semester by the review committee. The student shall make presentation on the progress made by him / her before the committee. The total marks obtained in the three reviews shall be reduced for 20 marks and rounded to the nearest integer (as per the scheme given in 11.3.1).

**11.3.1** The project report shall carry a maximum 30 marks. The project report shall be submitted as per the approved guidelines as given by Director, Academic Courses. Same mark shall be awarded to every student within the project group for the project report. The viva-voce examination shall carry 50 marks. Marks are awarded to each student of the project group based on the individual performance in the viva-voce examination.

Review I	Review II	Review III	End semester Examinations				
			Thesis Submission (30)		Viva-Voce (50)		
			Internal	External	Internal	External	Supervisor
5	7.5	7.5	15	15	15	20	15



11.3.2 If a candidate fails to submit the project report on or before the specified deadline, he/she is deemed to have failed in the Project Work and shall re-enroll for the same in a subsequent semester.

11.4 Internal marks approved by the Head of the Institution shall be displayed by the respective HODs within 5 days from the last working day.

#### 11.5 Attendance Record

Every teacher is required to maintain an 'ATTENDANCE AND ASSESSMENT RECORD' which consists of attendance marked in each lecture or practical or project work class, the test marks and the record of class work (topic covered), separately for each course. This should be submitted to the Head of the department periodically (at least three times in a semester) for checking the syllabus coverage and the records of test marks and attendance. The Head of the department will put his signature and date after due verification. At the end of the semester, the record should be verified by the Head of the Institution who will keep this document in safe custody (for five years). The University or any inspection team appointed by the University may verify the records of attendance and assessment of both current and previous semesters.

### 12. REQUIREMENTS FOR APPEARING FOR UNIVERSITY EXAMINATIONS

A candidate shall normally be permitted to appear for the University Examinations of the current semester if he/she has satisfied the semester completion requirements (subject to Clause 6) and has registered for examination in all courses of the semester. Registration is mandatory for current semester examinations as well as arrear examinations, failing which the candidate will not be permitted to move to the higher semester.

A candidate who has already appeared for any subject in a semester and passed the examination is not entitled to reappear in the same subject for improvement of grades.

### 13. PASSING REQUIREMENTS


13.1 A candidate who secures not less than 50% of total marks prescribed for the course [Internal Assessment + End semester University Examinations] with a minimum of 45% of the marks prescribed for the end-semester University Examination, shall be declared to have passed the course and acquired the relevant number of credits. This is applicable for both theory and practical courses (including project work).

13.2 If a candidate fails to secure a pass in a particular course, it is mandatory that he/she shall register and reappear for the examination in that course during the subsequent semester when examination is conducted in that course; he/she should continue to register and reappear for the examinations in the failed subjects till he / she secures a pass.

13.3 The internal assessment marks obtained by the candidate in the first appearance shall be retained and considered valid for all subsequent attempts till the candidate secure a pass. However, from the third attempt onwards if a candidate fails to obtain pass marks (IA + End Semester Examination) as per clause 13.1, then the candidate shall be declared to have passed the examination if he/she secure a minimum of 50% marks prescribed for the university end semester examinations alone.

### 14. AWARD OF LETTER GRADES

14.1.1 All assessments of a course will be done on absolute marks basis. However, for the purpose of reporting the performance of a candidate, letter grades, each carrying certain number of points, will be awarded as per the range of total marks (out of 100) obtained by the candidate in each subject as detailed below:

  
K. S. JAYARAMAN  
ENGINEERING DEPARTMENT,  
K. S. JAYARAMAN,  
TIRUCHENGAI - 621 013,  
MANAGERIAL DE, TAMIL NADU.

Letter grade	Grade Points	Marks Range
S	10	91 – 100
A	9	81 – 90
B	8	71 – 80
C	7	61 – 70
D	6	57 – 60
E	5	50 – 56
U	0	< 50
W	0	(or ≥ 50 but not satisfying clause 13.1)

A student is deemed to have passed and acquired the corresponding credits in a particular course if he/she obtains any one of the following grades: "S", "A", "B", "C", "D", "E".

'SA' denotes shortage of attendance (as per clause 6.3) and hence prevention from writing the end semester examination. 'SA' will appear only in the result sheet.

"U" denotes **Reappearance** (RA) is required for the examination in the course. "W" denotes **withdrawal** from the exam for the particular course. (The grades U and W will figure both in Marks Sheet as well as in Result Sheet)

#### Grade sheet

After results are declared, Grade Sheets will be issued to each student which will contain the following details:

- The college in which the candidate has studied
- The list of courses enrolled during the semester and the grade scored.
- The Grade Point Average (GPA) for the semester and
- The Cumulative Grade Point Average (CGPA) of all courses enrolled from first semester onwards.

GPA for a semester is the ratio of the sum of the products of the number of credits for courses acquired and the corresponding points to the sum of the number of credits for the courses acquired in the semester.

CGPA will be calculated in a similar manner, considering all the courses registered from first semester. "U", and "W" grades will be excluded for calculating GPA and CGPA.

$$\text{GPA / CGPA} = \frac{\sum_{i=1}^n C_i GP_i}{\sum_{i=1}^n C_i}$$

where  $C_i$  is the number of Crédits assigned to the course

$GP_i$  is the point corresponding to the grade obtained for each course

$n$  is number of all courses successfully cleared during the particular semester in the case of GPA and during all the semesters in the case of CGPA

## 15. ELIGIBILITY FOR THE AWARD OF THE DEGREE

15.1 A student shall be declared to be eligible for the award of the Degree if he/she has

- Successfully gained the required number of total credits as specified in the Curriculum corresponding to his/her Programme within the stipulated time.

- No disciplinary action is pending against him/her.
- The award of the degree must be approved by the Syndicate.
- Successfully completed any additional courses prescribed by the Director, Academic Courses, whenever any candidate is readmitted under Regulations other than R – 2013 (clause 18.2).

## 16. CLASSIFICATION OF THE DEGREE AWARDED

### 16.1 FIRST CLASS WITH DISTINCTION

A candidate who satisfies the following conditions shall be declared to have passed the examination in First class with Distinction.

- Should have passed the End semester examination in all the courses of all the eight semesters (six semesters in the case of lateral entry) in his/her First Appearance within four years (three years in the case of lateral entry). Withdrawal from examination (vide Clause 17) will not be considered as an appearance. One year authorized break of study (if availed of) is permitted in addition to four years (three years in the case of lateral entry) for award of First class with Distinction.
- Should have secured a CGPA of not less than 8.50.

### 16.2 FIRST CLASS

A candidate who satisfies the following conditions shall be declared to have passed the examination in First class.

- Should have passed the End semester examination in all the courses of all the eight semesters (six semesters in the case of lateral entry) within five years (four years in the case of lateral entry). One year authorized break of study (if availed of) or prevention from writing the End Semester examination due to lack of attendance (if applicable) is included in the duration of five years (four years in the case of lateral entry) for award of First class.
- Should have secured a CGPA of not less than 6.50.

### 16.3 SECOND CLASS

All other candidates (not covered in clauses 16.1 and 16.2) who qualify for the award of the degree (vide Clause 15) shall be declared to have passed the examination in Second Class.

16.4 A candidate who is absent in semester examination in a course / project work after having registered for the same shall be considered to have appeared in that examination for the purpose of classification. (subject to clause 17 and 18)

### 16.5 Photocopy / Revaluation

A candidate can apply for photocopy of his/her semester examination answer paper in a theory course, within 2 weeks from the declaration of results, on payment of a prescribed fee through proper application to the Controller of Examinations through the Head of Institutions. The answer script is to be valued and justified by a faculty member, who handled the subject and recommend for revaluation with breakup of marks for each question. Based on the recommendation, the candidate can register for the revaluation through proper application to the Controller of Examinations. The Controller of Examinations will arrange for the revaluation and the results will be intimated to the candidate concerned through the Head of the Institutions. Revaluation is not permitted for practical courses and for project work.

A candidate can apply for revaluation of answer scripts for not exceeding 5 subjects at a time.

#### 16.6 Review

Candidates not satisfied with Revaluation can apply for Review of his/ her examination answer paper in a theory course, within the prescribed date on payment of a prescribed fee through proper application to Controller of Examination through the Head of the Institution.

Candidates applying for Revaluation only are eligible to apply for Review.

#### 17. PROVISION FOR WITHDRAWAL FROM END-SEMESTER EXAMINATION

17.1 A candidate, may for valid reasons and on prior application, be granted permission to withdraw from appearing for the examination of any one course or consecutive examinations of more than one course in a semester examination.

17.2 Such withdrawal shall be permitted **only once during the entire period** of study of the degree programme.

17.3 Withdrawal application is valid only if it is made within 10 days prior to the commencement of the examination in that course or courses and recommended by the Head of the Institution and approved by the Controller of Examinations.

17.3.1 Notwithstanding the requirement of mandatory TEN days notice, applications for withdrawal for special cases under extraordinary conditions will be considered on the merit of the case.

17.4 Withdrawal shall not be construed as an appearance for the eligibility of a candidate for First Class with Distinction.

17.5 Withdrawal from the End Semester Examination is **NOT** applicable to arrears subjects of previous semesters.

17.6 The candidate shall reappear for the withdrawn courses during the examination conducted in the subsequent semester.

17.7 Withdrawal shall not be permitted in the final semester examinations.

#### 18. PROVISION FOR AUTHORISED BREAK OF STUDY

18.1 Break of Study shall be granted only once for valid reasons for a maximum of one year during the entire period of study of the degree programme. However, in extraordinary situation the candidate may apply for additional break of study not exceeding another one year by paying prescribed fee for break of study. If a candidate intends to temporarily discontinue the programme in the middle of the semester for valid reasons, and to rejoin the programme in a subsequent year, permission may be granted based on the merits of the case provided he / she applies to the Director, Student Affairs in advance, but not later than the last date for registering for the end semester examination of the semester in question, through the Head of the Institution stating the reasons therefore and the probable date of rejoining the programme.

18.2 The candidates permitted to rejoin the programme after break of study / prevention due to lack of attendance, shall be governed by the Curriculum and Regulations in force at the time of rejoining. The students rejoining in new Regulations shall apply to the Director, Academic Courses in the prescribed format through Head of the Institution at the beginning of the readmitted semester itself for prescribing additional courses, if any, from any semester of the regulations in-force, so as to bridge the curriculum in-force and the old curriculum.

18.3 The authorized break of study will not be counted towards the duration specified for passing all the courses for the purpose of classification (vide Clause 16.1).

18.4 The total period for completion of the Programme reckoned from, the commencement of the first semester to which the candidate was admitted shall not exceed the maximum period specified in clause 5.1 irrespective of the period of break of study in order that he/she may be eligible for the award of the degree.

18.5 If any student is prevented for want of required attendance, the period of prevention shall not be considered as authorized 'Break of Study' (Clause 18.1)

**19. INDUSTRIAL VISIT**

Every student is required to undergo one Industrial visit for every theory course offered, starting from the third semester of the Programme. Every teacher shall take the students at least for one industrial visit in a semester.

**20. PERSONALITY AND CHARACTER DEVELOPMENT**

All students shall enroll, on admission, in any one of the personality and character development programmes (the NCC / NSS / NSO / YRC) and undergo training for about 80 hours and attend a camp of about seven days. The training shall include classes on hygiene and health awareness and also training in first-aid.

**National Cadet Corps (NCC)** will have about 20 parades.

**National Service Scheme (NSS)** will have social service activities in and around the College / Institution.

**National Sports Organization (NSO)** will have sports, Games, Drills and Physical exercises.

**Youth Red Cross (YRC)** will have activities related to social services in and around college / institutions.

While the training activities will normally be during weekends, the camp will normally be during vacation period.

Every student shall put in a minimum of 75% attendance in the training and attend the camp compulsorily. The training and camp shall be completed during the first year of the programme. However, for valid reasons, the Head of the Institution may permit a student to complete this requirement in the second year.

**21. DISCIPLINE**

21.1 Every student is required to observe disciplined and decorous behavior both inside and outside the college and not to indulge in any activity which will tend to bring down the prestige of the University / College. The Head of Institution shall constitute a disciplinary committee consisting of Head of Institution, Two Heads of Department of which one should be from the faculty of the student, to enquire into acts of indiscipline and notify the University about the disciplinary action recommended for approval. In case of any serious disciplinary action which leads to suspension or dismissal, then a committee shall be constituted including one representative from Anna University, Chennai. In this regard, the member will be nominated by the University on getting information from the Head of the Institution.

21.2 If a student indulges in malpractice in any of the University / internal examination he / she shall be liable for punitive action as prescribed by the University from time to time.

**22. REVISION OF REGULATIONS, CURRICULUM AND SYLLABI**

The University may from time to time revise, amend or change the Regulations, Curriculum, Syllabus and scheme of examinations through the Academic Council with the approval of Syndicate.

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PRINCIPAL,  
K. S. R. INSTITUTE FOR  
ENGINEERING AND TECHNOLOGY,  
K. S. R. KALVI NAGAR,  
TIRUCHENGOORE - 637 215,  
NAMAKKAL Dt, TAMIL NADU.

ANNA UNIVERSITY : : CHENNAI - 600 025

AFFILIATED INSTITUTIONS

REGULATIONS 2017

CHOICE BASED CREDIT SYSTEM

Common to all B.E. / B.Tech. Full-Time Programmes

(For the students admitted to B.E. / B.Tech. Programme at various Affiliated Institutions)

**DEGREE OF BACHELOR OF ENGINEERING / BACHELOR OF TECHNOLOGY**

This Regulations is applicable to the students admitted to B.E./B.Tech. Programmes at all Engineering Colleges affiliated to Anna University, Chennai (other than Autonomous Colleges) and to all the University Colleges of Engineering of Anna University, Chennai from the academic year 2017-2018 onwards.

**1. PRELIMINARY DEFINITIONS AND NOMENCLATURE**

In these Regulations, unless the context otherwise requires:

- I) "Programme" means Degree Programme, that is B.E./B.Tech. Degree Programme.
- II) "Discipline" means specialization or branch of B.E./B.Tech. Degree Programme, like Civil Engineering, Textile Technology, etc.
- III) "Course" means a theory or practical subject that is normally studied in a semester, like Mathematics, Physics, etc.
- IV) "Director, Academic Courses" means the authority of the University who is responsible for all academic activities of the Academic Programmes for implementation of relevant rules of this Regulations pertaining to the Academic Programmes.
- V) "Chairman" means the Head of the Faculty.
- VI) "Head of the Institution" means the Principal of the College.
- VII) "Head of the Department" means head of the Department concerned.
- VIII) "Controller of Examinations" means the authority of the University who is responsible for all activities of the University Examinations.
- IX) "University" means ANNA UNIVERSITY, CHENNAI.

  
PRINCIPAL,  
K. S. R. INSTITUTE FOR  
ENGINEERING AND TECHNOLOGY,  
K. S. R. KALVI ROAD,  
TIRUCHENGOORU - 627 215,  
NAMAKKAL Dt, TAMIL NADU.

## 2. ADMISSION

### 2.1 Candidates seeking admission to the first semester of the eight semester B.E. / B.Tech. Degree Programme:

Should have passed the Higher Secondary Examinations of (10+2) Curriculum (Academic Stream) prescribed by the Government of Tamil Nadu with Mathematics, Physics and Chemistry as three of the four subjects of study under Part-III or any examination of any other University or authority accepted by the Syndicate of Anna University as equivalent thereto.

(OR)

Should have passed the Higher Secondary Examination of Vocational stream (Vocational groups in Engineering / Technology) as prescribed by the Government of Tamil Nadu.

### 2.2 Lateral entry admission

- (i) The candidates who possess the Diploma in Engineering / Technology awarded by the State Board of Technical Education, Tamilnadu or its equivalent are eligible to apply for Lateral entry admission to the third semester of B.E. / B.Tech. in the branch corresponding to the branch of study.

(OR)

- (ii) The candidates who possess the Degree in Science (B.Sc.) (10+2+3 stream) with Mathematics as a subject at the B.Sc. Level are eligible to apply for Lateral entry admission to the third semester of B.E. / B.Tech.

Such candidates shall undergo two additional Engineering subject(s) in the **third and fourth semesters** as prescribed by the University.

## 3. PROGRAMMES OFFERED

B.E. / B.Tech. Programmes under the Faculty of Civil Engineering, Faculty of Mechanical Engineering, Faculty of Electrical Engineering, Faculty of Information and Communication Engineering and Faculty of Technology.

## 4. STRUCTURE OF PROGRAMMES

### 4.1 Categorization of Courses

Every B.E. / B. Tech. Programme will have a curriculum with syllabi consisting of theory and practical courses that shall be categorized as follows:

- i. **Humanities and Social Sciences (HS)** courses include Technical English, Engineering Ethics and Human Values, Communication skills, Environmental Science and Engineering.
- ii. **Basic Sciences (BS)** courses include Mathematics, Physics, Chemistry, Biology, etc.
- iii. **Engineering Sciences (ES)** courses include Engineering practices, Engineering Graphics, Basics of Electrical / Electronics / Mechanical / Computer Engineering, Instrumentation etc.
- iv. **Professional Core (PC)** courses include the core courses relevant to the chosen specialization/branch.
- v. **Professional Elective (PE)** courses include the elective courses relevant to the chosen specialization/ branch.

- vi. **Open Elective (OE)** courses include the courses from other branches which a student can choose from the list specified in the curriculum of the students B.E. / B. Tech. / B. Arch. Programmes.
- vii. **Employability Enhancement Courses (EEC)** include Project Work and/or Internship, Seminar, Professional Practices, Case Study and Industrial/Practical Training.

**4.2 Personality and Character Development**

All students shall enroll, on admission, in any one of the personality and character development programmes (NCC/NSS/NSO/YRC) and undergo training for about 80 hours and attend a camp of about seven days. The training shall include classes on hygiene and health awareness and also training in first-aid.

**National Cadet Corps (NCC)** will have about 20 parades.

**National Service Scheme (NSS)** will have social service activities in and around the College / Institution.

**National Sports Organization (NSO)** will have sports, Games, Drills and Physical exercises.

**Youth Red Cross (YRC)** will have activities related to social services in and around College/Institutions.

While the training activities will normally be during weekends, the camp will normally be during vacation period.

**4.3 Number of courses per semester**

Each semester curriculum shall normally have a blend of lecture courses not exceeding 7 and Laboratory courses and Employability Enhancement Course(s) not exceeding 4. Each Employability Enhancement Course may have credits assigned as per clause 4.4. However, the total number of courses per semester shall not exceed 10.

**4.4 Credit Assignment**

Each course is assigned certain number of credits based on the following:

Contact period per week	CREDITS
1 Lecture Period	1
2 Tutorial Periods	1
2 Laboratory Periods (also for EEC courses like / Seminar / Project Work / Case study / etc.)	1

The Contact Periods per week for Tutorials and Practical can only be in multiples of 2.

  
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 K. S. R. KALVIHAGAR,  
 TIRUCHENGODE - 637 315,  
 NAIYAKKAL DT, TAMIL NADU.



#### 4.5. Industrial Training / Internship

The students may undergo Industrial training for a period as specified in the Curriculum during summer / winter vacation. In this case the training has to be undergone continuously for the entire period.

The students may undergo Internship at Research organization / University (after due approval from the Department Consultative Committee) for the period prescribed in the curriculum during summer / winter vacation, in lieu of Industrial training.

#### 4.6. Industrial Visit

Every student is required to go for at least one Industrial Visit every year starting from the second year of the Programme. The Heads of Departments shall ensure that necessary arrangements are made in this regard.

#### 4.7. Value Added Courses

The Students may optionally undergo Value Added Courses and the credits earned through the Value Added Courses shall be over and above the total credit requirement prescribed in the curriculum for the award of the degree. One / Two credit courses shall be offered by a Department of an institution with the prior approval from the Head of the Institution. The details of the syllabus, time table and faculty may be sent to the Centre for Academic Courses and the Controller of Examinations after approval from the Head of the Institution concerned atleast one month before the course is offered. Students can take a maximum of two one credit courses / one two credit course during the entire duration of the Programme.

#### 4.8. Online Courses

4.8.1 Students may be permitted to credit only one online course of 3 credits with the approval of Head of the Institution and Centre for Academic Courses.

4.8.2 Students may be permitted to credit one online course (which are provided with certificate) subject to a maximum of three credits. The approved list of online courses will be provided by the Centre for Academic courses from time to time. The student needs to obtain certification or credit to become eligible for writing the End Semester Examination to be conducted by Controller of Examinations, Anna University. The details regarding online courses taken up by students should be sent to the Controller of Examinations, Anna University and Centre for Academic Courses one month before the commencement of End Semester Examination.

4.9 The students satisfying the following conditions shall be permitted to carry out their final semester Project work for six months in industry/research organizations.

The student should not have current arrears and shall have CGPA of 7.50 and above.

The student shall undergo the eighth semester courses in the sixth and seventh semesters. The Head of Department, in consultation with the faculty handling the said courses shall forward the proposal recommended by the Head of Institution to the Controller of Examinations through the Director, Centre for Academic courses for approval at least 4 weeks before the commencement of the sixth semester of the programme for approval.

#### 4.10 Medium of Instruction

The medium of instruction is English for all courses, examinations, seminar presentations and project / thesis / dissertation reports except for the programmes offered in Tamil Medium.

### 5. DURATION OF THE PROGRAMME

5.1 A student is ordinarily expected to complete the B.E. / B.Tech. Programme in 8 semesters (four academic years) but in any case not more than 14 Semesters for HSC (or equivalent) candidates and not more than 12 semesters for Lateral Entry Candidates.

5.1.1 A student is ordinarily expected to complete the B.E. Mechanical Engineering (Sandwich) Programme in 10 semesters (five academic years) but in any case not more than 18 Semesters for HSC (or equivalent) candidates.

5.2 Each semester shall normally consist of 75 working days or 540 periods of 50 minutes each. The Head of the Institution shall ensure that every teacher imparts instruction as per the number of periods specified in the syllabus and that the teacher teaches the full content of the specified syllabus for the course being taught.

5.3 The Head of the Institution may conduct additional classes for improvement, special coaching, conduct of model test etc., over and above the specified periods. But for the purpose of calculation of attendance requirement for writing the end semester examinations (as per clause 6) by the students, following method shall be used.

$$\text{Percentage of Attendance} = \frac{\text{Total no. of periods attended in all the courses per semester}}{(\text{No. of periods / week as prescribed in the curriculum}) \times 15 \text{ taken together for all courses of the semester}} \times 100$$

The University Examination will ordinarily follow immediately after the last working day of the semester commencing from I semester as per the academic schedule prescribed from time to time.

5.4 The total period for completion of the programme reckoned from the commencement of the first semester to which the candidate was admitted shall not exceed the maximum period specified in clause 5.1 irrespective of the period of break of study (vide clause 18) in order that he/she may be eligible for the award of the degree (vide clause 16).

### 6. COURSE REGISTRATION

6.1 The Institution is responsible for registering the courses that each student is proposing to undergo in the ensuing semester. Each student has to register for all courses to be undergone in the curriculum of a particular semester (with the facility to drop courses to a maximum of 6 credits (vide clause 6.2)). The student can also register for courses for which the student has failed in the earlier semesters.

The registration details of the candidates may be approved by the Head of the Institution and forwarded to the Controller of Examinations. This registration is for undergoing the course as well as for writing the End Semester Examinations. No Elective course shall be offered by any department of any institution unless a minimum 10 students register for the course. However, if the students admitted in the associated Branch and Semester is less than 10, this minimum will not be applicable.

**The courses that a student registers in a particular semester may include**

- i. Courses of the current semester.
- ii. The core (Theory/Lab /EEC) courses that the student has not cleared in the previous semesters.
- iii. Elective courses which the student failed (either the same elective or a different elective instead).

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K. S. R. INSTITUTE FOR  
ENGINEERING AND TECHNOLOGY,  
K. S. R. KALH NIGAR,  
TIRUCHENGODE - 637 215,  
NAMAKKAL DISTRICT, TAMIL NADU.

## 6.2 Flexibility to Drop courses

- 6.2.1 A student has to earn the total number of credits specified in the curriculum of the respective Programme of study in order to be eligible to obtain the degree.
- 6.2.2 From the III to final semesters, the student has the option of dropping existing courses in a semester during registration. Total number of credits of such courses cannot exceed 6.
- 6.2.3 The student shall register for the project work in the final semester only.

## 7. ATTENDANCE REQUIREMENTS FOR COMPLETION OF THE SEMESTER

- 7.1 A Candidate who has fulfilled the following conditions shall be deemed to have satisfied the requirements for completion of a semester.

Ideally every student is expected to attend all classes of all the courses and secure 100% attendance. However, in order to give provision for certain unavoidable reasons such as Medical / participation in sports, the student is expected to attend atleast 75% of the classes.

Therefore, he/she shall **secure not less than 75%** (after rounding off to the nearest integer) of overall attendance as calculated as per clause 5.3.

- 7.2 However, a candidate who secures overall attendance between 65% and 74% in the current semester due to medical reasons (prolonged hospitalization / accident / specific illness) / Participation in Sports events may be permitted to appear for the current semester examinations subject to the condition that the candidate shall submit the medical certificate / sports participation certificate attested by the Head of the Institution. The same shall be forwarded to the Controller of Examinations for record purposes.
- 7.3 Candidates who **secure less than 65% overall attendance and candidates who do not satisfy the clause 7.1 and 7.2** shall not be permitted to write the University examination at the end of the semester and not permitted to move to the next semester. They are required to repeat the incomplete semester in the next academic year, as per the norms prescribed.

## 8. CLASS ADVISOR

There shall be a class advisor for each class. The class advisor will be one among the (course-instructors) of the class. He / She will be appointed by the HoD of the department concerned. The class advisor is the ex-officio member and the Convener of the class committee. The responsibilities for the class advisor shall be:

- To act as the channel of communication between the HoD and the students of the respective class.
- To collect and maintain various statistical details of students.
- To help the chairperson of the class committee in planning and conduct of the class committee meetings.
- To monitor the academic performance of the students including attendance and to inform the class committee.
- To attend to the students' welfare activities like awards, medals, scholarships and industrial visits.

## 9. CLASS COMMITTEE

- 9.1. Every class shall have a class committee consisting of teachers of the class concerned, student representatives and a chairperson who is not teaching the class. It is like the 'Quality Circle' (more commonly used in industries) with the overall goal of improving the teaching-learning process. The functions of the class committee include


- Solving problems experienced by students in the class room and in the laboratories.

- **Clarifying the regulations of the degree programme and the details of rules therein particularly (clause 5 and 7) which should be displayed on college Notice-Board.**
  - Informing the student representatives, the academic schedule including the dates of assessments and the syllabus coverage for each assessment.
  - Informing the student representatives the details of Regulations regarding weightage used for each assessment. In the case of practical courses (laboratory / drawing / project work / seminar etc.) the breakup of marks for each experiment / exercise / module of work, should be clearly discussed in the class committee meeting and informed to the students.
  - Analyzing the performance of the students of the class after each test and finding the ways and means of solving problems, if any.
  - Identifying the weak students, if any, and requesting the teachers concerned to provide some additional help or guidance or coaching to such weak students.
- 9.2 The class committee for a class under a particular branch is normally constituted by the Head of the Department. However, if the students of different branches are mixed in a class (like the first semester which is generally common to all branches), the class committee is to be constituted by the Head of the Institution.
- 9.3 The class committee shall be constituted within the first week of each semester.
- 9.4 At least 4 student representatives (usually 2 boys and 2 girls) shall be included in the class committee.
- 9.5 The Chairperson of the class committee may invite the Class adviser(s) and the Head of the Department to the class committee meeting.
- 9.6 The Head of the Institution may participate in any class committee of the institution.
- 9.7 The chairperson is required to prepare the minutes of every meeting, submit the same to Head of the Institution within two days of the meeting and arrange to circulate it among the students and teachers concerned. If there are some points in the minutes requiring action by the management, the same shall be brought to the notice of the Management by the Head of the Institution.
- 9.8 The first meeting of the class committee shall be held within one week from the date of commencement of the semester, in order to inform the students about the nature and weightage of assessments within the framework of the Regulations. Two or three subsequent meetings may be held in a semester at suitable intervals. **The Class Committee Chairman shall put on the Notice Board the cumulative attendance particulars of each student at the end of every such meeting to enable the students to know their attendance details to satisfy the clause 6 of this Regulation.** During these meetings the student members representing the entire class, shall meaningfully interact and express the opinions and suggestions of the other students of the class in order to improve the effectiveness of the teaching-learning process.

#### 10. COURSE COMMITTEE FOR COMMON COURSES

Each common theory course offered to more than one discipline or group, shall have a "Course Committee" comprising all the teachers teaching the common course with one of them nominated as Course Coordinator. The nomination of the Course Coordinator shall be made by the Head of the Department / Head of the Institution depending upon whether all the teachers teaching the common course belong to a single department or to several departments. The 'Course committee' shall meet in order to arrive at a common scheme of evaluation for the test and shall ensure a uniform evaluation of the tests. Wherever feasible, the course committee may also prepare a common question paper for the internal assessment test(s).

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 K. S. R. INSTITUTE FOR  
 ENGINEERING AND TECHNOLOGY  
 K. S. R. KAVI KANAL  
 TIRUCHENGODE - 637 215,  
 NAMAKKAL Dt, TAMIL NADU.

## 11. SYSTEM OF EXAMINATION

11.1 Performance in each course of study shall be evaluated based on (i) continuous internal assessment throughout the semester and (ii) University examination at the end of the semester.

11.2 Each course, both theory and practical (including project work & viva voce Examinations) shall be evaluated for a maximum of 100 marks.

For all theory and practical courses including project work, the continuous internal assessment will carry **20 marks** while the End - Semester University examination will carry **80 marks**.

11.3 Industrial training and seminar shall carry 100 marks and shall be evaluated through internal assessment only.

11.4 The University examination (theory and practical) of 3 hours duration shall ordinarily be conducted between October and December during the odd semesters and between April and June during the even semesters.

11.5 The University examination for project work shall consist of evaluation of the final report submitted by the student or students of the project group (of not exceeding 4 students) by an external examiner and an internal examiner, followed by a viva-voce examination conducted separately for each student by a committee consisting of the external examiner, the supervisor of the project group and an internal examiner.

11.6 For the University examination in both theory and practical courses including project work the internal and external examiners shall be appointed by the Controller of Examinations.

## 12. PROCEDURE FOR AWARDING MARKS FOR INTERNAL ASSESSMENT

For all theory and practical courses (including project work) the continuous assessment shall be for a maximum of 20 marks. The above continuous assessment shall be awarded as per the procedure given below:

### 12.1 THEORY COURSES

Three tests each carrying 100 marks shall be conducted during the semester by the Department / College concerned. The total marks obtained in all tests put together out of 300, shall be proportionately reduced for 20 marks and rounded to the nearest integer (This also implies equal weightage to all the three tests).

### 12.2 LABORATORY COURSES

The maximum marks for Internal Assessment shall be 20 in case of practical courses. Every practical exercise / experiment shall be evaluated based on conduct of experiment / exercise and records maintained. There shall be at least one test. The criteria for arriving at the Internal Assessment marks of 20 is as follows: 75 marks shall be awarded for successful completion of all the prescribed experiments done in the Laboratory and 25 marks for the test. The total mark shall be reduced to 20 and rounded to the nearest integer.

### 12.3 THEORY COURSES WITH LABORATORY COMPONENT

If there is a theory course with Laboratory component, there shall be three tests: the first two tests (each 100 marks) will be from theory portions and the third test (maximum mark 100) will be for laboratory component. The sum of marks of first two tests shall be reduced to 60 marks and the third test mark shall be reduced to 40 marks. The sum of these 100 marks may then be arrived at for 20 and rounded to the nearest integer.

#### 12.4 PROJECT WORK

Project work may be allotted to a single student or to a group of students not exceeding 4 per group.

The Head of the Institutions shall constitute a review committee for project work for each branch of study. There shall be three reviews during the semester by the review committee. The student shall make presentation on the progress made by him / her before the committee. The total marks obtained in the three reviews shall be **reduced for 20 marks** and rounded to the nearest integer (as per the scheme given in 12.4.1).

- 12.4.1 The project report shall carry a maximum 30 marks. The project report shall be submitted as per the approved guidelines as given by Director, Academic Courses. Same mark shall be awarded to every student within the project group for the project report. The viva-voce examination shall carry 50 marks. Marks are awarded to each student of the project group based on the individual performance in the viva-voce examination.

Review I	Review II	Review III	End semester Examinations				
			Thesis Submission (30)		Viva-Voce (50)		
5	7.5	7.5	Internal	External	Internal	External	Supervisor
			15	15	15	20	15

- 12.4.2 If a candidate fails to submit the project report on or before the specified deadline, he/she is deemed to have failed in the Project Work and shall re-register for the same in a subsequent semester.

#### 12.5 OTHER EMPLOYABILITY ENHANCEMENT COURSES

- (a) The seminar / Case study is to be considered as purely INTERNAL (with 100% internal marks only). Every student is expected to present a minimum of 2 seminars per semester before the evaluation committee and for each seminar, marks can be equally apportioned. The three member committee appointed by Head of the Institution will evaluate the seminar and at the end of the semester the marks can be consolidated and taken as the final mark. The evaluation shall be based on the seminar paper (40%), presentation (40%) and response to the questions asked during presentation (20%).
- (b) The Industrial / Practical Training, Summer Project, Internship, shall carry 100 marks and shall be evaluated through internal assessment only. At the end of Industrial / Practical training / internship / Summer Project, the candidate shall submit a certificate from the organization where he / she has undergone training and a brief report. The evaluation will be made based on this report and a Viva-Voce Examination, conducted internally by a three member Departmental Committee constituted by the Head of the Institution. The certificates (issued by the organization) submitted by the students shall be attached to the mark list sent by the Head of the Institution to the Controller of Examinations.

#### 12.6 ASSESSMENT FOR VALUE ADDED COURSE

The one / two credit course shall carry 100 marks and shall be evaluated through **continuous assessments only**. Two Assessments shall be conducted during the semester by the Department concerned. The total marks obtained in the tests shall be reduced to 100 marks and rounded to the nearest integer. A committee consisting of the Head of the Department, staff handling the course and a senior Faculty member nominated by the Head of the Institution shall monitor the evaluation process. The list of students along with the marks and the grades earned may be forwarded to the Controller of Examinations for appropriate action at least one month before the commencement of End Semester Examinations.

## 12.7 ASSESSMENT FOR ONLINE COURSES

Students may be permitted to credit one online course (which are provided with certificate) subject to a maximum of three credits. The approved list of online courses will be provided by the Centre for Academic courses from time to time. **This online course of 3 credits can be considered instead of one elective course.** The student needs to obtain certification or credit to become eligible for writing the End Semester Examination to be conducted by Anna University. **The course shall be evaluated through the End Semester Examination only conducted by Controller of Examinations, Anna University.**

12.8. Internal marks approved by the Head of the Institution shall be displayed by the respective HODs within 5 days from the last working day.

## 12.9 Attendance Record

Every teacher is required to maintain an 'ATTENDANCE AND ASSESSMENT RECORD' which consists of attendance marked in each lecture or practical or project work class, the test marks and the record of class work (topic covered), separately for each course. This should be submitted to the Head of the department periodically (at least three times in a semester) for checking the syllabus coverage and the records of test marks and attendance. The Head of the department will put his signature and date after due verification. At the end of the semester, the record should be verified by the Head of the Institution who will keep this document in safe custody (for five years). The University or any inspection team appointed by the University may verify the records of attendance and assessment of both current and previous semesters.

## 13. REQUIREMENTS FOR APPEARING FOR UNIVERSITY EXAMINATIONS

A candidate shall normally be permitted to appear for the University Examinations for all the courses registered in the current semester (vide clause 6) if he/she has satisfied the semester completion requirements (subject to Clause 7).

A candidate who has already appeared for any subject in a semester and passed the examination is not entitled to reappear in the same subject for improvement of grades.

## 14. PASSING REQUIREMENTS

14.1 A candidate who secures not less than 50% of total marks prescribed for the course [Internal Assessment + End semester University Examinations] with a minimum of 45% of the marks prescribed for the end-semester University Examination, shall be declared to have passed the course and acquired the relevant number of credits. This is applicable for both theory and practical courses (including project work).

14.2 If a student fails to secure a pass in theory courses in the current semester examination, he/she is allowed to write arrear examinations for the next three consecutive semesters and their internal marks shall be carried over for the above mentioned period of three consecutive semesters. If a student fails to secure a pass in a course even after three consecutive arrear attempts, the student has to redo the course in the semester in which it is offered along with regular students.

That is, the students should have successfully completed the courses of  $(n - 4)^{\text{th}}$  semester to register for courses in  $n^{\text{th}}$  semester.

Based on the above, the following prerequisites shall be followed for completing the degree programme:

- i. To enter into Semester V, the student should have no arrear in Semester I. Failing which the student shall redo the Semester I course/courses along with the regular students.

- ii. To enter into Semester VI, the student should have no arrear in Semester II. Failing which the student shall redo the Semester II course/courses along with the regular students.
- iii. To enter into Semester VII, the student should have no arrear in Semester III. Failing which the student shall redo the Semester III course/courses along with the regular students.
- iv. To enter into Semester VIII, the student should have no arrear in Semester IV. Failing which the student shall redo the Semester IV course/courses along with the regular students.

In case, if he/she has not successfully completed all the courses of semester V at the end of semester VIII, he/she shall redo the Semester V courses along with regular students. For the subsequent semesters of VI, VII and VIII, the same procedure shall be followed, subject to the maximum permissible period for this programme.

**Note:**


- The students who are admitted in **2017-2018 and 2018 – 2019** are permitted to appear for arrears upto VI semesters and will be allowed to move to VII semester only on completion of all the courses in the I semester.

In addition the following prerequisites shall be followed for completing the degree programme.

- i. To enter into Semester VII, the student should have no arrear in Semester I. Failing which the student shall redo the Semester I course/courses along with the regular students.
- ii. To enter into Semester VIII, the student should have no arrear in Semester II. Failing which the student shall redo the Semester II course/courses along with the regular students.

In case, if he/she has not successfully completed all the courses of semester III at the end of semester VIII, he/she shall redo the Semester III courses along with regular students. For the subsequent semesters of IV, V, VI, VII and VIII, the same procedure shall be followed, subject to the maximum permissible period for this programme.

- 14.3 If a student fails to secure a pass in a laboratory course, **the student shall register** for the course again, when offered next.
- 14.4 If a student fails to secure a pass in project work, **the student shall register** for the course again, when offered next.
- 14.5 The passing requirement for the courses which are assessed only through purely internal assessments (EEC courses except project work), is 50% of the internal assessment (continuous assessment) marks only.
- 14.6 A student can apply for revaluation of the student's semester examination answer paper in a theory course, within 2 weeks from the declaration of results, on payment of a prescribed fee along with prescribed application to the COE through the Head of the Institution. The COE will arrange for the revaluation and the results will be intimated to the student concerned through the Head of the Institution. Revaluation is not permitted for laboratory course and project work.

  
 PRINCIPAL,  
 K. S. R. INSTITUTE FOR  
 ENGINEERING AND TECHNOLOGY,  
 K. S. R. KALVI NAGAR,  
 TIRUCHENGODE - 637 215,  
 NAMAKKAL DL, TAMIL NADU.



## 15. AWARD OF LETTER GRADES

- 15.1 All assessments of a course will be evaluated on absolute marks basis. However, for the purpose of reporting the performance of a candidate, letter grades, each carrying certain number of points, will be awarded as per the range of total marks (out of 100) obtained by the candidate in each subject as detailed below:

Letter Grade	Grade Points	Marks Range
O (Outstanding)	10	91 - 100
A + (Excellent)	9	81 - 90
A (Very Good)	8	71 - 80
B + (Good)	7	61 - 70
B (Average)	6	50 - 60
RA	0	<50
SA (Shortage of Attendance)	0	
W	0	

A student is deemed to have passed and acquired the corresponding credits in a particular course if he/she obtains any one of the following grades: "O", "A+", "A", "B+", "B".

'SA' denotes shortage of attendance (as per clause 7.3) and hence prevention from writing the end semester examinations. 'SA' will appear only in the result sheet.

"RA" denotes that the student has failed to pass in that course. "W" denotes **withdrawal** from the exam for the particular course. The grades RA and W will figure both in Marks Sheet as well as in Result Sheet). In both cases the student has to earn Continuous Assessment marks and appear for the End Semester Examinations.

If the grade W is given to course, the attendance requirement need not be satisfied.

If the grade RA is given to a core **theory course**, the attendance requirement need not be satisfied, but if the grade RA is given to a **Laboratory Course/ Project work / Seminar and any other EEC course**, the attendance requirements (vide clause 7) should be satisfied.

- 15.2 For the Co-curricular activities such as National Cadet Corps (NCC)/ National Service Scheme (NSS) / NSO / YRC, a satisfactory / not satisfactory grading will appear in the mark sheet. Every student shall put in a minimum of 75% attendance in the training and attend the camp compulsorily. The training and camp shall be completed during the first year of the programme. However, for valid reasons, the Head of the Institution may permit a student to complete this requirement in the second year. **A satisfactory grade in the above co-curricular activities is compulsory for the award of degree.**
- 15.3 The grades O, A+, A, B+, B obtained for the one credit course shall figure in the Mark sheet under the title '**Value Added Courses**'. The Courses for which the grades are RA, SA **will not figure in the mark sheet.**

  
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K. S. R. INSTITUTE FOR  
ENGINEERING AND TECHNOLOGY,  
K. S. R. KALVI NAGAR,  
TIRUCHENGOORE - 637 718,  
NAMAKKAL DT, TAMIL NADU.

## Grade sheet

After results are declared, Grade Sheets will be issued to each student which will contain the following details:

- The college in which the candidate has studied
- The list of courses enrolled during the semester and the grade scored.
- The Grade Point Average (GPA) for the semester and
- The Cumulative Grade Point Average (CGPA) of all courses enrolled from first semester onwards.

GPA for a semester is the ratio of the sum of the products of the number of credits for courses acquired and the corresponding points to the sum of the number of credits for the courses acquired in the semester.

CGPA will be calculated in a similar manner, considering all the courses registered from first semester. RA grades will be excluded for calculating GPA and CGPA.

$$\text{GPA / CGPA} = \frac{\sum_{i=1}^n C_i GP_i}{\sum_{i=1}^n C_i}$$

where  $C_i$  is the number of Credits assigned to the course

$GP_i$  is the point corresponding to the grade obtained for each course

$n$  is number of all courses successfully cleared during the particular semester in the case of GPA and during all the semesters in the case of CGPA.

## 16 ELIGIBILITY FOR THE AWARD OF THE DEGREE

16.1 A student shall be declared to be eligible for the award of the B.E. / B.Tech. Degree provided the student has

- Successfully gained the required number of total credits as specified in the curriculum corresponding to the student's programme within the stipulated time.
- Successfully completed the course requirements, appeared for the End-Semester examinations and passed all the subjects prescribed in all the 8 semesters / (10 Semesters for B.E. Mechanical Engineering (Sandwich)) within a maximum period of 7 years (9 years in case of B.E. Mechanical Engineering (Sandwich) and 6 years in the case of Lateral Entry) reckoned from the commencement of the first (third in the case of Lateral Entry) semester to which the candidate was admitted.
- Successfully passed any additional courses prescribed by the Director, Academic Courses whenever readmitted under regulations R-2017 (vide clause 18.3)
- Successfully completed the NCC / NSS / NSO / YRC requirements.
- No disciplinary action pending against the student.
- The award of Degree must have been approved by the Syndicate of the University.

## 16.2 CLASSIFICATION OF THE DEGREE AWARDED

### 16.2.1 FIRST CLASS WITH DISTINCTION

A student who satisfies the following conditions shall be declared to have passed the examination in First class with Distinction:

- Should have passed the examination in all the courses of all the eight semesters (10 Semesters in case of Mechanical (Sandwich) and 6 semesters in the case of Lateral Entry) in the student's First Appearance within five years (Six years in the case of Mechanical (Sandwich) and Four years in the case of Lateral Entry). Withdrawal from examination (vide Clause 17) will not be considered as an appearance.
- Should have secured a CGPA of not less than 8.50.
- One year authorized break of study (if availed of) is included in the five years (Six years in the case of Mechanical (Sandwich) and four years in the case of lateral entry) for award of First class with Distinction.
- Should NOT have been prevented from writing end semester examination due to lack of attendance in any semester.

#### 16.2.2 FIRST CLASS:

A student who satisfies the following conditions shall be declared to have passed the examination in **First class**:

- Should have passed the examination in all the courses of all eight semesters (10 Semesters in case of Mechanical (Sandwich) and 6 semesters in the case of Lateral Entry) **within Six years**. (Seven years in case of Mechanical (Sandwich) and Five years in the case of Lateral Entry)
- One year authorized break of study (if availed of) or prevention from writing the End Semester examination due to lack of attendance (if applicable) is included in the duration of six years (Seven years in case of Mechanical (Sandwich) and five years in the case of lateral entry) for award of First class
- Should have secured a CGPA of not less than 7.00.

#### 16.2.3 SECOND CLASS:

All other students (not covered in clauses 16.2.1 and 16.2.2) who qualify for the award of the degree (vide Clause 16.1) shall be declared to have passed the examination in **Second Class**.

**16.3** A candidate who is absent in end semester examination in a course / project work after having registered for the same shall be considered to have appeared in that examination for the purpose of classification. (subject to clause 17 and 18)

#### 16.4 Photocopy / Revaluation

A candidate can apply for photocopy of his/her semester examination answer paper in a theory course, within 2 weeks from the declaration of results, on payment of a prescribed fee through proper application to the Controller of Examinations through the Head of Institutions. The answer script is to be valued and justified by a faculty member, who handled the subject and recommend for revaluation with breakup of marks for each question. Based on the recommendation, the candidate can register for the revaluation through proper application to the Controller of Examinations. The Controller of Examinations will arrange for the revaluation and the results will be intimated to the candidate concerned through the Head of the Institutions. Revaluation is not permitted for practical courses and for project work.

A candidate can apply for revaluation of answer scripts for not exceeding 5 subjects at a time.

#### 16.5 Review

Candidates not satisfied with Revaluation can apply for Review of his/ her examination answer paper in a theory course, within the prescribed date on payment of a prescribed fee through proper application to Controller of Examination through the Head of the Institution.

Candidates applying for Revaluation only are eligible to apply for Review

## 17. PROVISION FOR WITHDRAWAL FROM END-SEMESTER EXAMINATION

- 17.1 A student may, for valid reasons, (medically unfit / unexpected family situations / sports approved by Chairman, sports board and HOD) be granted permission to withdraw from appearing for the end semester examination in any course or courses in **ANY ONE** of the semester examinations during the entire duration of the degree programme. The application shall be sent to Director, Student Affairs through the Head of the Institutions with required documents.
- 17.2 Withdrawal application is valid if the student is otherwise eligible to write the examination (Clause 7) and if it is made within TEN days prior to the commencement of the examination in that course or courses and recommended by the Head of the Institution and approved by the Controller of Examinations.
- 17.2.1 Notwithstanding the requirement of mandatory 10 days notice, applications for withdrawal for special cases under extraordinary conditions will be considered on the merit of the case.
- 17.3 In case of withdrawal from a course / courses (Clause 13) the course will figure both in Marks Sheet as well as in Result Sheet. **Withdrawal essentially requires the student to register for the course/courses** The student has to register for the course, fulfill the attendance requirements (vide clause 7), earn continuous assessment marks and attend the end semester examination. However, withdrawal shall not be construed as an appearance for the eligibility of a candidate for First Class with Distinction.
- 17.4 Withdrawal is permitted for the end semester examinations in the final semester only if the period of study the student concerned does not exceed 5 years as per clause 16.2.1.

## 18. PROVISION FOR AUTHORISED BREAK OF STUDY

- 18.1 A student is permitted to go on break of study for a maximum period of one year as a single spell.
- 18.2 Break of Study shall be granted only once for valid reasons for a maximum of one year during the entire period of study of the degree programme. However, in extraordinary situation the candidate may apply for additional break of study not exceeding another one year by paying prescribed fee for break of study. If a candidate intends to temporarily discontinue the programme in the middle of the semester for valid reasons, and to rejoin the programme in a subsequent year, permission may be granted based on the merits of the case provided he / she applies to the Director, Student Affairs in advance, but not later than the last date for registering for the end semester examination of the semester in question, through the Head of the Institution stating the reasons therefore and the probable date of rejoining the programme.
- 18.3 The candidates permitted to rejoin the programme after break of study / prevention due to lack of attendance, shall be governed by the Curriculum and Regulations in force at the time of rejoining. The students rejoining in new Regulations shall apply to the Director, Academic Courses in the prescribed format through Head of the Institution at the beginning of the readmitted semester itself for prescribing additional courses, if any, from any semester of the regulations in-force, so as to bridge the curriculum in-force and the old curriculum.
- 18.4 The authorized break of study would not be counted towards the duration specified for passing all the courses for the purpose of classification (vide Clause 16.2).
- 18.5 The total period for completion of the Programme reckoned from, the commencement of the first semester to which the candidate was admitted shall not exceed the maximum period specified in clause 5.1 irrespective of the period of break of study in order that he/she may be eligible for the award of the degree.
- 18.6 If any student is prevented for want of required attendance, the period of prevention shall not be considered as authorized 'Break of Study' (Clause 18.1)


**19. DISCIPLINE**

19.1 Every student is required to observe disciplined and decorous behavior both inside and outside the college and not to indulge in any activity which will tend to bring down the prestige of the University / College. The Head of Institution shall constitute a disciplinary committee consisting of Head of Institution, Two Heads of Department of which one should be from the faculty of the student, to enquire into acts of indiscipline and notify the University about the disciplinary action recommended for approval. In case of any serious disciplinary action which leads to suspension or dismissal, then a committee shall be constituted including one representative from Anna University, Chennai. In this regard, the member will be nominated by the University on getting information from the Head of the Institution.

19.2 If a student indulges in malpractice in any of the University / internal examination he / she shall be liable for punitive action as prescribed by the University from time to time.

**20. REVISION OF REGULATIONS, CURRICULUM AND SYLLABI**

The University may from time to time revise, amend or change the Regulations, Curriculum, Syllabus and scheme of examinations through the Academic Council with the approval of Syndicate.

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PRINCIPAL,  
K. S. N. INSTITUTE FOR  
ENGINEERING AND TECHNOLOGY,  
K. S. R. KAJYI LAGAR,  
TIRUCHENGODE - 637 213,  
NAMAIKAL DI, TAMIL NADU.

**ANNA UNIVERSITY, CHENNAI**

**AFFILIATED COLLEGES**

**REGULATIONS 2009**

**CREDIT SYSTEM**

**POST-GRADUATE PROGRAMMES**

The following Regulations are applicable to all Engineering Colleges affiliated to Anna University, Chennai (other than Autonomous Colleges) and to all the University Colleges of Engineering of Anna University, Chennai.

**1 PRELIMINARY DEFINITIONS AND NOMENCLATURE**

In these Regulations, unless the context otherwise requires:

- i. **"Programme"** means Post graduate Degree Programme e.g. M.E., M.Tech. Degree Programme.
- ii. **"Branch"** means specialization or discipline of M.E. / M.Tech. Degree Programme like "Structural Engineering", "Engineering Design", etc.
- iii. **"Course"** means Theory or Practical subject that is normally studied in a semester, like Applied Mathematics, Advanced Thermodynamics, etc.
- iv. **"Head of the Department"** means Head of the Department concerned.
- v. **"Head of the Institution"** means the Principal of a College / Institution who is responsible for all academic activities of that College / Institution and for implementation of relevant Rules and Regulations.
- vi. **"Director, Academic Courses"** means the authority of the University who is responsible for all academic activities of the University for implementation of relevant Rules and Regulations.
- vii. **"Controller of Examinations"** means the Authority of the University who is responsible for all activities of the University Examinations.
- viii. **"University"** means ANNA UNIVERSITY, CHENNAI.

  
PRINCIPAL,  
K. S. R. INSTITUTE FOR  
ENGINEERING AND TECHNOLOGY,  
K. S. R. KALYANAGAR,  
TIRUCHENGODE - 637 015,  
NAMAKKAL DISTRICT, TAMIL NADU.

## **2 PROGRAMMES OFFERED, MODES OF STUDY AND ADMISSION REQUIREMENTS**

### **2.1 P.G. PROGRAMMES OFFERED:**

1. M.E
2. M.Tech.
3. M.B.A.
4. M.C.A.

### **2.2 MODES OF STUDY:**

#### **2.2.1 Full-Time:**

Candidates admitted under 'Full-Time' should be available in the College / Institution during the entire duration of working hours (From Morning to Evening on Full-Time basis) for the curricular, co-curricular and extra-curricular activities assigned to them.

The Full-Time candidates should not attend any other Full-Time programme(s) / course(s) or take up any Full-Time job / Part-Time job in any Institution or Company during the period of the Full-Time programme. Violation of the above rules will result in cancellation of admission to the PG programme.

#### **2.2.2 Part-Time – Day Time Mode:**

This mode of study is applicable to those candidates admitted under sponsored category (Teacher candidates). In this mode of study, the candidates are required to attend classes along with Full-Time students for the required number of courses and complete the course in three years.

2.2.3 Conversion from one mode of study to the other is not permitted.

### **2.3 ADMISSION REQUIREMENTS:**

2.3.1 Candidates for admission to the first semester of the Post-Graduate Degree Programme shall be required to have passed an appropriate Under-Graduate Degree Examination of Anna University as specified under qualification for admission as per the Tamil Nadu Common Admission (TANCA) criteria.

**Note:** TANCA releases the updated criteria during the admissions every academic year.

Admission shall be offered only to the candidates who possess the qualification prescribed against each course.

Any other relevant qualification which is not prescribed in column 3 against each programme shall be considered for equivalence by the committee constituted for the purpose. Admission to such degrees shall be offered only after obtaining equivalence to such degrees.

- 2.3.2 However, the Syndicate of the University may decide to restrict admission in any particular year to candidates having a subset of qualifications prescribed at the time of admission.
- 2.3.3 Notwithstanding the qualifying examination the candidate might have passed, he/she shall have a minimum level of proficiency in the appropriate programme / courses as prescribed by the Syndicate of the University from time to time.
- 2.3.4 Eligibility conditions for admission such as the class obtained, the number of attempts in qualifying examination and physical fitness will be as prescribed by the Syndicate of the University from time to time.
- 2.3.5 All Part-Time (Day-Time mode) candidates should satisfy other conditions regarding Experience, Sponsorship etc. that may be prescribed by the Syndicate from time to time.

### 3 DURATION OF THE PROGRAMMES:

- 3.1 The minimum and maximum period for completion of the P.G. Programmes are given below:

Programme	Min. No. of Semesters	Max. No. of Semesters
M.E. / M.Tech. (Full-Time)	4	8
M.E. / M.Tech. (Part Time)	6	12
M.C.A. (Full Time)	6	12
M.B.A. (Full Time)	4	8
M.B.A. (Part Time)	6	12

- 3.2 The Curriculum and Syllabi of all the P.G. Programmes shall be approved by the Academic Council of Anna University. The number of Credits to be earned for the successful completion of the programme shall be as specified in the Curriculum of the respective specialization of the P.G. Programme
- 3.3 Each semester shall normally consist of 90 working days or 350 periods of each 50 minutes duration, for full-time mode of study (400 Periods for M.B.A.) or 200 periods for part-time mode of study. The Head of the Institution shall ensure that every teacher imparts instruction as per the number of periods specified in the syllabus and that the teacher teaches the full content of the specified syllabus for the course being taught. End



of the Semester, University Examinations (End Semester Examination) will be scheduled after the last working day of the semester.

3.4 Credits will be assigned to the courses for different modes of study as given below:

3.4.1 The following will apply to all modes of P.G. Programmes.

- One credit for each lecture period allotted per week
- One credit for each tutorial period allotted per week
- One credit for each seminar/practical session of two periods designed per week.

3.4.2 Four weeks of practical training in any industrial / research laboratory correspond to one credit, and is applicable to all modes of study.

3.5 The minimum prescribed credits required for the award of the degree shall be within the limits specified below:

PROGRAMME	PRESCRIBED CREDIT RANGE
M.E. / M.Tech.	65 to 75

Programme	Prescribed Credits
M.C.A.	118
M.B.A.	90

#### 4 STRUCTURE OF THE PROGRAMME

4.1 Every Programme will have a curriculum and syllabi consisting of core courses, elective courses and project work.

The Programme may also include seminar / practicals / practical training, if they are specified in the curriculum.

4.1.1 The electives from the curriculum are to be chosen with the approval of the Head of the Department.

A candidate may be permitted by the Head of the Department to choose a maximum of two electives from P.G. Programmes offered in any other Department of the Institutions during the period of his/her study, provided the Head of the Department offering such course also approves such requests subject to no clash in the time-table for the lecture classes of both departments.

4.1.2 Practical training or Industrial Training, if specified in the Curriculum, should be organized by the Head of the Department / Institution for a duration not exceeding 4 weeks.

4.1.3 The medium of instruction shall be English for all courses, examinations, seminar presentations and project thesis/dissertation reports.

#### 4.2 Maximum Marks

4.2.1 The maximum marks assigned to different courses shall be as given below:

Each of the theory and practical courses (including project work) shall carry a maximum of 100 marks of which 20 marks will be through internal assessment and the University Examination (ESE) will carry 80 marks.

4.2.2 The Industrial Training or Seminar shall carry 100 marks and shall be evaluated through internal assessment.

#### 4.3 PROJECT WORK

The project work for M.E. / M.Tech. Programmes consists of Phase-I and Phase-II. The Phase-I is to be undertaken during III semester and Phase-II, which is a continuation of Phase-I is to be undertaken during IV semester.

4.3.1 In case of candidates of M.E. / M.Tech. Programmes not completing Phase-I of project work successfully, the candidates can undertake Phase-I again in the subsequent semester. In such cases the candidates can enroll for Phase-II, only after successful completion of Phase-I.

4.3.2 Project work shall be carried out under the supervision of a "qualified teacher" in the Department concerned. In this context "qualified teacher" means the faculty member possessing a Ph.D. degree or PG degree with a minimum of 3 years experience in teaching PG courses.

4.3.3 A candidate may, however, in certain cases, be permitted to work on projects in an Industrial/Research Organization, on the recommendations of the Head of the Department Concerned. In such cases, the Project work shall be jointly supervised by a supervisor of the department and an expert, as a joint supervisor from the organization and the student shall be instructed to meet the supervisor periodically and to attend the review committee meetings for evaluating the progress.

4.3.4 The Project work (Phase II in the case of M.E./M.Tech.) shall be pursued for a minimum of 16 weeks during the final semester.

4.3.5 The deadline for submission of final Project Report is 60 calendar days from the last working day of the semester in which project / thesis / dissertation is done. However, the Phase-I of the Project work in the case M.E. / M.Tech. Programmes shall be submitted within a maximum period of 30 calendar days from the last working day of the semester as per the academic calendar published by the University.

## 5 EVALUATION OF PROJECT WORK

The evaluation of Project Work for Phase-I & Phase-II in the case of M.E. / M.Tech. and project work of M.B.A and M.C.A shall be done independently in the respective semesters and marks shall be allotted as per the weightages given in Clause 12.2.

There shall be two assessments (each 100 marks) during the Semester by a review committee. The Student shall make presentation on the progress made before the Committee. The Head of the Department shall Constitute the review committee for each branch of study. The total marks obtained in the two assessment shall be reduced to 15 marks and rounded to the nearest integer. There will be a vice-voce Examination during End Semester Examinations conducted by a Committee consisting of the Supervisor, one Internal Examiner and one External Examiner.

- 5.1 The project work shall be evaluated for a maximum of 100 marks of which 20 marks will be through internal assessment.

There should be a minimum of two reviews for each phase (Phase I and Phase II) to be conducted separately with Internals 20 marks and External 80 marks for each phase which can be distributed as detailed below.

Project work	Internal (20 Marks) 15+5 (Attendance)		External (80 Marks)			
	Review - I	Review - II	Thesis Submission (30 Marks)	Viva – Voce (50 Marks)		
			External	Internal	External	Supervisor
Phase – I	7.5	7.5	30	16.66	16.66	16.66
Phase - II	7.5	7.5	30	16.66	16.66	16.66

- 5.2 The Project Report prepared according to approved guidelines and duly signed by the supervisor(s) and the Head of the Department concerned, shall be submitted to the Head of the Institution.

- 5.3 The evaluation of the Project Work Phase - I & Phase - II (M.E. / M.Tech.) will be based on the project report submitted in each of the Phase – I & Phase - II semesters and a Viva-Voce Examination by a team consisting of the supervisor, an internal examiner (other than the supervisor) and an External Examiner for each programme. The internal examiner and the external examiner shall be appointed by the University for the evaluation.

- 5.3.1 If the candidate fails to obtain 50% of the internal assessment marks in the Phase-I and Phase-II / final project, he/she will not be permitted to submit

the report for that particular semester and has to re-enroll for the same in the subsequent semester.

If a candidate fails to submit the project report on or before the specified deadline, he/she is deemed to have failed in the Project Work and shall re-enroll for the same in a subsequent semester. This applies to both Phase-I and Phase-II in the case of M.E. / M.Tech. Project Work and the Final Project work of M.B.A. / M.C.A.

If a candidate fails in the viva-voce examinations of Phase-I, he/she has to resubmit the Project Report within 30 days from the date of declaration of the results. If he / she fails in the viva-voce examination of Phase-II of Project work of M.E. / M.Tech. or the Final Project work of M.B.A. / M.C.A, he/she shall resubmit the Project Report within 60 days from the date of declaration of the results. For this purpose the same Internal and External examiners shall evaluate the resubmitted report.

- 5.3.2 A copy of the approved Project Report after the successful completion of viva-voce examinations shall be kept in the library of the college / institution.
- 5.3.3 A student who has passed all the courses prescribed in the curriculum for the award of the degree shall not be permitted to re-enroll to improve his/her marks in a course or the aggregate marks / CGPA.
- 5.3.4 Practical Training / Summer Project if specified in the Curriculum shall not exceed the maximum duration of 4 weeks and should be organized by the Head of the Department for every student.
- 5.3.5 At the end of Practical Training / Summer Project the candidate shall submit a certificate from the organization where he/she has undergone training and also a brief report. The evaluation will be made based on this report and a Viva-Voce Examination, conducted internally by a Departmental Committee constituted by the Head of the Institution. Certificates submitted by the students shall be attached to the mark list sent by the Head of the Institution.

## 6 CLASS ADVISER

To help the students in planning their courses of study and for general advice on the academic programme, the Head of the Department of the student will attach a certain number of students to a teacher of the Department who shall function as Faculty Adviser for those students throughout their period of study. Such Faculty Adviser shall advise the students and monitor the courses taken by the students, check the attendance and progress of the students attached to him/her and counsel them periodically. If necessary, the faculty adviser may also discuss with or inform the parents about the progress of the students.

## 7 CLASS COMMITTEE

7.1 A Class Committee consists of teachers of the concerned class, student representatives and a chairperson who is not teaching the class. It is like the 'Quality Circle' (more commonly used in industries) with the overall goal of improving the teaching-learning process. The functions of the class committee include:

- Solving problems experienced by students in the class room and in the laboratories.
- Clarifying the regulations of the programme and the details of rules therein.
- Informing the student representatives, the "academic schedule" including the dates of assessments and the syllabus coverage for each assessment period.
- Informing the student representatives, the details of regulations regarding the weightage used for each assessment. In the case of practical courses (laboratory / project work / seminar etc.) the breakup of marks for each experiment/ exercise/ module of work, should be clearly discussed in the class committee meeting and informed to the students.
- Analyzing the performance of the students of the class after each test and finding the ways and means of improving the Students Performance
- Identifying the weak students, if any, in any specific subject and requesting the teachers concerned to provide some additional help or guidance or coaching to such weak students as frequently as possible.

7.2 The class committee for a class under a particular programme is normally constituted by the Head of the Department. However, if the students of different programmes are mixed in a class, the class committee is to be constituted by the Head of the Institution.

7.3 The class committee shall be constituted on the first working day of any semester or earlier.

7.4 At least 2 student representatives (usually 1 boy and 1 girl) shall be included in the class committee.

7.5 The chairperson of the class committee may invite the Class adviser(s) and the Head of the Department to the meeting of the class committee.

7.6 The Head of the Institution may participate in any class committee of the institution.

7.7 The Chairperson of the Class Committee is required to prepare the minutes of every meeting, submit the same to the Head of the Institution within two days of the meeting and arrange to circulate among the concerned students and teachers. If there are some points in the minutes requiring action by the management, the same shall be brought to the notice of the management by the Head of the Institution.

7.8 The first meeting of the class committee shall be held within one week from the date of commencement of the semester in order to inform the students about the nature and weightage of assessments within the framework of the Regulations. Two or three subsequent meetings may be held at suitable intervals. During these meetings the student members, representing the entire class, shall meaningfully interact and express the opinions and suggestions of the class students to improve the effectiveness of the teaching-learning process.

## 8 COURSE COMMITTEE FOR COMMON COURSES

Each common course offered to more than one group of students shall have a "Course Committee" comprising all the teachers teaching the common course with one of them nominated as Course Coordinator. The nomination of the course Coordinator shall be made by the Head of the Department / Head of the Institution depending upon whether all the teachers teaching the common course belong to a single department or to several departments. The 'Course committee' shall meet as often as possible and ensure uniform evaluation of the tests and arrive at a common scheme of evaluation for the tests. Wherever it is feasible, the course committee may also prepare a common question paper for the Assessment Test(s).

## 9 PROCEDURES FOR AWARDING MARKS FOR INTERNAL ASSESSMENT

9.1 Every teacher is required to maintain an 'ATTENDANCE AND ASSESSMENT RECORD' which consists of attendance marked in each lecture or practical or project work class, the test marks and the record of class work (topics covered), separately for each course. This should be submitted to the Head of the Department periodically (at least three times in a semester) for checking the syllabus coverage and the records of test marks and attendance. The Head of the department will put his signature and date after due verification. At the end of the semester, the record should be verified by the Head of the institution who will keep this document in safe custody (for five years). The university or any inspection team appointed by the University may inspect the records of attendance and assessments of both current and previous semesters.

## 9.2 Internal Assessment for Theory Courses:

For all theory and practical courses the continuous assessment shall be for a maximum of 20 marks (consisting of 15 marks for tests/experiments and 5 marks for attendance). The above continuous assessment shall be awarded as per the procedure given below:

### (a) Theory Courses:

Three tests each carrying 100 marks shall be conducted during the semester by the Department / College concerned. The total marks obtained in all tests put together out of 300, shall be proportionately reduced for 15 marks and rounded to the nearest integer (This also implies equal weightage to all the three tests).

### (b) Practical Courses:

Every practical exercise / experiment shall be evaluated based on the exercise / experiment prescribed as per the syllabi and the records of work done maintained. There shall be at least one test during the semester. The criteria for arriving at the internal assessment marks (15 marks) shall be decided based on the recommendation of the class committee and shall be announced at the beginning of every semester by the Principal.

## 9.3 Seminar:

The seminar is to be considered as purely INTERNAL (with 100% internal marks only). Every student is expected to present a minimum of 4 seminars per semester and for each seminar marks can be equally apportioned. At the end of the semester the marks can be consolidated and taken as the final mark and hence, there is no need for End Semester Examination for SEMINAR.

## 10 ATTENDANCE REQUIREMENTS FOR COMPLETION OF A SEMESTER

10.1 A candidate who has fulfilled the following conditions shall be deemed to have satisfied the attendance requirements for completion of a semester.

Ideally every student is expected to attend all classes and earn 100% attendance. However in order to allow provision for certain unavoidable reasons such as prolonged hospitalization / accident / specific illness the student is expected to earn a minimum of 75% attendance to become eligible to write the End-Semester Examinations.

Therefore, every student shall secure not less than 75% of overall attendance in that semester taking into account the total number of periods in all courses attended by the candidate as against the total number of periods in all courses offered during that semester.

**10.2** However, a candidate who secures overall attendance between 65% and 74% in that current semester due to medical reasons (prolonged hospitalization / accident / specific illness / participation in sports events) may be permitted to appear for the current semester examinations subject to the condition that the candidate shall submit the medical certificate / sports participation certificate to the Head of the Institution. The same shall be forwarded to the COE, Anna University Chennai for record purposes.

**10.3** Candidates who could secure less than 65% overall attendance and **Candidates who do not satisfy the clauses 10.1 & 10.2** will not be permitted to write the end-semester examination of that current semester and are not permitted to go to next semester. They are required to repeat the incomplete semester in the next academic year.

## **11 REQUIREMENTS FOR APPEARING FOR SEMESTER EXAMINATION**

**11.1** A candidate shall normally be permitted to appear for the University examinations of the current semester if he/she has satisfied the semester completion requirements as per clause 10.1 & 10.2 and has registered for examination in all courses of the current semester.

**11.2** Further, registration is mandatory for all the courses in the current semester as well as for arrear(s) course(s) for the university examinations failing which, the candidate will not be permitted to move to the higher semester.

## **12 UNIVERSITY EXAMINATIONS**

**12.1** There shall be an End- Semester Examination of 3 hours duration in each lecture based course.

The examinations shall ordinarily be conducted between October and December during the odd semesters and between March and May in the even semesters.

For the practical examinations (including project work), both internal and external examiners shall be appointed by the University. The maximum marks for each theory and practical course shall be 100 comprising 20 marks for internal assessment.

## **12.2 WEIGHTAGES**

The following will be the weightages for different courses.

i) Lecture or Lecture cum Tutorial based course:

Internal Assessment	-	20%
End Semester Examination	-	80%

ii) Laboratory based courses



Internal Assessment	-	20%
End Semester Examination	-	80%
iii) Project work		
Internal Assessment	-	20%
Evaluation of Project Report by external examiner	-	30%
Viva-Voce Examination	-	50%

**12.3** If a student indulges in malpractice in any of the university / internal examinations, he / she shall be liable for punitive action as prescribed by the University from time to time.

### **13 PASSING REQUIREMENTS**

**13.1** A candidate who secures not less than 50% of total marks prescribed for the courses with a minimum of 50% of the marks prescribed for each of the course of the End-Semester University Examination in both theory and practical courses, shall be declared to have passed in the Examination.

**13.2** If the candidate fails to secure a pass in a particular course as per clause 13.1, it is mandatory that the candidate shall register and re-appear for the examination in that course during the subsequent semester when examination is conducted for that course. Further, the candidate should continue to enrol and reappear for the examination till a **pass** is secured in such arrear course.

The internal assessment marks obtained by the candidate in the first appearance shall be retained and considered valid for all subsequent attempts till the candidate secure a pass.

**13.2.1** The internal assessment marks obtained by the candidate in the first appearance shall be retained and considered valid for all subsequent attempts till the candidate secure a pass. However, from the 3<sup>rd</sup> attempt onwards if a candidate fails to obtain pass marks (IA + End Semester Examination) as per clause 13.1 then the passing requirement shall be as follows: The candidate should secure 50% and above the maximum marks prescribed for course in the university examinations alone irrespective of Internal Assessment marks obtained.

### **14 ELIGIBILITY FOR THE AWARD OF THE DEGREE**

**14.1** A student shall be declared eligible for the award of the degree if he/she has:

- i. Successfully passed all the courses as specified in the curriculum corresponding to his/her programme within the stipulated period. (as per clause 3.1)

- ii. No disciplinary action is pending against him/her.
- iii. The award of the degree must have been approved by the syndicate.

## 15 AWARD OF LETTER GRADES

15.1 All assessments of a course will be done on absolute marks basis. However, for the purpose of reporting the performance of a candidate, letter grades, each carrying certain points specified, will be awarded as per the range of total marks (out of 100) obtained by the candidate (Regular or Arrear), as detailed below:

Letter grade	Grade Points	Marks Range
S	10	91 – 100
A	9	81 – 90
B	8	71 – 80
C	7	61 – 70
D	6	57 – 60
E	5	50 – 56
U	0	< 50
I	0	
W	0	

A student is deemed to have passed and acquired the corresponding credits in a particular course if he / she **obtained** any one of the following grades: "S", "A", "B", "C", "D", "E".

"U" denotes unsatisfactory grade which requires Reappearance (RA) in the examination for that particular course.

The Letter "W" denotes **withdrawal** from the course. (Clause 18)

The Letter "I" denotes inadequate attendance (as per clause 10.3) and hence prevention from writing the End Semester Examinations.

(Grade "I" and "W" will figure only in the **Result Sheets**).

### 15.2 Grade Sheet

After results are declared, Grade Sheets will be issued to each student which will contain the following details:

- The college in which the candidate has studied.
- The list of courses enrolled during the semester and the grades scored.
- The Grade Point Average (GPA) for the semester and

- The Cumulative Grade Point Average (CGPA) of all courses enrolled from first semester onwards.

GPA for a semester is the ratio of the sum of the products of the number of credits for courses acquired and the corresponding points to the sum of the number of credits for the courses acquired in the semester.

$$\text{GPA} = \frac{\text{Sum of [Credits Acquired x Grade Points]}}{\text{Sum of Credits Acquired}}$$

CGPA will be calculated in a similar manner, considering all the courses registered from first semester. "U", "I" and "W" grades will be excluded for calculating GPA and CGPA.

$$\text{CGPA} = \frac{\sum_{i=1}^n C_i GP_i}{\sum_{i=1}^n C_i}$$

- where  $C_i$  – is the Credits assigned to the course  
 $GP_i$  – is the Grade point corresponding to the grade obtained for each Course  
 $n$  – is number of all Courses successfully cleared during the particular semester in the case of GPA and during all the semesters in the case of CGPA

## 16 CLASSIFICATION OF THE DEGREE AWARDED

- 16.1 A candidate who qualifies for the award of the Degree (Vide Clause 14) having passed the examination in all the courses in his / her first appearance within the specified minimum number of semesters securing a **CGPA of not less than 8.50** shall be declared to have passed the examination in **First Class with Distinction**. For this purpose the

withdrawal from examination (vide clause 18) will not be construed as an appearance. Further, the authorized break of study (vide clause 19) will not be counted for the purpose of classification.

**16.2** A candidate who qualifies for the award of the Degree (vide clause 14) having passed the examination in all the courses within the specified minimum number of semesters plus one year (two semesters), securing a **CGPA of not less than 6.50** shall be declared to have passed the examination in **First Class**. For this purpose the authorized break of study (vide clause 19) the Withdrawal from the Examination, as well, will not be counted for the purpose of classification.

**16.3** All other candidates (not covered in clauses 16.1 and 16.2) who qualify for the award of the degree (vide clause 14) shall be declared to have passed the examination in **Second Class**.

A candidate who is absent in End Semester Examination in a course / project work after having enrolled for the same shall be considered to have appeared in that examination for the purpose of classification.

## **17 REVALUATION**

A candidate can apply for revaluation of his/her semester examination answer paper in a theory course, within 2 weeks from the declaration of results, on payment of a prescribed fee through proper application to the Controller of Examinations through the Head of Institutions. The Controller of Examinations will arrange for the revaluation and the results will be intimated to the candidate concerned through the Head of the Institutions. Revaluation is not permitted for practical courses and for project work.

## **18 PROVISION FOR WITHDRAWAL FROM EXAMINATION:**

A candidate may, for valid reasons, be granted permission to withdraw from appearing for any course(s) of only one semester examination during the entire duration of the degree programme. Also only one application for withdrawal is permitted for that semester examination in which withdrawal is sought.

Withdrawal application shall be valid only if the candidate is otherwise eligible ( as per clause 10.1 or 10.2) to write the examination and if it is made **prior to the examination** in that course(s) and also recommended by the Head of Department and Head of the Institution. A Xerox copy of the hall ticket must be enclosed along with the withdrawal application and submitted to the COE, Anna University, Chennai.

Withdrawal shall not be construed as appearance for the eligibility of a candidate for the purpose of classification, vide clause 16.1.

## 19 AUTHORIZED BREAK OF STUDY FROM A PROGRAMME

- 19.1 Break of Study shall be granted only once for valid reasons for a maximum of one year during the entire period of study of the degree programme.** However, in extraordinary situation the candidate may apply for additional break of study not exceeding another one year by paying prescribed fee for break of study. If a candidate intends to temporarily discontinue the programme in the middle of the semester for valid reasons, and to re-join the programme in a subsequent year, permission may be granted based on the merits of the case provided he / she applies to the **Director, Student Affairs in advance**, but not later than the last date for registering for the End Semester Examinations of the semester in question, through the Principal of the Institution stating the reasons therefor and the probable date of re-joining the programme. However, if the candidate has not completed the first semester of the programme, Break of Study will be considered only on valid medical reasons.
- 19.2** The candidate permitted to re-join the Programme after the break shall be governed by the Curriculum and Regulations, in force, at the time of re-joining. **If the Regulations is changed**, then, those candidates may have to do additional courses as prescribed by the **Director, Academic courses**.
- 19.3** The authorized break of study will not be counted for the duration specified for passing all the courses for the purpose of classification. ( vide Clause 16.1 and 16.2).
- 19.4** The total period for completion of the Programme reckoned from, the commencement of the first semester to which the candidate was admitted shall not exceed the maximum period specified in clause 3 irrespective of the period of break of study in order that he/she may be eligible for the award of the degree (vide clause 16).
- 19.5** If any student is detained for want of requisite attendance, progress and good conduct, the period spent in that semester shall not be considered as permitted 'Break of Study' and Clause 19.3 is not applicable for this case.

## 20 DISCIPLINE

Every student is expected to observe discipline and decorum both inside and outside the college and not to indulge in any activity which will tend to bring down the prestige of the University / College. In the event of an act of indiscipline being reported, the Principal shall constitute a disciplinary committee consisting of Principal, two Heads of Departments of which one should be from the faculty of the student, to inquire into acts of indiscipline

and notify the University about the disciplinary action taken. The disciplinary action is subject to review by the University in case the student represents to the University. Any expulsion of the student from the college shall be done with prior concurrence of the University.

## 21 REVISION OF REGULATIONS, CURRICULUM AND SYLLABUS

The University may from time to time revise, amend or change the Regulations, scheme of examinations and syllabi if found necessary through the Academic Council and the approval of the Syndicate.

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PRINCIPAL,  
K. S. R. INSTITUTE FOR  
ENGINEERING AND TECHNOLOGY,  
K. S. R. NANNI NAGAR,  
TIRUCHENGODE - 637 215,  
NAMAKKAL Dt, TAMIL NADU.

ANNA UNIVERSITY, CHENNAI

REGULATIONS 2013

CREDIT SYSTEM

AFFILIATED COLLEGES

POST-GRADUATE PROGRAMMES

The following Regulations is applicable to the students admitted to M.E / M.Tech., M.C.A and M.B.A. Programmes at all Engineering Colleges affiliated to Anna University, Chennai (other than Autonomous Colleges) and to all the University Colleges of Engineering of Anna University, Chennai from the academic year 2013-2014.

**1 PRELIMINARY DEFINITIONS AND NOMENCLATURE**

In these Regulations, unless the context otherwise requires:

- i. **"Programme"** means Post graduate Degree Programme e.g. M.E., M.Tech. Degree Programme.
- ii. **"Branch"** means specialization or discipline of M.E. / M.Tech. Degree Programme like "Structural Engineering", "Engineering Design", etc.
- iii. **"Course"** means Theory or Practical subject that is normally studied in a semester, like Applied Mathematics, Advanced Thermodynamics, etc.
- iv. **"Director, Academic Courses"** means the authority of the University who is responsible for all academic activities of the University for implementation of relevant Rules and Regulations.
- v. **"Chairman"** means the Head of the Faculty.
- vi. **"Head of the Department"** means Head of the Department concerned.
- vii. **"Head of the Institution"** means the Principal of a College / Institution who is responsible for all academic activities of that College / Institution and for implementation of relevant Rules and Regulations.
- viii. **"Controller of Examinations"** means the Authority of the University who is responsible for all activities of the University Examinations.
- ix. **"University"** means ANNA UNIVERSITY, CHENNAI.

## **2 PROGRAMMES OFFERED, MODES OF STUDY AND ADMISSION REQUIREMENTS**

### **2.1 P.G. PROGRAMMES OFFERED:**

1. M.E
2. M.Tech.
3. M.B.A.
4. M.C.A.

### **2.2 MODES OF STUDY:**

#### **2.2.1 Full-Time:**

Candidates admitted under 'Full-Time' should be available in the College / Institution during the entire duration of working hours (From Morning to Evening on Full-Time basis) for the curricular, co-curricular and extra-curricular activities assigned to them.

The Full-Time candidates should not attend any other Full-Time programme(s) / course(s) or take up any Full-Time job / Part-Time job in any Institution or Company during the period of the Full-Time programme. Violation of the above rules will result in cancellation of admission to the PG programme.

#### **2.2.2 Part-Time – Day Time Mode:**

This mode of study is applicable to those candidates admitted under sponsored category (Teacher candidates only). In this mode of study, the candidates are required to attend classes along with Full-Time students for the required number of courses and complete the programme in three years.

**2.2.3** Conversion from one mode of study to the other is not permitted.

### **2.3 ADMISSION REQUIREMENTS:**

**2.3.1** Candidates for admission to the first semester of the Post-Graduate Degree Programme shall be required to have passed an appropriate Under-Graduate Degree Examination of Anna University or equivalent as specified under qualification for admission as per the Tamil Nadu Common Admission (TANCA) criteria.

**Note:** TANCA releases the updated criteria during the admissions every academic year. Admission shall be offered only to the candidates who possess the qualification prescribed against each programme.

Any other relevant qualification which is not prescribed against each programme shall be considered for equivalence by the committee constituted for the purpose. Admission to such degrees shall be offered only after obtaining equivalence to such degrees.

**2.3.2** However, the Syndicate of the University may decide to restrict admission in any particular year to candidates having a subset of qualifications prescribed at the time of admission.



- 2.3.3 Notwithstanding the qualifying examination the candidate might have passed, he/she shall have a minimum level of proficiency in the appropriate programme / courses as prescribed by the Syndicate of the University from time to time.
- 2.3.4 Eligibility conditions for admission such as the class obtained, the number of attempts in qualifying examination and physical fitness will be as prescribed by the Syndicate of the University from time to time.
- 2.3.5 All Part-Time (Day-Time mode) candidates should satisfy other conditions regarding Experience, Sponsorship etc. that may be prescribed by the Syndicate from time to time.

### 3 DURATION AND STRUCTURE OF THE PROGRAMMES:

- 3.1 The minimum and maximum period for completion of the P.G. Programmes are given below:

Programme	Min. No. of Semesters	Max. No. of Semesters
M.E. / M.Tech. (Full-Time)	4	8
M.E. / M.Tech. (Part Time)	6	12
M.C.A. (Full Time)	6	12
M.B.A. (Full Time)	4	8
M.B.A. (Part Time)	6	12

- 3.2 Every Programme will have a curriculum and syllabus consisting of core courses, elective courses and project work. The Programme may also include seminar, practical, practical / Industrial training, Summer project if they are specified in the curriculum.
- 3.3 The Curriculum and Syllabi of all the P.G. Programmes shall be approved by the Academic Council of Anna University. The number of Credits to be earned for the successful completion of the programme shall be as specified in the Curriculum of the respective specialization of the P.G. Programme
- 3.4 Each semester shall normally consist of 90 working days or 350 periods of each 50 minutes duration, for full-time mode of study (400 Periods for M.B.A.) or 200 periods for part-time mode of study. The Head of the Institution shall ensure that every teacher imparts instruction as per the number of periods specified in the syllabus and that the teacher teaches the full content of the specified syllabus for the course being taught. For the purpose of calculation of attendance requirement for writing the end semester examinations (as per clause 9) by students, following method shall be used.

$$\text{Percentage of Attendance} = \frac{\text{Total no. of periods attended in all the courses per semester}}{(\text{No. of periods / week as prescribed in the curriculum}) \times 15 \text{ taken together for all courses of the semester}} \times 100$$

End Semester Examinations conducted by the University will be scheduled after the last working day of the semester.

- 3.5 The minimum prescribed credits required for the award of the degree shall be within the limits specified below:

PROGRAMME	PRESCRIBED CREDIT RANGE
M.E. / M.Tech.	65 to 75

Programme	Prescribed Credits
M.C.A.	119
M.B.A.	96

- 3.6 Credits will be assigned to the courses for different modes of study as given below:

- 3.6.1 The following will apply to all modes of P.G. Programmes.

- One credit for each lecture period allotted per week
- One credit for each tutorial period allotted per week
- One credit for each seminar/practical session/project work of two periods designed per week (2 credits for 3 or 4 periods of practical).

- 3.6.2 Two weeks of practical training in any industrial / research laboratory correspond to one credit, and is applicable to all modes of study.

- 3.6.3 Practical training or Industrial Training if specified in the Curriculum should be organized by the Head of the Department / Institution for a duration not exceeding 4 weeks.

- 3.6.4 Summer project if specified in the Curriculum, should be organized by the Head of the Department / Institution for a duration not exceeding 6 weeks.

- 3.7 The electives from the curriculum are to be chosen with the approval of the Head of the Department. A candidate may be permitted by the Head of the Department to choose a maximum of two electives from other P.G. Programmes offered in the Department /any other Department of the Institutions during the period of his/her study, provided the Head of the Department offering such course also approves such requests subject to no clash in the time-table for the lecture classes of both departments.

- 3.8 The medium of instruction shall be English for all courses, examinations, seminar presentations and project thesis/dissertation reports.

#### 4. PROJECT WORK

- 4.1 The project work for M.E. / M.Tech. Programmes consist of Phase-I and Phase-II. The Phase-I is to be undertaken during III semester and Phase-II, which is a continuation of Phase-I is to be undertaken during IV semester.

- 4.2 In case of candidates of M.E. / M.Tech. Programmes not completing Phase-I of project work successfully, the candidates can undertake Phase-I again in the subsequent semester. In such cases the candidates can enroll for Phase-II, only after successful completion of Phase-I.

- 4.3 Project work shall be carried out under the supervision of a "qualified teacher" in the Department concerned. In this context "qualified teacher" means the faculty member possessing (i) PG degree with a minimum of 3 years experience in teaching or (ii) Ph.D. degree.
- 4.4 A candidate may, however, in certain cases, be permitted to work on projects in an Industrial/Research Organization, on the recommendations of the Head of the Department Concerned. In such cases, the Project work shall be jointly supervised by a supervisor of the department and an expert, as a joint supervisor from the organization and the student shall be instructed to meet the supervisor periodically and to attend the review committee meetings for evaluating the progress.
- 4.5 The Project work (Phase II in the case of M.E/M.Tech.) shall be pursued for a minimum of 16 weeks during the final semester.
- 4.6 The deadline for submission of final Project Report is 60 calendar days from the last working day of the semester in which project / thesis / dissertation is done. However, the Phase-I of the Project work in the case M.E. / M.Tech. Programmes shall be submitted within a maximum period of 30 calendar days from the last working day of the semester as per the academic calendar published by the University.

## 5 EVALUATION OF PROJECT WORK

The evaluation of Project Work for Phase-I & Phase-II in the case of M.E. / M.Tech. and project work of M.B.A and M.C.A shall be done independently in the respective semesters and marks shall be allotted as per the weightages given in Clause 5.1.

- 5.1 There shall be three assessments (each 100 marks) during the Semester by a review committee. The Student shall make presentation on the progress made before the Committee. The Head of the Institution shall constitute the review committee for each branch of study. The total marks obtained in the three assessments shall be reduced to 20 marks and rounded to the nearest integer (as per the Table given below). There will be a vice-voce Examination during End Semester Examinations conducted by a Committee consisting of the supervisor, one internal examiner and one external examiner. The internal examiner and the external examiner shall be appointed by the Controller of Examination. The distribution of marks for the internal assessment and End semester examination is given below:

Internal Assessment (20 Marks)			End Semester Examination (80 Marks)			
Review - I	Review - II	Review - III	Thesis Submission (30 Marks)	Viva - Voce (Rounded to 50 Marks)		
			External Examiner	Internal Examiner	External Examiner	Supervisor Examiner
5	7.5	7.5	30	15	20	15

- 5.2 The Project Report prepared according to approved guidelines as given by Director, Academic Courses and duly signed by the supervisor(s) and the Head of the Department concerned shall be submitted to the Head of the Institution.
- 5.3 If the candidate fails to obtain 50% of the internal assessment marks in the Phase-I and Phase-II / final project, he/she will not be permitted to submit the report for that particular semester and has to re-enroll for the same in the subsequent semester.

If a candidate fails to submit the project report on or before the specified deadline, he/she is deemed to have failed in the Project Work and shall re-enroll for the same in a subsequent semester. This applies to both Phase-I and Phase-II in the case of M.E. / M.Tech. Project Work and the Final Project work of M.B.A. / M.C.A.

If a candidate fails in the end semester examinations of Phase-I, he/she has to resubmit the Project Report within 30 days from the date of declaration of the results. If he / she fails in the End semester examination of Phase-II of Project work of M.E. / M.Tech. or the Final Project work of M.B.A. / M.C.A, he/she shall resubmit the Project Report within 60 days from the date of declaration of the results. The resubmission of a project report and subsequent viva-voce examination will be considered as reappearance with payment of exam fee. For this purpose the same Internal and External examiners shall evaluate the resubmitted report.

- 5.3.1 A copy of the approved Project Report after the successful completion of viva-voce examinations shall be kept in the library of the college / institution.
- 5.3.2 Practical / Industrial Training, Summer Project if specified in the Curriculum shall not exceed the maximum duration of 4 weeks and should be organized by the Head of the Department for every student.
- 5.3.3 At the end of Practical / Industrial Training, Summer Project the candidate shall submit a certificate from the organization where he/she has undergone training and also a brief report. The evaluation for 100 marks will be carried out internally based on this report and a Viva-Voce Examination will be conducted by a Departmental Committee constituted by the Head of the Institution. Certificates submitted by the students shall be attached to the mark list sent by the Head of the Institution to the Controller of Examination.

## 6 CLASS ADVISER

There shall be a class advisor for each class. The class advisor will be one among the (course-instructors) of the class. He / She will be appointed by the Head of the department concerned. The class advisor is the ex-officio member and the Convener of the class committee. The responsibilities for the class advisor shall be:

- To act as the channel of communication between the HoD and the students of the respective class.
- To collect and maintain various statistical details of students.
- To help the chairperson of the class committee in planning and conduct of the class committee meetings.

## 10 PROCEDURES FOR AWARDING MARKS FOR INTERNAL ASSESSMENT(IA)

The maximum marks assigned to different courses shall be as given below:

Each of the theory and practical courses (including project work) shall carry a maximum of 100 marks of which 20 marks will be through internal assessment and the End Semester Examination (ESE) will carry 80 marks.

### 10.1 The marks for the continuous assessment shall be awarded as per the procedure given below:

#### (i) Theory Courses:

Three tests each carrying 100 marks shall be conducted during the semester by the Department / College concerned. The total marks obtained in all tests put together out of 300, shall be proportionately reduced for 20 marks and rounded to the nearest integer (This also implies equal weightage to all the three tests).

#### (ii) Practical Courses:

The maximum marks for Internal Assessment shall be 20 in case of practical courses. Every practical exercise / experiment shall be evaluated based on conduct of experiment / exercise and records maintained. There shall be at least one test. The criteria for arriving at the Internal Assessment marks of 20 is as follows: 75 marks shall be awarded for successful completion of all the prescribed experiments done in the Laboratory and 25 marks for the test. The total mark shall be reduced to 20 and rounded to the nearest integer.

#### (iii) Theory Courses with Laboratory component:

The maximum marks for Internal Assessment shall be 20 in case of theory courses with Laboratory component. For a theory course with Laboratory component, there shall be three assessments: the first two assessments (each with a maximum of 100 marks) will be from theory portions and the third assessment (maximum marks 100) will be for laboratory component. The sum of marks of all three assessments shall be reduced to 20 marks and rounded to the nearest integer.

#### (iv) Seminar / Professional Practices / Case Study:

The seminar / Case study is to be considered as purely INTERNAL (with 100% internal marks only). Every student is expected to present a minimum of 2 seminars per semester before the evaluation committee and for each seminar marks can be equally apportioned. The three member committee appointed by Head of the Institution will evaluate the seminar and at the end of the semester the marks can be consolidated and taken as the final mark. The evaluation shall be based on the seminar paper (40%), presentation (40%) and response to the questions asked during presentation (20%).

(v) The Industrial / Practical Training shall carry 100 marks and shall be evaluated through internal assessment only. At the end of Industrial / Practical training / internship / Summer Project, the candidate shall submit a certificate from the organization where he / she has undergone training and a brief report. The evaluation will be made based on this report and a Viva-Voce Examination, conducted internally by a three member Departmental Committee constituted by the Head of the Institution. Certificates submitted by the candidate shall be attached to the mark list sent by the Head of the Department.

- 10.2 Internal marks approved by the Head of the Institution shall be displayed by the respective HODs within 5 days from the last working day.
- 10.3 Every teacher is required to maintain an 'ATTENDANCE AND ASSESSMENT RECORD' which consists of attendance marked in each lecture or practical or project work class, the test marks and the record of class work (topics covered), separately for each course. This should be submitted to the Head of the Department periodically (at least three times in a semester) for checking the syllabus coverage and the records of test marks and attendance. The Head of the department will put his signature and date after due verification. At the end of the semester, the record should be verified by the Head of the institution who will keep this document in safe custody (for five years). The university or any inspection team appointed by the University may inspect the records of attendance and assessments of both current and previous semesters.

## 11 REQUIREMENTS FOR APPEARING FOR SEMESTER EXAMINATION

- 11.1 A candidate shall normally be permitted to appear for the University examinations of the current semester if he/she has satisfied the semester completion requirements as per clause 9.1 & 9.2 and has registered for examination in all courses of the current semester.
- 11.2 Further, registration is mandatory for all the courses in the current semester as well as for arrear(s) course(s) for the university examinations failing which, the candidate will not be permitted to move to the higher semester.
- 11.3 A student who has passed all the courses prescribed in the curriculum for the award of the degree shall not be permitted to re-enroll to improve his/her marks in a course or the aggregate marks / CGPA.

## 12 UNIVERSITY EXAMINATIONS

- 12.1 There shall be an End- Semester Examination of 3 hours duration in each lecture based course.

The examinations shall ordinarily be conducted between October and December during the odd semesters and between April and June in the even semesters.

For the practical examinations (including project work), both internal and external examiners shall be appointed by the University.

## 12.2 WEIGHTAGE

The following will be the weightage for different courses.

- i) Lecture or Lecture cum Tutorial based course:
- |                          |   |     |
|--------------------------|---|-----|
| Internal Assessment      | - | 20% |
| End Semester Examination | - | 80% |
- ii) Laboratory based courses
- |                          |   |     |
|--------------------------|---|-----|
| Internal Assessment      | - | 20% |
| End Semester Examination | - | 80% |

- To monitor the academic performance of the students including attendance and to inform the class committee.
- To attend to the students' welfare activities like awards, medals, scholarships and industrial visits.

## 7 CLASS COMMITTEE

- 7.1 A Class Committee consists of teachers of the concerned class, student representatives and a chairperson who is not teaching the class. It is like the 'Quality Circle' (more commonly used in industries) with the overall goal of improving the teaching-learning process. The functions of the class committee include:
- Solving problems experienced by students in the class room and in the laboratories.
  - Clarifying the regulations of the programme and the details of rules therein.
  - Informing the student representatives, the "academic schedule" including the dates of assessments and the syllabus coverage for each assessment period.
  - Informing the student representatives, the details of regulations regarding the weightage used for each assessment. In the case of practical courses (laboratory / project work / seminar etc.) the breakup of marks for each experiment/ exercise/ module of work, should be clearly discussed in the class committee meeting and informed to the students.
  - Analyzing the performance of the students of the class after each test and finding the ways and means of improving the Students Performance
  - Identifying the weak students, if any, in any specific subject and requesting the teachers concerned to provide some additional help or guidance or coaching to such weak students as frequently as possible.
- 7.2 The class committee for a class under a particular programme is normally constituted by the Head of the Department. However, if the students of different programmes are mixed in a class, the class committee is to be constituted by the Head of the Institution.
- 7.3 The class committee shall be constituted on the first working day of any semester or earlier.
- 7.4 At least 2 student representatives (usually 1 boy and 1 girl) shall be included in the class committee.
- 7.5 The chairperson of the class committee shall invite the Class adviser(s) and the Head of the Department to the meeting of the class committee.
- 7.6 The Head of the Institution may participate in any class committee of the institution.
- 7.7 The Chairperson of the Class Committee is required to prepare the minutes of every meeting, submit the same to the Head of the Institution within two days of the meeting and arrange to circulate among the concerned students and teachers. If there are some points in the minutes requiring action by the management, the same shall be brought to the notice of the management by the Head of the Institution.

- 7.8 The first meeting of the class committee shall be held within one week from the date of commencement of the semester in order to inform the students about the nature and weightage of assessments within the framework of the Regulations. Two or three subsequent meetings may be held at suitable intervals. During these meetings the student members, representing the entire class, shall meaningfully interact and express the opinions and suggestions of the class students to improve the effectiveness of the teaching-learning process.

## 8 COURSE COMMITTEE FOR COMMON COURSES

Each common course offered to more than one group of students shall have a "Course Committee" comprising all the teachers teaching the common course with one of them nominated as Course Coordinator. The nomination of the course Coordinator shall be made by the Head of the Department / Head of the Institution depending upon whether all the teachers teaching the common course belong to a single department or to several departments. The 'Course committee' shall meet as often as possible and ensure uniform evaluation of the tests and arrive at a common scheme of evaluation for the tests. Wherever it is feasible, the course committee may also prepare a common question paper for the Assessment Test(s).


## 9 ATTENDANCE REQUIREMENTS FOR COMPLETION OF A SEMESTER

- 9.1 A candidate who has fulfilled the following conditions shall be deemed to have satisfied the attendance requirements for completion of a semester.

Ideally every student is expected to attend all classes and earn 100% attendance. However in order to allow provision for certain unavoidable reasons such as prolonged hospitalization / accident / specific illness the student is expected to earn a minimum of 75% attendance to become eligible to write the End-Semester Examinations.

Therefore, every student shall secure not less than 75% of overall attendance in that semester as per clause 3.4.

- 9.2 However, a candidate who secures overall attendance between 65% and 74% in that current semester due to medical reasons (prolonged hospitalization / accident / specific illness / participation in sports events) may be permitted to appear for the current semester examinations subject to the condition that the candidate shall submit the medical certificate / sports participation certificate to the Head of the Institution. The same shall be forwarded to the Controller of Examinations for record purposes.
- 9.3 Candidates who could secure less than 65% overall attendance and **Candidates who do not satisfy the clauses 9.1 & 9.2** will not be permitted to write the end-semester examination of that current semester and are not permitted to go to next semester. They are required to repeat the incomplete semester in the next academic year.

  
PRINCIPAL,  
K. S. R. INSTITUTE FOR  
ENGINEERING AND TECHNOLOGY,  
K. S. R. KALBENAGAR,  
TIRUCHENKODU - 637 215,  
NAMAKKAL Dt, TAMIL NADU.



iii) Project work		
Internal Assessment	-	20%
Evaluation of Project Report		
by external examiner	-	30%
Viva-Voce Examination	-	50%
iv) Practical training / summer project / seminar		
Internal Assessment	-	100%

### 13 PASSING REQUIREMENTS

- 13.1** A candidate who secures not less than 50% of total marks prescribed for the course with a minimum of 50% of the marks prescribed for each of the course of the End-Semester University Examination in both theory and practical courses shall be declared to have passed in the course and acquired the relevant number of credits.
- 13.2** If the candidate fails to secure a pass in a particular course as per clause 13.1, it is mandatory that the candidate shall register and re-appear for the examination in that course during the subsequent semester when examination is conducted for that course. Further, the candidate should continue to enroll and reappear for the examination till a **pass** is secured in such arrear course.
- 13.3** The internal assessment marks obtained by the candidate in the first appearance shall be retained and considered valid for all subsequent attempts till the candidate secure a pass. However, from the third attempt onwards if a candidate fails to obtain pass marks (IA + End Semester Examination) as per clause 13.1, then the candidate shall be declared to have passed the examination if he/she secure a minimum of 50% marks prescribed for the university end semester examinations alone.

### 14 ELIGIBILITY FOR THE AWARD OF THE DEGREE

- 14.1** A student shall be declared eligible for the award of the degree if he/she has:
- (i) Successfully passed all the courses as specified in the curriculum corresponding to his/her programme within the stipulated period. (as per clause 3.1)
  - (ii) No disciplinary action is pending against him/her.
  - (iii) The award of the degree must have been approved by the syndicate.
  - (iv) Successfully completed any additional courses prescribed by the Director, Academic Courses

### 15 AWARD OF LETTER GRADES

- 15.1** All assessments of a course will be done on absolute marks basis. However, for the purpose of reporting the performance of a candidate, letter grades, each carrying certain points specified, will be awarded as per the range of total marks (out of 100) obtained by the candidate (Regular or Arrear), as detailed below:



Letter grade	Grade Points	Marks Range
S	10	91 – 100
A	9	81 – 90
B	8	71 – 80
C	7	61 – 70
D	6	57 – 60
E	5	50 – 56
U	0	< 50
W	0	(or ≥ 50, but not satisfying clause 13.1)

A student is deemed to have passed and acquired the corresponding credits in a particular course if he / she **obtained** any one of the following grades: "S", "A", "B", "C", "D", "E".

'SA' denotes shortage of attendance (as per Clause 6) and hence prevented from writing end semester examination. 'SA' will appear only in the result sheet.

'U' denotes Reappearance (RA) is required for the examination in that particular course. 'W' denotes withdrawal from exam for the particular course.  
(The grades U and W will figure both in Mark Sheet as well as in Result Sheet)

## 15.2 GRADE SHEET

After results are declared, Grade Sheets will be issued to each student which will contain the following details:

- The college in which the candidate has studied.
- The list of courses enrolled during the semester and the grades scored.
- The Grade Point Average (GPA) for the semester and
- The Cumulative Grade Point Average (CGPA) of all courses enrolled from first semester onwards.

GPA for a semester is the ratio of the sum of the products of the number of credits for courses acquired and the corresponding points to the sum of the number of credits for the courses acquired in the semester. CGPA will be calculated in a similar manner, considering all the courses registered from first semester.

$$\text{GPA / CGPA} = \frac{\sum_{i=1}^n C_i GP_i}{\sum_{i=1}^n C_i}$$

where

$C_i$  is the number of credits assigned to the course

$GP_i$  is the Grade point corresponding to the grade obtained for each Course

$n$  is number of all Courses successfully cleared during the particular semester in the case of GPA and during all the semesters in the case of CGPA.

"U", "I" and "W" grades will be excluded for calculating GPA and CGPA.

## 16 CLASSIFICATION OF THE DEGREE AWARDED

### 16.1 FIRST CLASS WITH DISTINCTION:

A candidate who satisfies the following conditions shall be declared to have passed the examination in **First class with Distinction**:

#### M.E. / M.Tech. M.B.A.(Full Time)

- Should have passed the End semester examination in all the courses of all the four semesters in his/her **First Appearance** within two years. Withdrawal from examination (vide Clause 17) will not be considered as an appearance. One year authorized break of study (if availed of) is permitted in addition to two years for award of First class with Distinction.
- Should have secured a CGPA of not less than 8.50

#### M.E. / M.Tech. M.B.A.(Part Time) and M.C.A (Full Time)

- Should have passed the End semester examination in all the courses of all the six semesters in his/her **First Appearance** within three years. Withdrawal from examination (vide Clause 17) will not be considered as an appearance. One year authorized break of study (if availed of) is permitted in addition to three years for award of First class with Distinction.
- Should have secured a CGPA of not less than 8.50.

### 16.2 FIRST CLASS:

A candidate who satisfies the following conditions shall be declared to have passed the examination in **First class**:

#### M.E. / M.Tech. M.B.A.(Full Time)

- Should have passed the End semester examination in all the courses of all the four semesters within three years. One year authorized break of study (if availed of) or prevention from writing the End Semester examination due to lack of attendance (if applicable) is included in the three years.
- Should have secured a CGPA of not less than 6.50.

#### M.E. / M.Tech. M.B.A. (Part Time) and M.C.A (Full Time)

- Should have passed the End semester examination in all the courses of all the six semesters within four years. One year authorized break of study (if availed of) or prevention from writing the End Semester examination due to lack of attendance (if applicable) is included in the four years.
- Should have secured a CGPA of not less than 6.50.



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### 16.3 SECOND CLASS:

All other candidates (not covered in clauses 16.1 and 16.2) who qualify for the award of the degree (vide Clause 14) shall be declared to have passed the examination in **Second Class**.

- 16.4. A candidate who is absent in semester examination in a course / project work after having registered for the same shall be considered to have appeared in that examination for the purpose of classification.

### 16.5 Photocopy / Revaluation

A candidate can apply for photocopy of his/her semester examination answer paper in a theory course, within 2 weeks from the declaration of results, on payment of a prescribed fee through proper application to the Controller of Examinations through the Head of Institutions. The answer script is to be valued and justified by a faculty member, who handled the subject and recommend for revaluation with breakup of marks for each question. Based on the recommendation, the candidate can register for the revaluation through proper application to the Controller of Examinations. The Controller of Examinations will arrange for the revaluation and the results will be intimated to the candidate concerned through the Head of the Institutions. Revaluation is not permitted for practical courses and for project work.

A candidate can apply for revaluation of answer scripts for not exceeding 5 subjects at a time.

### 16.6 Review

Candidates not satisfied with Revaluation can apply for Review of his/ her examination answer paper in a theory course, within the prescribed date on payment of a prescribed fee through proper application to Controller of Examination through the Head of the Institution.

Candidates applying for Revaluation only are eligible to apply for Review.

### 17 PROVISION FOR WITHDRAWAL FROM EXAMINATION:

A candidate may for valid reasons and on prior application, be granted permission to withdraw from appearing for the examination of any one course or consecutive examinations of more than one course in a semester examination.

- 17.1 Such withdrawal shall be permitted only once during the entire period of study of the degree programme.
- 17.2 Withdrawal application is valid only if it is made within 10 days prior to the commencement of the examination in that course or courses and recommended by the Head of the Institution and approved by the Controller of Examinations.
- 17.3 Notwithstanding the requirement of mandatory TEN days notice, applications for withdrawal for special cases under extraordinary conditions will be considered on the merit of the case.
- 17.4 Withdrawal shall not be construed as an appearance for the eligibility of a candidate for First Class with Distinction. Withdrawal is not permitted in the final semester.

17.5 Withdrawal from the End semester examination is **NOT** applicable to arrears subjects of previous semesters

17.6 The candidate shall reappear for the withdrawn courses during the examination conducted in the subsequent semester.

## 18 AUTHORIZED BREAK OF STUDY FROM A PROGRAMME

18.1 Break of Study shall be granted only once for valid reasons for a maximum of one year during the entire period of study of the degree programme. However, in extraordinary situation the candidate may apply for additional break of study not exceeding another one year by paying prescribed fee for break of study. If a candidate intends to temporarily discontinue the programme in the middle of the semester for valid reasons, and rejoin the programme in a subsequent year, permission may be granted based on the merits of the case provided he / she applies to the **Director, Student Affairs** in advance, but not later than the last date for registering for the end semester examination of the semester in question, through the Head of the Institution stating the reasons therefor and the probable date of rejoining the programme.

18.2 The candidates permitted to rejoin the programme after break of study / prevention due to lack of attendance, shall be governed by the Curriculum and Regulations in force at the time of rejoining. The students rejoining in new Regulations shall apply to the Director, Academic Courses in the prescribed format through Head of the Institution at the beginning of the readmitted semester itself for prescribing additional courses, if any, from any semester of the regulations in-force, so as to bridge the curriculum in-force and the old curriculum.

18.3 The authorized break of study (for a maximum of one year) will not be counted for the duration specified for passing all the courses for the purpose of classification. (vide Clause 16.1). However, additional break of study granted will be counted for the purpose of classification.

18.4 The total period for completion of the Programme reckoned from, the commencement of the first semester to which the candidate was admitted shall not exceed the maximum period specified in clause 3.1 irrespective of the period of break of study (vide clause 18.1) in order that he/she may be eligible for the award of the degree.

18.5 If any student is detained for want of required attendance, the period spent in that semester shall not be considered as authorized 'Break of Study' is not applicable for this case.

## 19 DISCIPLINE

19.1 Every student is required to observe disciplined and decorous behavior both inside and outside the college and not to indulge in any activity which will tend to bring down the prestige of the University / College. The Head of Institution shall constitute a disciplinary committee consisting of Head of Institution, Two Heads of Department of which one should be from the faculty of the student, to enquire into acts of indiscipline and notify the University about the disciplinary action recommended for approval. In case of any serious disciplinary action which leads to suspension or dismissal, then a committee shall be constituted including one representative from Anna University, Chennai. In this regard, the member will be nominated by the University on getting information from the Head of the Institution.

19.2 If a student indulges in malpractice in any of the University / internal examination he / she shall be liable for punitive action as prescribed by the University from time to time.

**20 REVISION OF REGULATIONS, CURRICULUM AND SYLLABI**

The University may from time to time revise, amend or change the Regulations, Curriculum, Syllabus and scheme of examinations through the Academic Council with the approval of Syndicate.

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K. R. S. R. INSTITUTE FORGY,  
ENGINEERING AND TECHNOLOGY.  
K. R. S. R. HALVINAGAR,  
TIRUCHENGODE-612 019,  
NAMKAL VA, TAMIL NADU

**AFFILIATED INSTITUTIONS**


**REGULATIONS 2017  
CHOICE BASED CREDIT SYSTEM  
COMMON TO ALL POST GRADUATE PROGRAMMES**

The following Regulations is applicable to the students admitted to M.E / M.Tech., M.C.A and M.B.A. Programmes at all Engineering Colleges affiliated to Anna University, Chennai (other than Autonomous Colleges) and to all the University Colleges of Engineering of Anna University, Chennai from the academic year 2017-2018.

**1 PRELIMINARY DEFINITIONS AND NOMENCLATURE**

In these Regulations, unless the context otherwise requires:

- i. **"Programme"** means Post graduate Degree Programme e.g. M.E., M.Tech. Degree Programme.
- ii. **"Branch"** means specialization or discipline of M.E. / M.Tech. Degree Programme like "Structural Engineering", "Engineering Design", etc.
- iii. **"Course"** means Theory or Practical subject that is normally studied in a semester, like Applied Mathematics, Advanced Thermodynamics, etc.
- iv. **"Director, Academic Courses"** means the authority of the University who is responsible for all academic activities of the University for implementation of relevant Rules and Regulations.
- v. **"Chairman"** means the Head of the Faculty.
- vi. **"Head of the Department"** means Head of the Department concerned.
- vii. **"Head of the Institution"** means the Principal of a College / Institution who is responsible for all academic activities of that College / Institution and for implementation of relevant Rules and Regulations.
- viii. **"Controller of Examinations"** means the Authority of the University who is responsible for all activities of the University Examinations.
- ix. **"University"** means ANNA UNIVERSITY, CHENNAI.

  
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ENGINEERING AND TECHNOLOGY,  
K. S. R. KALVI NAGAR,  
TIRUCHENGODE-637 215,  
NAMAKKAL Dt, TAMIL NADU.

## **2 PROGRAMMES OFFERED, MODES OF STUDY AND ADMISSION REQUIREMENTS**

### **2.1 P.G. PROGRAMMES OFFERED:**

1. M.E
2. M.Tech.
3. M.B.A.
4. M.C.A.

### **2.2 MODES OF STUDY:**

#### **2.2.1 Full-Time:**

Candidates admitted under 'Full-Time' should be available in the College / Institution during the entire duration of working hours (From Morning to Evening on Full-Time basis) for the curricular, co-curricular and extra-curricular activities assigned to them.

The Full-Time candidates should not attend any other Full-Time programme(s) / course(s) or take up any Full-Time job / Part-Time job in any Institution or Company during the period of the Full-Time programme. Violation of the above rules will result in cancellation of admission to the PG programme.

#### **2.2.2 Part-Time Mode:**

In this mode of study, the students are required to attend classes conducted in the evenings and complete the course in three years.

2.2.3 Conversion from one mode of study to the other is not permitted.

### **2.3 ADMISSION REQUIREMENTS:**

2.3.1 Candidates for admission to the first semester of the Post-Graduate Degree Programme shall be required to have passed an appropriate Under-Graduate Degree Examination of Anna University or equivalent as specified under qualification for admission as per the Tamil Nadu Common Admission (TANCA) criteria.

**Note:** TANCA releases the updated criteria during the admissions every academic year. Admission shall be offered only to the candidates who possess the qualification prescribed against each programme.

Any other relevant qualification which is not prescribed against each programme shall be considered for equivalence by the committee constituted for the purpose. Admission to such degrees shall be offered only after obtaining equivalence to such degrees.

2.3.2 However, the Syndicate of the University may decide to restrict admission in any particular year to candidates having a subset of qualifications prescribed at the time of admission.

2.3.3 Notwithstanding the qualifying examination the candidate might have passed, he/she shall have a minimum level of proficiency in the appropriate programme / courses as prescribed by the Syndicate of the University from time to time.

2.3.4 Eligibility conditions for admission such as the class obtained, the number of attempts in qualifying examination and physical fitness will be as prescribed by the Syndicate of the University from time to time.

2.3.5 All Part-Time candidates should satisfy other conditions regarding Experience, Sponsorship etc. that may be prescribed by the Syndicate from time to time.



### 3 STRUCTURE OF THE PROGRAMMES

#### 3.1 Categorization of Courses

Every Post Graduate Degree Programme will have a curriculum with syllabi consisting of theory and practical courses that shall be categorized as follows:

- i. **Foundation Courses (FC)** may include Mathematics or other basic courses
- ii. **Professional Core (PC)** courses include the core courses relevant to the chosen specialization/branch.
- iii. **Professional Elective (PE)** courses include the elective courses relevant to the chosen specialization/ branch.
- iv. **Employability Enhancement Courses (EEC)** include Project Work and/or Internship, Seminar, Professional Practices, Summer Project, Case Study and Industrial / Practical Training.

Instead of two electives in the curriculum, the student may be permitted to choose a maximum of 2 courses from other PG programmes with the approval of the Head of the Department offering such courses.

#### 3.2 Courses per Semester

Curriculum of a semester shall normally have a blend of lecture courses and practical courses including Employability Enhancement Courses. Each course may have credits assigned as per clause 3.3.

#### 3.3 Credit Assignment

Each course is assigned certain number of credits based on the following:

Contact period per week	CREDITS
1 Lecture Period	1
2 Tutorial Periods	1
2 Practical Periods (Laboratory / Seminar / Project Work etc.)	1

The Contact Periods per week for Tutorials and Practical can only be in multiples of 2.

#### 3.4 Project Work

3.4.1 The project work for M.E. / M.Tech. Programmes consist of Phase-I and Phase-II. The Phase-I is to be undertaken during III semester and Phase-II, which is a continuation of Phase-I is to be undertaken during IV semester.

3.4.2 In case of candidates of M.E. / M.Tech. Programmes not completing Phase-I of project work successfully, the candidates can undertake Phase-I again in the subsequent semester. In such cases the candidates can enroll for Phase-II, only after successful completion of Phase-I.

3.4.3 Project work shall be carried out under the supervision of a "qualified teacher" in the Department concerned. In this context "qualified teacher" means the faculty member possessing (i) PG degree with a minimum of 3 years experience in teaching or (ii) Ph.D. degree.

3.4.4 A candidate may, however, in certain cases, be permitted to work on projects in an Industrial/Research Organization, on the recommendations of the Head of the Department Concerned. In such cases, the Project work shall be jointly supervised by a supervisor of the department and an expert, as a joint supervisor from the organization and the student shall be instructed to meet the supervisor periodically and to attend the review committee meetings for evaluating the progress.

3.4.5 The Project work (Phase II in the case of M.E/M.Tech.) shall be pursued for a minimum of 16 weeks during the final semester.

3.6 The deadline for submission of final Project Report is 60 calendar days from the last working day of the semester in which project / thesis / dissertation is done. However, the Phase-I of the Project work in the case M.E. / M.Tech. Programmes shall be submitted within a maximum period of 30 calendar days from the last working day of the semester as per the academic calendar published by the University.

### 3.7 Industrial Training / Internship

The students may undergo Industrial training for a period as specified in the curriculum during summer / winter vacation. In this case the training has to be undergone continuously for the entire period.

The students may undergo Internship at Research organization / University (after due approval from the Department Consultative Committee) for the period prescribed in the curriculum during summer / winter vacation, in lieu of Industrial training.

### 3.8 Value Added Courses

The Students may optionally undergo Value Added Courses and the credits earned through the Value Added Courses shall be over and above the total credit requirement prescribed in the curriculum for the award of the degree. One / Two credit courses shall be offered by a Department of an institution with the prior approval from the Head of the Institution. The details of the syllabus, time table and faculty may be sent to the Centre for Academic Courses and the Controller of Examinations after approval from the Head of the Institution concerned atleast one month before the course is offered. Students can take a maximum of two one credit courses / one two credit course during the entire duration of the Programme.

### 3.9 Online Courses

3.9.1 Students may be permitted to credit only one online course of 3 credits with the approval of Head of the Institution and Centre for Academic Courses.

3.9.2 Students may be permitted to credit one online course (which are provided with certificate) subject to a maximum of three credits. The approved list of online courses will be provided by the Centre for Academic courses from time to time. The student needs to obtain certification or credit to become eligible for writing the End Semester Examination to be conducted by Controller of Examinations, Anna University. The details regarding online courses taken up by students should be sent to the Controller of Examinations, Anna University and Centre for Academic Courses one month before the commencement of end Semester Examination.

### 3.10 Medium of Instruction

The medium of instruction is English for all courses, examinations, seminar presentations and project / thesis / dissertation reports.

#### 4 DURATION AND STRUCTURE OF THE PROGRAMMES:

- 4.1 The minimum and maximum period for completion of the P.G. Programmes are given below:

Programme	Min. No. of Semesters	Max. No. of Semesters
M.E. / M.Tech. (Full-Time)	4	8
M.E. / M.Tech. (Part Time)	6	12
M.C.A. (Full Time)	6	12
M.B.A. (Full Time)	4	8
M.B.A. (Part Time)	6	12

- 4.2 The Curriculum and Syllabi of all the P.G. Programmes shall be approved by the Academic Council of Anna University. The number of Credits to be earned for the successful completion of the programme shall be as specified in the Curriculum of the respective specialization of the P.G. Programme
- 4.3 Each semester shall normally consist of 75 working days or 540 periods of each 50 minutes duration, for full-time mode of study or 250 periods for part-time mode of study. The Head of the Institution shall ensure that every teacher imparts instruction as per the number of periods specified in the syllabus and that the teacher teaches the full content of the specified syllabus for the course being taught. For the purpose of calculation of attendance requirement for writing the end semester examinations (as per clause 9) by students, following method shall be used.

$$\text{Percentage of Attendance} = \frac{\text{Total no. of periods attended in all the courses per semester}}{(\text{No. of periods / week as prescribed in the curriculum}) \times 15 \text{ taken together for all courses of the semester}} \times 100$$

End Semester Examinations conducted by the University will be scheduled after the last working day of the semester.

- 4.4 The minimum prescribed credits required for the award of the degree shall be within the limits specified below:

Programme	Prescribed Credit Range
M.E. / M.Tech.	70 to 75

Programme	Prescribed Credit Range
M.C.A.	115 - 120
M.B.A.	86 - 90

#### 5. COURSE REGISTRATION

- 5.1 The Institution is responsible for registering the courses that each student is proposing to undergo in the ensuing semester. Each student has to register for all courses to be undergone in the curriculum of a particular semester (with the facility to drop courses to a maximum of 6 credits (vide clause 5.2)). The student can also register for courses for which the student has failed in the earlier semesters.

The registration details of the candidates may be approved by the Head of the Institution and forwarded to the Controller of Examinations. This registration is for undergoing the course as well as for writing the End Semester Examinations.

**The courses that a student registers in a particular semester may include**

- i. Courses of the current semester.
- ii. The core (Theory/Lab /EEC) courses that the student has not cleared in the previous semesters.
- iii. Elective courses which the student failed (either the same elective or a different elective instead).

**5.2 Flexibility to Drop courses**

- 5.2.1 A student has to earn the total number of credits specified in the curriculum of the respective Programme of study in order to be eligible to obtain the degree.
- 5.2.2 From the II to Final semesters, the student has the option of dropping existing courses in a semester during registration. Total number of credits of such courses cannot exceed 6 for PG (Full Time) programmes and cannot exceed 3 for PG (Part Time) programmes.

**6 EVALUATION OF PROJECT WORK**

The evaluation of Project Work for Phase-I & Phase-II in the case of M.E. / M.Tech. and project work of M.B.A and M.C.A shall be done independently in the respective semesters and marks shall be allotted as per the weightages given in Clause 6.1.

- 6.1 There shall be three assessments (each 100 marks) during the Semester by a review committee. The Student shall make presentation on the progress made before the Committee. The Head of the Institution shall constitute the review committee for each branch of study. The total marks obtained in the three assessments shall be reduced to 20 marks and rounded to the nearest integer (as per the Table given below). There will be a vice-voce Examination during End Semester Examinations conducted by a Committee consisting of the supervisor, one internal examiner and one external examiner. The internal examiner and the external examiner shall be appointed by the Controller of Examination. The distribution of marks for the internal assessment and End semester examination is given below:

Internal Assessment (20 Marks)			End Semester Examination (80 Marks)			
Review - I	Review - II	Review - III	Thesis Submission (30 Marks)	Viva – Voce (Rounded to 50 Marks)		
			External Examiner	Internal Examiner	External Examiner	Supervisor Examiner
5	7.5	7.5	30	15	20	15

- 6.2 The Project Report prepared according to approved guidelines as given by Director, Academic Courses and duly signed by the supervisor(s) and the Head of the Department concerned shall be submitted to the Head of the Institution.

  
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- 6.3** If the candidate fails to obtain 50% of the internal assessment marks in the Phase-I and Phase-II / final project, he/she will not be permitted to submit the report for that particular semester and has to re-enroll for the same in the subsequent semester.

If a candidate fails to submit the project report on or before the specified deadline, he/she is deemed to have failed in the Project Work and shall re-enroll for the same in a subsequent semester. This applies to both Phase-I and Phase-II in the case of M.E. / M.Tech. Project Work and the Final Project work of M.B.A. / M.C.A.

If a candidate fails in the end semester examinations of Phase-I, he/she has to resubmit the Project Report within 30 days from the date of declaration of the results. If he / she fails in the End semester examination of Phase-II of Project work of M.E. / M.Tech. or the Final Project work of M.B.A. / M.C.A, he/she shall resubmit the Project Report within 60 days from the date of declaration of the results. The resubmission of a project report and subsequent viva-voce examination will be considered as reappearance with payment of exam fee. For this purpose the same Internal and External examiners shall evaluate the resubmitted report.

- 6.3.1** A copy of the approved Project Report after the successful completion of viva-voce examinations shall be kept in the library of the college / institution.
- 6.3.2** Practical / Industrial Training, Summer Project if specified in the Curriculum shall not exceed the maximum duration of 4 weeks and should be organized by the Head of the Department for every student.
- 6.3.3** At the end of Practical / Industrial Training, Summer Project the candidate shall submit a certificate from the organization where he/she has undergone training and also a brief report. The evaluation for 100 marks will be carried out internally based on this report and a Viva-Voce Examination will be conducted by a Departmental Committee constituted by the Head of the Institution. Certificates submitted by the students shall be attached to the mark list sent by the Head of the Institution to the Controller of Examination.

## **7 CLASS ADVISER**

There shall be a class advisor for each class. The class advisor will be one among the (course-instructors) of the class. He / She will be appointed by the Head of the department concerned. The class advisor is the ex-officio member and the Convener of the class committee. The responsibilities for the class advisor shall be:

- To act as the channel of communication between the HoD and the students of the respective class.
- To collect and maintain various statistical details of students.
- To help the chairperson of the class committee in planning and conduct of the class committee meetings.
- To monitor the academic performance of the students including attendance and to inform the class committee.
- To attend to the students' welfare activities like awards, medals, scholarships and industrial visits.

## **8 CLASS COMMITTEE**

- 8.1** A Class Committee consists of teachers of the concerned class, student representatives and a chairperson who is not teaching the class. It is like the 'Quality Circle' (more commonly used in industries) with the overall goal of improving the teaching-learning process. The functions of the class committee include:

- Solving problems experienced by students in the class room and in the laboratories.
  - Clarifying the regulations of the programme and the details of rules therein.
  - Informing the student representatives, the "academic schedule" including the dates of assessments and the syllabus coverage for each assessment period.
  - Informing the student representatives, the details of regulations regarding the weightage used for each assessment. In the case of practical courses (laboratory / project work / seminar etc.) the breakup of marks for each experiment/ exercise/ module of work, should be clearly discussed in the class committee meeting and informed to the students.
  - Analyzing the performance of the students of the class after each test and finding the ways and means of improving the Students Performance
  - Identifying the weak students, if any, in any specific subject and requesting the teachers concerned to provide some additional help or guidance or coaching to such weak students as frequently as possible.
- 8.2 The class committee for a class under a particular programme is normally constituted by the Head of the Department. However, if the students of different programmes are mixed in a class, the class committee is to be constituted by the Head of the Institution.
- 8.3 The class committee shall be constituted on the first working day of any semester or earlier.
- 8.4 At least 2 student representatives (usually 1 boy and 1 girl) shall be included in the class committee.
- 8.5 The chairperson of the class committee shall invite the Class adviser(s) and the Head of the Department to the meeting of the class committee.
- 8.6 The Head of the Institution may participate in any class committee of the institution.
- 8.7 The Chairperson of the Class Committee is required to prepare the minutes of every meeting, submit the same to the Head of the Institution within two days of the meeting and arrange to circulate among the concerned students and teachers. If there are some points in the minutes requiring action by the management, the same shall be brought to the notice of the management by the Head of the Institution.
- 8.8 The first meeting of the class committee shall be held within one week from the date of commencement of the semester in order to inform the students about the nature and weightage of assessments within the framework of the Regulations. Two or three subsequent meetings may be held at suitable intervals. During these meetings the student members, representing the entire class, shall meaningfully interact and express the opinions and suggestions of the class students to improve the effectiveness of the teaching-learning process.

## 9 COURSE COMMITTEE FOR COMMON COURSES

Each common course offered to more than one group of students shall have a "Course Committee" comprising all the teachers teaching the common course with one of them nominated as Course Coordinator. The nomination of the course Coordinator shall be made by the Head of the Department / Head of the Institution depending upon whether all the teachers teaching the common course belong to a single department or to several departments. The 'Course committee' shall meet as often as possible and ensure uniform evaluation of the tests and arrive at a common scheme of evaluation for the tests. Wherever it is feasible, the course committee may also prepare a common question paper for the Assessment Test(s).

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 K. S. R. INSTITUTE FOR  
 ENGINEERING AND TECHNOLOGY,  
 K. S. R. KALVI NAGAR,  
 TIRUCHENGODE-637 215,  
 NAMAKKAL DL, TAMIL NADU.

## 10 ATTENDANCE REQUIREMENTS FOR COMPLETION OF A SEMESTER

- 10.1 A candidate who has fulfilled the following conditions shall be deemed to have satisfied the attendance requirements for completion of a semester.

Ideally every student is expected to attend all classes and earn 100% attendance. However in order to allow provision for certain unavoidable reasons such as prolonged hospitalization / accident / specific illness the student is expected to earn a minimum of 75% attendance to become eligible to write the End-Semester Examinations.

Therefore, every student shall secure not less than 75% of overall attendance in that semester as per clause 4.3.

- 10.2 However, a candidate who secures overall attendance between 65% and 74% in that current semester due to medical reasons (prolonged hospitalization / accident / specific illness / participation in sports events) may be permitted to appear for the current semester examinations subject to the condition that the candidate shall submit the medical certificate / sports participation certificate to the Head of the Institution. The same shall be forwarded to the Controller of Examinations for record purposes.
- 10.3 Candidates who could secure less than 65% overall attendance and **Candidates who do not satisfy the clauses 10.1 & 10.2** will not be permitted to write the end-semester examination of that current semester and are not permitted to go to next semester. They are required to repeat the incomplete semester in the next academic year.

## 11 PROCEDURES FOR AWARDING MARKS FOR INTERNAL ASSESSMENT(IA)

The maximum marks assigned to different courses shall be as given below:

Each of the theory and practical courses (including project work) shall carry a maximum of 100 marks of which 20 marks will be through internal assessment and the End Semester Examination (ESE) will carry 80 marks.

- 11.1 The marks for the continuous assessment shall be awarded as per the procedure given below:

### (i) Theory Courses:

Three tests each carrying 100 marks shall be conducted during the semester by the Department / College concerned. The total marks obtained in all tests put together out of 300, shall be proportionately reduced for 20 marks and rounded to the nearest integer (This also implies equal weightage to all the three tests).

### (ii) Practical Courses:

The maximum marks for Internal Assessment shall be 20 in case of practical courses. Every practical exercise / experiment shall be evaluated based on conduct of experiment / exercise and records maintained. There shall be at least one test. The criteria for arriving at the Internal Assessment marks of 20 is as follows: 75 marks shall be awarded for successful completion of all the prescribed experiments done in the Laboratory and 25 marks for the test. The total mark shall be reduced to 20 and rounded to the nearest integer.

### (iii) Theory Courses with Laboratory component:

The maximum marks for Internal Assessment shall be 20 in case of theory courses with Laboratory component. For a theory course with Laboratory component, there shall be three assessments: the first two assessments (each with a maximum of 100 marks) will be from theory portions and the third assessment (maximum marks 100) will be for laboratory component. The sum of marks of all three assessments shall be reduced to 20 marks and rounded to the nearest integer.

#### (iv) Other Employability Enhancement Courses

- (a) The seminar / Case study is to be considered as purely INTERNAL (with 100% internal marks only). Every student is expected to present a minimum of 2 seminars per semester before the evaluation committee and for each seminar marks can be equally apportioned. The three member committee appointed by Head of the Institution will evaluate the seminar and at the end of the semester the marks can be consolidated and taken as the final mark. The evaluation shall be based on the seminar paper (40%), presentation (40%) and response to the questions asked during presentation (20%).
- (b) The Industrial / Practical Training shall carry 100 marks and shall be evaluated through internal assessment only. At the end of Industrial / Practical training / internship / Summer Project, the candidate shall submit a certificate from the organization where he / she has undergone training and a brief report. The evaluation will be made based on this report and a Viva-Voce Examination, conducted internally by a three member Departmental Committee constituted by the Head of the Institution. Certificates submitted by the candidate shall be attached to the mark list sent by the Head of the Department.

#### 11.2 Assessment for Value Added Course

The one / two credit course shall carry 100 marks and shall be evaluated through **continuous assessments only**. Two Assessments shall be conducted during the semester by the Department concerned. The total marks obtained in the tests shall be reduced to 100 marks and rounded to the nearest integer. A committee consisting of the Head of the Department, staff handling the course and a senior Faculty member nominated by the Head of the Institution shall monitor the evaluation process. The list of students along with the marks and the grades earned may be forwarded to the Controller of Examinations for appropriate action at least one month before the commencement of End Semester Examinations

#### 11.3 Assessment for Online Courses

Students may be permitted to credit one online course (which are provided with certificate) subject to a maximum of three credits. The approved list of online courses will be provided by the Centre for Academic courses from time to time. **This online course of 3 credits can be considered instead of one elective course.** The student needs to obtain certification or credit to become eligible for writing the End Semester Examination to be conducted by Anna University. **The course shall be evaluated through the End Semester Examination only conducted by Controller of Examinations, Anna University.**

11.4 Internal marks approved by the Head of the Institution shall be displayed by the respective HODs within 5 days from the last working day.

11.5 Every teacher is required to maintain an 'ATTENDANCE AND ASSESSMENT RECORD' which consists of attendance marked in each lecture or practical or project work class, the test marks and the record of class work (topics covered), separately for each course. This should be submitted to the Head of the Department periodically (at least three times in a semester) for checking the syllabus coverage and the records of test marks and attendance. The Head of the department will put his signature and date after due verification. At the end the semester, the record should be verified by the Head of the institution who will keep this document in safe custody (for five years). The university or any inspection team appointed by the University may inspect the records of attendance and assessments of both current and previous semesters.



## 12 REQUIREMENTS FOR APPEARING FOR SEMESTER EXAMINATION

- 12.1 A candidate shall normally be permitted to appear for the University examinations of the current semester if he/she has satisfied the semester completion requirements as per clause 10.1 & 10.2 and has registered for examination in all courses of the current semester.
- 12.2 Further, registration is mandatory for all the courses in the current semester as well as for arrear(s) course(s) for the university examinations failing which, the candidate will not be permitted to move to the higher semester.
- 12.3 A student who has passed all the courses prescribed in the curriculum for the award of the degree shall not be permitted to re-enroll to improve his/her marks in a course or the aggregate marks / CGPA.

## 13 UNIVERSITY EXAMINATIONS

- 13.1 There shall be an End- Semester Examination of 3 hours duration in each lecture based course.

The examinations shall ordinarily be conducted between October and December during the odd semesters and between April and June in the even semesters.

For the practical examinations (including project work), both internal and external examiners shall be appointed by the University.

### 13.2 WEIGHTAGE

The following will be the weightage for different courses.

- i) Lecture or Lecture cum Tutorial based course:

Internal Assessment	-	20%
End Semester Examination	-	80%

- ii) Laboratory based courses

Internal Assessment	-	20%
End Semester Examination	-	80%

- iii) Project work

Internal Assessment	-	20%
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Evaluation of Project Report by external examiner	-	30%
Viva-Voce Examination	-	50%

- iv) Practical training / summer project / seminar

Internal Assessment	-	100%
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## 14 PASSING REQUIREMENTS

- 14.1 A candidate who secures not less than 50% of total marks prescribed for the course with a minimum of 50% of the marks prescribed for each of the course of the End-Semester University Examination in both theory and practical courses shall be declared to have passed in the course and acquired the relevant number of credits.



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- 14.2 If a student fails to secure a pass in theory courses in the current semester examination, he/she is allowed to write arrear examinations for the next three consecutive semesters and their internal marks shall be carried over for the above mentioned period of three consecutive semesters.

In case, if he/she has not successfully completed all the courses of semester I at the end of semester IV, he/she shall redo the semester I courses along with regular students. For the subsequent semesters of II, III and IV, the same procedure shall be followed, subject to the maximum permissible period for this programme.

For MCA programme, to register for courses in V and VI semesters, the student should have successfully completed all the courses of I and II semesters respectively. In case, if he/she has not successfully completed all the courses of semester III at the end of semester VI, he/she shall redo the semester III courses along with regular students. For the subsequent semesters of IV, V and VI, the same procedure shall be followed, subject to the maximum permissible period for this programme.

- 14.3 If a student fails to secure a pass in a laboratory course, **the student shall register** for the course again, when offered next.
- 14.4 If a student fails to secure a pass in project work even after availing clause (6.3), **the student shall register** for the course again, when offered next.
- 14.5 The passing requirement for the courses which are assessed only through purely internal assessment (EEC courses except project work), is 50% of the internal assessment marks only.
- 14.6 A student can apply for revaluation of the student's semester examination answer paper in a theory course, within 2 weeks from the declaration of results, on payment of a prescribed fee along with prescribed application to the COE through the Head of the Institution. The COE will arrange for the revaluation and the results will be intimated to the student concerned through the Head of the Institution. Revaluation is not permitted for laboratory course and project work.

## 15 AWARD OF LETTER GRADES

- 15.1 All assessments of a course will be evaluated on absolute marks basis. However, for the purpose of reporting the performance of a candidate, letter grades, each carrying certain number of points, will be awarded as per the range of total marks (out of 100) obtained by the candidate in each subject as detailed below:

Letter Grade	Grade Points	Marks Range
O (Outstanding)	10	91 - 100
A + (Excellent)	9	81 - 90
A (Very Good)	8	71 - 80
B + (Good)	7	61 - 70
B (Average)	6	50 - 60
RA	0	<50
SA (Shortage of Attendance)	0	
W	0	

A student is deemed to have passed and acquired the corresponding credits in a particular course if he/she obtains any one of the following grades: "O", "A+", "A", "B+", "B".

'SA' denotes shortage of attendance (as per clause 10.3) and hence prevention from writing the end semester examinations. 'SA' will appear only in the result sheet.

"RA" denotes that the student has failed to pass in that course. "W" denotes **withdrawal** from the exam for the particular course. The grades RA and W will figure both in Marks Sheet as well as in Result Sheet). In both cases the student has to earn Continuous Assessment marks and appear for the End Semester Examinations.

If the grade W is given to course, the attendance requirement need not be satisfied.

If the grade RA is given to a core **theory course**, the attendance requirement need not be satisfied, but if the grade RA is given to a **Laboratory Course/ Project work / Seminar and any other EEC course**, the attendance requirements (vide clause 10) should be satisfied.

**15.2** The grades O, A+, A, B+, B obtained for the one credit course shall figure in the Mark sheet under the title '**Value Added Courses**'. The Courses for which the grades are RA, SA **will not figure in the mark sheet.**

### **15.3 GRADE SHEET**

After results are declared, Grade Sheets will be issued to each student which will contain the following details:

- The college in which the candidate has studied.
- The list of courses enrolled during the semester and the grades scored.
- The Grade Point Average (GPA) for the semester and
- The Cumulative Grade Point Average (CGPA) of all courses enrolled from first semester onwards.

GPA for a semester is the ratio of the sum of the products of the number of credits for courses acquired and the corresponding points to the sum of the number of credits for the courses acquired in the semester. CGPA will be calculated in a similar manner, considering all the courses registered from first semester. RA grades will be excluded for calculating GPA and CGPA.

$$\text{GPA / CGPA} = \frac{\sum_{i=1}^n C_i GP_i}{\sum_{i=1}^n C_i}$$

where

$C_i$  is the number of credits assigned to the course

$GP_i$  is the Grade point corresponding to the grade obtained for each Course

$n$  is number of all Courses successfully cleared during the particular semester in the case of GPA and during all the semesters in the case of CGPA.

## 16 ELIGIBILITY FOR THE AWARD OF THE DEGREE

- 16.1 A student shall be declared to be eligible for the award of the PG Degree (M.E./ M.Tech., M.C.A., M.B.A.) provided the student has
- i. Successfully gained the required number of total credits as specified in the curriculum corresponding to the student's programme within the stipulated time.
  - ii. **a. M.E./ M.Tech., M.B.A.(Full Time)**  
Successfully completed the course requirements, appeared for the End-Semester examinations and passed all the subjects prescribed in all the 4 semesters within a maximum period of 4 years reckoned from the commencement of the first semester to which the candidate was admitted.
  - b. M.E./ M.Tech., M.B.A.(Part Time) and M.C.A.(Full Time)**  
Successfully completed the course requirements, appeared for the End-Semester examinations and passed all the subjects prescribed in all the 6 semesters within a maximum period of 6 years reckoned from the commencement of the first semester to which the candidate was admitted.
  - iii. Successfully passed any additional courses prescribed by the Director, Academic Courses whenever readmitted under regulations other than R-2017 (vide clause 19.3)
  - iv. No disciplinary action pending against the student.
  - v. The award of Degree must have been approved by the Syndicate of the University.

## 17 CLASSIFICATION OF THE DEGREE AWARDED

### 17.1 FIRST CLASS WITH DISTINCTION:


A Student who satisfies the following conditions shall be declared to have passed the examination in **First class with Distinction**:

#### **M.E. / M.Tech. M.B.A.(Full Time)**

- Should have passed the examination in all the courses of all the four semesters in the student's First Appearance within **three** years, which includes authorised break of study of one year (if availed). Withdrawal from examination (vide Clause 18) will not be considered as an appearance.
- Should have secured a CGPA of not less than **8.50**.
- Should NOT have been prevented from writing end Semester examination due to lack of attendance in any of the courses.

#### **M.E. / M.Tech. M.B.A.(Part Time) and M.C.A (Full Time)**

- Should have passed the examination in all the courses of all the six semesters in the student's First Appearance within **four** years, which includes authorised break of study of one year (if availed). Withdrawal from examination (vide Clause 18) will not be considered as an appearance.
- Should have secured a CGPA of not less than **8.50**.
- Should NOT have been prevented from writing end Semester examination due to lack of attendance in any of the courses.

  
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## 17.2 FIRST CLASS:

A student who satisfies the following conditions shall be declared to have passed the examination in **First class**:

### **M.E. / M.Tech. M.B.A.(Full Time)**

- Should have passed the examination in all the courses of all four semesters **within three years** , which includes one year of authorized break of study (if availed) or prevention from writing the End Semester Examination due to lack of attendance (if applicable).
- Should have secured a CGPA of not less than **7.00**.

### **M.E. / M.Tech. M.B.A. (Part Time) and M.C.A (Full Time)**

- Should have passed the examination in all the courses of all six semesters **within four years** , which includes one year of authorized break of study (if availed) or prevention from writing the End Semester Examination due to lack of attendance (if applicable).
- Should have secured a CGPA of not less than **7.00**.

## 17.3 SECOND CLASS:

All other students (not covered in clauses 17.1 and 17.2) who qualify for the award of the degree (vide Clause 16.1) shall be declared to have passed the examination in **Second Class**.

17.4 A student who is absent in End Semester Examination in a course / project work after having registered for the same shall be considered to have appeared in that examination (except approved withdrawal from end semester examinations as per clause 18) for the purpose of classification.

## 17.5 Photocopy / Revaluation

A candidate can apply for photocopy of his/her semester examination answer paper in a theory course, within 2 weeks from the declaration of results, on payment of a prescribed fee through proper application to the Controller of Examinations through the Head of Institutions. The answer script is to be valued and justified by a faculty member, who handled the subject and recommend for revaluation with breakup of marks for each question. Based on the recommendation, the candidate can register for the revaluation through proper application to the Controller of Examinations. The Controller of Examinations will arrange for the revaluation and the results will be intimated to the candidate concerned through the Head of the Institutions. Revaluation is not permitted for practical courses and for project work.

A candidate can apply for revaluation of answer scripts for not exceeding 5 subjects at a time.

## 17.6 Review

Candidates not satisfied with Revaluation can apply for Review of his/ her examination answer paper in a theory course, within the prescribed date on payment of a prescribed fee through proper application to Controller of Examination through the Head of the Institution.

Candidates applying for Revaluation only are eligible to apply for Review.

## 18 PROVISION FOR WITHDRAWAL FROM EXAMINATION:

18.1 A student may, for valid reasons, (medically unfit / unexpected family situations / sports approved by Chairman, sports board and HOD) be granted permission to withdraw from appearing for the end semester examination in any course or courses in **ANY ONE** of the semester examinations during the entire duration of the degree programme. The application shall be sent to Director, Student Affairs through the Head of the Institutions with required documents.

- 18.2 Withdrawal application is valid if the student is otherwise eligible to write the examination (Clause 10) and if it is made within TEN days prior to the commencement of the examination in that course or courses and recommended by the Head of the Institution and approved by the Controller of Examinations.
- 18.2.1 Notwithstanding the requirement of mandatory 10 days notice, applications for withdrawal for special cases under extraordinary conditions will be considered on the merit of the case.
- 18.3 In case of withdrawal from a course / courses (Clause 12) the course will figure both in Marks Sheet as well as in Result Sheet. **Withdrawal essentially requires the student to register for the course/courses** The student has to register for the course, fulfill the attendance requirements (vide clause 10), earn continuous assessment marks and attend the end semester examination. However, withdrawal shall not be construed as an appearance for the eligibility of a candidate for First Class with Distinction.
- 18.4 Withdrawal is permitted for the end semester examinations in the final semester only if the period of study the student concerned does not exceed 3 years as per clause 17.1.

## 19 AUTHORIZED BREAK OF STUDY FROM A PROGRAMME

- 19.1 A student is permitted to go on break of study for a maximum period of one year as a single spell.
- 19.2 Break of Study shall be granted only once for valid reasons for a maximum of one year during the entire period of study of the degree programme. However, in extraordinary situation the candidate may apply for additional break of study not exceeding another one year by paying prescribed fee for break of study. If a candidate intends to temporarily discontinue the programme in the middle of the semester for valid reasons, and to rejoin the programme in a subsequent year, permission may be granted based on the merits of the case provided he / she applies to the Director, Student Affairs in advance, but not later than the last date for registering for the end semester examination of the semester in question, through the Head of the Institution stating the reasons therefore and the probable date of rejoining the programme.
- 19.3 The candidates permitted to rejoin the programme after break of study / prevention due to lack of attendance, shall be governed by the Curriculum and Regulations in force at the time of rejoining. The students rejoining in new Regulations shall apply to the Director, Academic Courses in the prescribed format through Head of the Institution at the beginning of the readmitted semester itself for prescribing additional courses, if any, from any semester of the regulations in-force, so as to bridge the curriculum in-force and the old curriculum.
- 19.4 The authorized break of study would not be counted towards the duration specified for passing all the courses for the purpose of classification (vide Clause 17.1).
- 19.5 The total period for completion of the Programme reckoned from, the commencement of the first semester to which the candidate was admitted shall not exceed the maximum period specified in clause 4.1 irrespective of the period of break of study in order that he/she may be eligible for the award of the degree.
- 19.6 If any student is prevented for want of required attendance, the period of prevention shall not be considered as authorized 'Break of Study' (Clause 19.1)

## 20 DISCIPLINE


- 20.1 Every student is required to observe disciplined and decorous behavior both inside and outside the college and not to indulge in any activity which will tend to bring down the prestige of the University / College. The Head of Institution shall constitute a disciplinary committee consisting of Head of Institution, Two Heads of Department of which one should be from the faculty of the student, to enquire into acts of indiscipline and notify the University about the disciplinary action

recommended for approval. In case of any serious disciplinary action which leads to suspension or dismissal, then a committee shall be constituted including one representative from Anna University, Chennai. In this regard, the member will be nominated by the University on getting information from the Head of the Institution.

- 20.2 If a student indulges in malpractice in any of the University / internal examination he / she shall be liable for punitive action as prescribed by the University from time to time.

**21 REVISION OF REGULATIONS, CURRICULUM AND SYLLABI**

The University may from time to time revise, amend or change the Regulations, Curriculum, Syllabus and scheme of examinations through the Academic Council with the approval of Syndicate.

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ANNA UNIVERSITY, CHENNAI  
 AFFILIATED INSTITUTIONS  
 B.E. BIOMEDICAL ENGINEERING  
 REGULATIONS – 2017  
 CHOICE BASED CREDIT SYSTEM  
 I - VIII SEMESTERS CURRICULA AND SYLLABI

SEMESTER I

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
<b>PRACTICALS</b>								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
<b>TOTAL</b>				<b>31</b>	<b>19</b>	<b>0</b>	<b>12</b>	<b>25</b>

SEMESTER II

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8253	Physics for Electronics Engineering	BS	3	3	0	0	3
4.	BM8251	Engineering Mechanics for Biomedical Engineers	ES	3	3	0	0	3
5.	BM8201	Fundamentals of Bio Chemistry	PC	3	3	0	0	3
6.	EC8251	Circuit Analysis	PC	4	4	0	0	4
<b>PRACTICALS</b>								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	BM8211	Bio Chemistry Laboratory	PC	4	0	0	4	2
<b>TOTAL</b>				<b>29</b>	<b>21</b>	<b>0</b>	<b>8</b>	<b>25</b>

  
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**SEMESTER III**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MA8352	Linear Algebra and Partial Differential Equations	BS	4	4	0	0	4
2.	EC8352	Signals and Systems	PC	4	4	0	0	4
3.	BM8351	Anatomy and Human Physiology	PC	3	3	0	0	3
4.	BM8301	Sensors and Measurements	PC	4	2	0	2	3
5.	EC8353	Electron Devices and Circuits	PC	3	3	0	0	3
6.	BM8302	Pathology and Microbiology	PC	3	3	0	0	3
<b>PRACTICALS</b>								
7.	BM8311	Pathology and Microbiology Laboratory	PC	4	0	0	4	2
8.	BM8312	Devices and Circuits Laboratory	PC	4	0	0	4	2
9.	BM8313	Human Physiology Laboratory	PC	2	0	0	2	1
<b>TOTAL</b>				<b>31</b>	<b>19</b>	<b>0</b>	<b>12</b>	<b>25</b>

**SEMESTER IV**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MA8391	Probability and Statistics	BS	4	4	0	0	4
2.	BM8401	Medical Physics	PC	3	3	0	0	3
3.	EE8452	Basics of Electrical Engineering	ES	3	3	0	0	3
4.	EC8453	Linear Integrated Circuits	PC	3	3	0	0	3
5.	EC8393	Fundamentals of Data Structures In C	ES	3	3	0	0	3
6.	EC8392	Digital Electronics	PC	3	3	0	0	3
<b>PRACTICALS</b>								
7.	EC8381	Fundamentals of Data Structures In C Laboratory	ES	4	0	0	4	2
8.	BM8411	Integrated Circuits Laboratory	PC	4	0	0	4	2
<b>TOTAL</b>				<b>27</b>	<b>19</b>	<b>0</b>	<b>8</b>	<b>23</b>

  
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**SEMESTER V**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	EC8394	Analog and Digital Communication	PC	3	3	0	0	3
2.	BM8501	Biocontrol Systems	PC	4	4	0	0	4
3.	BM8502	Biomedical Instrumentation	PC	3	3	0	0	3
4.	EC8553	Discrete-Time Signal Processing	PC	4	4	0	0	4
5.		Professional Elective - I	PE	3	3	0	0	3
6.		Open Elective -I	OE	3	3	0	0	3
<b>PRACTICALS</b>								
7.	EC8562	Digital Signal Processing Laboratory	PC	4	0	0	4	2
8.	BM8511	Biomedical Instrumentation Laboratory	PC	4	0	0	4	2
9.	HS8381	Interpersonal Skills/Listening & Speaking	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>30</b>	<b>20</b>	<b>0</b>	<b>10</b>	<b>25</b>

**SEMESTER VI**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
2.	BM8601	Diagnostic and Therapeutic Equipment - I	PC	3	3	0	0	3
3.	BM8651	Biomechanics	PC	3	3	0	0	3
4.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
5.	MD8091	Hospital Management	PC	3	3	0	0	3
6.		Professional Elective - II	PE	3	3	0	0	3
<b>PRACTICALS</b>								
7.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
8.	BM8611	Diagnostic and Therapeutic Equipment Laboratory	PC	4	0	0	4	2
9.	BM8612	Mini Project	EEC	2	0	0	2	1
10.	HS8581	Professional Communication	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>30</b>	<b>18</b>	<b>0</b>	<b>12</b>	<b>24</b>

  
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**SEMESTER VII**

SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	BM8701	Diagnostic and Therapeutic Equipment - II	PC	3	3	0	0	3
2.	EC8093	Digital Image Processing	PC	3	3	0	0	3
3.	BM8702	Radiological Equipments	PC	3	3	0	0	3
4.	BM8703	Rehabilitation Engineering	PC	3	3	0	0	3
5.		Professional Elective III	PE	3	3	0	0	3
6.		Open Elective -II	OE	3	3	0	0	3
<b>PRACTICALS</b>								
7.	EC8762	Digital Image Processing Laboratory	PC	4	0	0	4	2
8.	MD8751	Hospital Training	EEC	4	0	0	4	2
<b>TOTAL</b>				<b>26</b>	<b>18</b>	<b>0</b>	<b>8</b>	<b>22</b>

**SEMESTER VIII**

SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.		Professional Elective IV	PE	3	3	0	0	3
2.		Professional Elective V	PE	3	3	0	0	3
<b>PRACTICALS</b>								
3.	BM8811	Project Work	EEC	20	0	0	20	10
<b>TOTAL</b>				<b>26</b>	<b>6</b>	<b>0</b>	<b>20</b>	<b>16</b>

**TOTAL NO. OF CREDITS:185**

  
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**HUMANITIES AND SOCIAL SCIENCES (HS)**


SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	HS8251	Technical English	HS	4	4	0	0	4
3.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3

**BASIC SCIENCES (BS)**

SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA8151	Engineering Mathematics I	BS	4	4	0	0	4
2.	PH8151	Engineering Physics	BS	3	3	0	0	3
3.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
4.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
5.	MA8251	Engineering Mathematics II	BS	4	4	0	0	4
6.	PH8253	Physics for Electronics Engineering	BS	3	3	0	0	3
7.	MA8352	Linear Algebra and Partial Differential Equations	BS	4	4	0	0	4
8.	MA8391	Probability and Statistics	BS	4	4	0	0	4

**ENGINEERING SCIENCES (ES)**

SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
2.	GE8152	Engineering Graphics	ES	6	2	0	4	4
3.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
4.	BM8251	Engineering Mechanics for Biomedical Engineers	ES	3	3	0	0	3
5.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
6.	EE8452	Basics of Electrical Engineering	ES	3	3	0	0	3
7.	EC8393	Fundamentals of Data Structures In C	ES	3	3	0	0	3
8.	EC8381	Fundamentals of Data Structures In C Laboratory	ES	4	0	0	4	2

  
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**PROFESSIONAL CORE (PC)**

Sl. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	BM8201	Fundamentals of Bio Chemistry	PC	3	3	0	0	3
2.	EC8251	Circuit Analysis	PC	4	4	0	0	4
3.	BM8211	Bio Chemistry Laboratory	PC	4	0	0	4	2
4.	EC8352	Signals and Systems	PC	4	4	0	0	4
5.	BM8351	Anatomy and Human Physiology	PC	3	3	0	0	3
6.	BM8301	Sensors and Measurements	PC	4	2	0	2	3
7.	EC8353	Electron Devices and Circuits	PC	3	3	0	0	3
8.	BM8302	Pathology and Microbiology	PC	3	3	0	0	3
9.	BM8311	Pathology and Microbiology Laboratory	PC	4	0	0	4	2
10.	BM8312	Devices and Circuits Laboratory	PC	4	0	0	4	2
11.	BM8313	Human Physiology Laboratory	PC	2	0	0	2	1
12.	BM8401	Medical physics	PC	3	3	0	0	3
13.	EC8453	Linear Integrated Circuits	PC	3	3	0	0	3
14.	EC8392	Digital Electronics	PC	3	3	0	0	3
15.	BM8411	Integrated Circuits Laboratory	PC	4	0	0	4	2
16.	EC8394	Analog and Digital Communication	PC	3	3	0	0	3
17.	BM8501	Bio Control Systems	PC	4	4	0	0	4
18.	BM8502	Biomedical Instrumentation	PC	3	3	0	0	3
19.	EC8553	Discrete-Time Signal Processing	PC	4	4	0	0	4
20.	MD8091	Hospital Management	PC	3	3	0	0	3
21.	EC8562	Digital Signal Processing Laboratory	PC	4	0	0	4	2
22.	BM8511	Biomedical Instrumentation Laboratory	PC	4	0	0	4	2
23.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
24.	BM8601	Diagnostic and Therapeutic Equipment - I	PC	3	3	0	0	3
25.	BM8651	Biomechanics	PC	3	3	0	0	3
26.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
27.	BM8611	Diagnostic and Therapeutic Equipment Laboratory	PC	4	0	0	4	2
28.	BM8701	Diagnostic and Therapeutic Equipment - II	PC	3	3	0	0	3
29.	EC8093	Digital Image Processing	PC	3	3	0	0	3
30.	BM8702	Radiological Equipments	PC	3	3	0	0	3
31.	BM8703	Rehabilitation Engineering	PC	3	3	0	0	3
32.	EC8762	Digital Image Processing Laboratory	PC	4	0	0	4	2

**PROFESSIONAL ELECTIVES (PE)  
SEMESTER V  
ELECTIVE I**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	BM8071	Bio MEMS	PE	3	3	0	0	3
2.	EC8075	Nano Technology and Applications	PE	3	3	0	0	3
3.	BM8072	Biomaterials	PE	3	3	0	0	3
4.	BM8001	Medical Optics	PE	3	3	0	0	3
5.	GE8074	Human Rights	PE	3	3	0	0	3
6.	GE8077	Total Quality Management	PE	3	3	0	0	3

**SEMESTER VI  
ELECTIVE II**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	BM8074	Biosignal Processing	PE	3	3	0	0	3
2.	BM8002	Artificial organs and Implants	PE	3	3	0	0	3
3.	MD8071	Telehealth Technology	PE	3	3	0	0	3
4.	BM8003	Biofluids and Dynamics	PE	3	3	0	0	3
5.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3

**SEMESTER VII  
ELECTIVE III**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MD8752	Physiological Modeling	PE	3	3	0	0	3
2.	BM8004	Robotics in Medicine	PE	3	3	0	0	3
3.	CS8081	Internet of Things	PE	3	3	0	0	3
4.	BM8078	Soft Computing Techniques	PE	3	3	0	0	3
5.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3
6.	GE8071	Disaster Management	PE	3	3	0	0	3

**SEMESTER VIII  
ELECTIVE IV**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	BM8079	Virtual Reality and Augmented Reality	PE	3	3	0	0	3
2.	BM8077	Hospital Waste Management	PE	3	3	0	0	3
3.	BM8005	Neural Engineering	PE	3	3	0	0	3
4.	BM8073	Biometric Systems	PE	3	3	0	0	3
5.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3


**SEMESTER VIII  
ELECTIVE - V**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	BM8076	Electrical Safety and Quality Assurance	PE	3	3	0	0	3
2.	BM8006	Ergonomics	PE	3	3	0	0	3
3.	BM8075	Brain Computer Interface and its Applications	PE	3	3	0	0	3
4.	EC8791	Embedded and Real time Systems	PE	3	3	0	0	3
5.	GE8073	Fundamentals of Nano Science	PE	3	3	0	0	3

\*Professional Electives are grouped according to elective number as was done previously.


**EMPLOYABILITY ENHANCEMENT COURSES (EEC)**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8381	Interpersonal Skills/Listening & Speaking	EEC	2	0	0	2	1
2.	BM8612	Mini Project	EEC	2	0	0	2	1
3.	HS8581	Professional Communication	EEC	2	0	0	2	1
4.	MD8751	Hospital Training	EEC	4	0	0	4	2
5.	BM8811	Project Work	EEC	20	0	0	20	10

  
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### SUMMARY

S.NO.	SUBJECT AREA	CREDITS AS PER SEMESTER								CREDITS TOTAL	Percentage
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	4	4				3			11	6%
2.	BS	12	7	4	4					27	14.67%
3.	ES	9	5		8					22	12%
4.	PC		9	21	11	18	16	14		89	48.36%
5.	PE					3	3	3	6	15	8.15%
6.	OE					3		3		6	3.2%
7.	EEC					1	2	2	10	15	7.6%
	<b>Total</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>23</b>	<b>25</b>	<b>24</b>	<b>22</b>	<b>16</b>	<b>185</b>	
8.	<b>Non Credit / Mandatory</b>										

  
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**R - 2008**

I SEMESTER CURRICULA AND SYLLABI

(Common to all B.E. / B.Tech Programmes except B.E. Marine Engineering)**SEMESTER I**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS2111	<u>Technical English - I</u>	3	1	0	4
2.	MA2111	<u>Mathematics - I</u>	3	1	0	4
3.	PH2111	<u>Engineering Physics - I</u>	3	0	0	3
4.	CY2111	<u>Engineering Chemistry - I</u>	3	0	0	3
5.	GE2111	<u>Engineering Graphics</u>	2	3	0	5
6.	GE2112	<u>Fundamentals of Computing and Programming</u>	3	0	0	3
<b>PRACTICAL</b>						
7.	GE2115	<u>Computer Practice Laboratory -I</u>	0	0	3	2
8.	GE2116	<u>Engineering Practices Laboratory</u>	0	0	3	2
9.		* <u>Physics &amp; Chemistry Laboratory I</u>	0	0	3	-
<b>TOTAL : 26 CREDITS</b>						

\* Laboratory classes on alternate weeks for Physics and Chemistry. The lab examinations will be held only in the second semester (including the first semester experiments also).

  
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R-2008

B.E. COMPUTER SCIENCE AND ENGINEERING

II - VIII SEMESTERS CURRICULA AND SYLLABI

SEMESTER II

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS2161	<u>Technical English – II*</u>	3	1	0	4
2.	MA2161	<u>Mathematics – II*</u>	3	1	0	4
3.	PH2161	<u>Engineering Physics – II*</u>	3	0	0	3
4.	CY2161	<u>Engineering Chemistry – II*</u>	3	0	0	3
5. a	ME2151	<u>Engineering Mechanics</u> (For non-circuit branches)	3	1	0	4
5. b	EE2151	<u>Circuit Theory</u> (For branches under Electrical Faculty)	3	1	0	4
5. c	EC2151	<u>Electric Circuits and Electron Devices</u> (For branches under I & C Faculty)	3	1	0	4
6. a	GE2151	<u>Basic Electrical &amp; Electronics Engineering</u> (For non-circuit branches)	4	0	0	4
6. b	GE2152	<u>Basic Civil &amp; Mechanical Engineering</u> (For circuit branches)	4	0	0	4
<b>PRACTICAL</b>						
7.	GE2155	<u>Computer Practice Laboratory-II*</u>	0	1	2	2
8.	GS2165	<u>Physics &amp; Chemistry Laboratory - II*</u>	0	0	3	2

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9. a	ME2155	<u>Computer Aided Drafting and Modeling Laboratory</u> (For non-circuits branches)	0	1	2	2
9. b	EE2155	<u>Electrical Circuits Laboratory</u> (For branches under Electrical Faculty)	0	0	3	2
9. c	EC2155	<u>Circuits and Devices Laboratory</u> (For branches under I & C Faculty)	0	0	3	2
<b>TOTAL : 28 CREDITS</b>						
10.	-	<u>English Language Laboratory</u> *	0	0	2	-

\* Common to all B.E. / B.Tech. Programmes


+ Offering English Language Laboratory as an additional subject (with no marks) during 2<sup>nd</sup> semester may be decided by the respective Colleges affiliated to Anna University Chennai.

#### **A. CIRCUIT BRANCHES**

- I Faculty of Electrical Engineering**
1. B.E. Electrical and Electronics Engineering
  2. B.E. Electronics and Instrumentation Engineering
  3. B.E. Instrumentation and Control Engineering
- II Faculty of Information and Communication Engineering**
1. B.E. Computer Science and Engineering
  2. B.E. Electronics and Communication Engineering
  3. B.E. Bio Medical Engineering
  4. B.Tech. Information Technology

#### **B. NON – CIRCUIT BRANCHES**

- I Faculty of Civil Engineering**
1. B.E. Civil Engineering
- II Faculty of Mechanical Engineering**
1. B.E. Aeronautical Engineering
  2. B.E. Automobile Engineering
  3. B.E. Marine Engineering
  4. B.E. Mechanical Engineering
  5. B.E. Production Engineering

  
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**III Faculty of Technology**

1. B.Tech. Chemical Engineering
2. B.Tech. Biotechnology
3. B.Tech. Polymer Technology
4. B.Tech. Textile Technology
5. B.Tech. Textile Technology (Fashion Technology)
6. B.Tech. Petroleum Engineering
7. B.Tech. Plastics Technology

**SEMESTER III**

(Applicable to the students admitted from the Academic year 2008–2009 onwards)


Code No.	Course Title	L	T	P	C
<b>THEORY</b>					
MA 2211	<u>Transforms and Partial Differential Equations</u>	3	1	0	4
CS 2201	<u>Data Structures</u>	3	0	0	3
CS 2202	<u>Digital Principles and Systems Design</u>	3	1	0	4
CS 2203	<u>Object Oriented Programming</u>	3	0	0	3
CS 2204	<u>Analog and Digital Communication</u>	3	1	0	4
GE 2021	<u>Environmental Science and Engineering</u>	3	0	0	3
<b>PRACTICAL</b>					
CS 2207	<u>Digital Lab</u>	0	0	3	2
CS 2208	<u>Data Structures Lab</u>	0	0	3	2
CS 2209	<u>Object Oriented Programming Lab</u>	0	0	3	2
<b>Total</b>		<b>18</b>	<b>3</b>	<b>9</b>	<b>27</b>

**SEMESTER IV**

(Applicable to the students admitted from the Academic year 2008–2009 onwards)

Code No.	Course Title	L	T	P	C
<b>THEORY</b>					
MA 2262	<u>Probability and Queueing Theory</u>	3	1	0	4
CS 2251	<u>Design and Analysis of Algorithms</u>	3	1	0	4
CS 2252	<u>Microprocessors and Microcontrollers</u>	3	0	0	3
CS 2253	<u>Computer Organization and Architecture</u>	3	0	0	3
CS 2254	<u>Operating Systems</u>	3	0	0	3
CS 2255	<u>Database Management Systems</u>	3	0	0	3
<b>PRACTICAL</b>					
CS 2257	<u>Operating Systems Lab</u>	0	0	3	2
CS 2258	<u>Data Base Management Systems Lab</u>	0	0	3	2
CS 2259	<u>Microprocessors Lab</u>	0	0	3	2
<b>Total</b>		<b>18</b>	<b>2</b>	<b>9</b>	<b>26</b>

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## SEMESTER V


(Applicable to the students admitted from the Academic year 2008–2009 onwards)

CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
CS2301	<u>Software Engineering</u>	3	0	0	3
MA2265	<u>Discrete Mathematics</u>	3	1	0	4
CS2302	<u>Computer Networks</u>	3	0	0	3
CS2303	<u>Theory of Computation</u>	3	1	0	4
CS2304	<u>System Software</u>	3	1	0	4
CS2305	<u>Programming Paradigms</u>	3	0	0	3
<b>PRACTICAL</b>					
CS2307	<u>Network Lab</u>	0	0	3	2
CS2308	<u>System Software Lab</u>	0	0	3	2
CS2309	<u>Java Lab</u>	0	0	3	2
<b>TOTAL</b>		<b>18</b>	<b>3</b>	<b>9</b>	<b>27</b>

## SEMESTER VI

(Applicable to the students admitted from the Academic year 2008–2009 onwards)

CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
CS2351	<u>Artificial Intelligence</u>	3	0	0	3
CS2352	<u>Principles of Compiler Design</u>	3	0	2	4
CS2353	<u>Object Oriented Analysis and Design</u>	3	0	0	3
CS2354	<u>Advanced Computer Architecture</u>	3	0	0	3
	Elective – I	3	0	0	3
	Elective – II	3	0	0	3
<b>PRACTICAL</b>					
CS2357	<u>Object Oriented Analysis and Design Lab</u>	0	0	3	2
GE2321	<u>Communication Skills Lab</u>	0	0	4	2
CS2358	<u>Internet Programming Lab</u>	1	0	3	2
<b>TOTAL</b>		<b>19</b>	<b>0</b>	<b>12</b>	<b>25</b>

  
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## SEMESTER VII

(Applicable to the students admitted from the Academic year 2008–2009 onwards)

Code No.	Course Title	L	T	P	C
<b>THEORY</b>					
MG2452	<u>Engineering Economics &amp; Financial Accounting</u>	3	0	0	3
CS2401	<u>Computer Graphics</u>	3	0	0	3
CS2402	<u>Mobile and Pervasive Computing</u>	3	0	0	3
CS2403	<u>Digital Signal Processing</u>	3	0	0	3
	Elective III	3	0	0	3
	Elective IV	3	0	0	3
<b>PRACTICAL</b>					
CS2405	<u>Computer Graphics Lab</u>	0	0	3	2
CS2406	<u>Open Source Lab</u>	0	0	3	2
<b>TOTAL</b>		<b>18</b>	<b>0</b>	<b>6</b>	<b>22</b>

## SEMESTER VIII

(Applicable to the students admitted from the Academic year 2008–2009 onwards)

Code No.	Course Title	L	T	P	C
<b>THEORY</b>					
	Elective V	3	0	0	3
	Elective VI	3	0	0	3
<b>PRACTICAL</b>					
CS2451	Project Work	0	0	12	6
<b>TOTAL</b>		<b>6</b>	<b>0</b>	<b>12</b>	<b>12</b>

## LIST OF ELECTIVES SEMESTER VI – Elective I

Code No.	Course Title	L	T	P	C
CS2021	<u>Multicore Programming</u>	3	0	0	3
CS2022	<u>Visual Programming</u>	3	0	0	3
CS2023	<u>Advanced JAVA Programming</u>	3	0	0	3
CS2024	<u>Parallel Programming</u>	3	0	0	3
IT2353	<u>Web Technology</u>	3	0	0	3

**SEMESTER VI – Elective II**

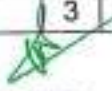
Code No.	Course Title	L	T	P	C
CS2028	<u>UNIX Internals</u>	3	0	0	3
MA2264	<u>Numerical Methods</u>	3	1	0	4
IT2354	<u>Embedded Systems</u>	3	0	0	3
CS2029	<u>Advanced Database Technology</u>	3	0	0	3
IT2043	<u>Knowledge Management</u>	3	0	0	3
CS2030	<u>High Performance Microprocessors</u>	3	0	0	3

**SEMESTER VII – Elective III**

Code No.	Course Title	L	T	P	C
MG2453	<u>Resource Management Techniques</u>	3	0	0	3
CS2032	<u>Data Warehousing and Data Mining</u>	3	0	0	3
CS2033	<u>Real Time Systems</u>	3	0	0	3
CS2034	<u>TCP/IP Design and Implementation</u>	3	0	0	3
CS2035	<u>Natural Language Processing</u>	3	0	0	3
IT2024	<u>User Interface Design</u>	3	0	0	3
IT2401	<u>Service Oriented Architecture</u>	3	0	0	3

**SEMESTER VII – Elective IV**

Code No.	Course Title	L	T	P	C
CS2040	<u>Advanced Operating Systems</u>	3	0	0	3
CS2041	<u>C# and .NET Framework</u>	3	0	0	3
IT2352	<u>Cryptography and Network Security</u>	3	0	0	3
IT2061	<u>Systems Modeling &amp; Simulation</u>	3	0	0	3
GE2022	<u>Total Quality Management</u>	3	0	0	3
IT2351	<u>Network Programming and Management</u>	3	0	0	3
IT2032	<u>Software Testing</u>	3	0	0	3
CS2045	<u>Wireless Networks</u>	3	0	0	3

  
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**SEMESTER VIII – Elective V**

Code No.	Course Title	L	T	P	C
GE2071	<u>Intellectual Property Rights</u>	3	0	0	3
CS2051	<u>Graph Theory</u>	3	0	0	3
IT2042	<u>Information Security</u>	3	0	0	3
CS2053	<u>Soft Computing</u>	3	0	0	3
IT2023	<u>Digital Image Processing</u>	3	0	0	3
CS2055	<u>Software Quality Assurance</u>	3	0	0	3
CS2056	<u>Distributed Systems</u>	3	0	0	3
CS2057	<u>Knowledge Based Decision Support Systems</u>	3	0	0	3
GE2025	<u>Professional Ethics in Engineering</u>	3	0	0	3
GE2023	<u>Fundamental of Nano Science</u>	3	0	0	3

**SEMESTER VIII – Elective VI**

Code No.	Course Title	L	T	P	C
GE2072	<u>Indian Constitution and Society</u>	3	0	0	3
CS2060	<u>High Speed Networks</u>	3	0	0	3
CS2061	<u>Robotics</u>	3	0	0	3
IT2403	<u>Software Project Management</u>	3	0	0	3
CS2062	<u>Quantum Computing</u>	3	0	0	3
CS2063	<u>Grid Computing</u>	3	0	0	3
CS2064	<u>Agent Based Intelligent Systems</u>	3	0	0	3
IT2033	<u>Bio Informatics</u>	3	0	0	3
IT2064	<u>Speech Processing</u>	3	0	0	3

  
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B.E. COMPUTER SCIENCE AND ENGINEERING  
I TO VIII SEMESTER CURRICULUM AND SYLLABUS

## SEMESTER I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS6151	<u>Technical English – I</u>	3	1	0	4
2.	MA6151	<u>Mathematics – I</u>	3	1	0	4
3.	PH6151	<u>Engineering Physics – I</u>	3	0	0	3
4.	CY6151	<u>Engineering Chemistry – I</u>	3	0	0	3
5.	GE6151	<u>Computer Programming</u>	3	0	0	3
6.	GE6152	<u>Engineering Graphics</u>	2	0	3	4
<b>PRACTICALS</b>						
7.	GE6161	<u>Computer Practices Laboratory</u>	0	0	3	2
8.	GE6162	<u>Engineering Practices Laboratory</u>	0	0	3	2
9.	GE6163	<u>Physics and Chemistry Laboratory - I</u>	0	0	2	1
<b>TOTAL</b>			<b>17</b>	<b>2</b>	<b>11</b>	<b>26</b>

## SEMESTER II

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS6251	<u>Technical English – II</u>	3	1	0	4
2.	MA6251	<u>Mathematics – II</u>	3	1	0	4
3.	PH6251	<u>Engineering Physics – II</u>	3	0	0	3
4.	CY6251	<u>Engineering Chemistry – II</u>	3	0	0	3
5.	CS6201	<u>Digital Principles and System Design</u>	3	0	0	3
6.	CS6202	<u>Programming and Data Structures I</u>	3	0	0	3
<b>PRACTICALS</b>						
7.	GE6262	<u>Physics and Chemistry Laboratory - II</u>	0	0	2	1
8.	CS6211	<u>Digital Laboratory</u>	0	0	3	2
9.	CS6212	<u>Programming and Data Structures Laboratory I</u>	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>2</b>	<b>8</b>	<b>25</b>

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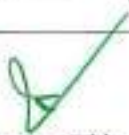
  
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### SEMESTER III

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	MA6351	<u>Transforms and Partial Differential Equations</u>	3	1	0	4
2.	CS6301	<u>Programming and Data Structure II</u>	3	0	0	3
3.	CS6302	<u>Database Management Systems</u>	3	0	0	3
4.	CS6303	<u>Computer Architecture</u>	3	0	0	3
5.	CS6304	<u>Analog and Digital Communication</u>	3	0	0	3
6.	GE6351	<u>Environmental Science and Engineering</u>	3	0	0	3
<b>PRACTICAL</b>						
7.	CS6311	<u>Programming and Data Structure Laboratory II</u>	0	0	3	2
8.	CS6312	<u>Database Management Systems Laboratory</u>	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>1</b>	<b>6</b>	<b>23</b>

### SEMESTER IV

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	MA6453	<u>Probability and Queueing Theory</u>	3	1	0	4
2.	CS6551	<u>Computer Networks</u>	3	0	0	3
3.	CS6401	<u>Operating Systems</u>	3	0	0	3
4.	CS6402	<u>Design and Analysis of Algorithms</u>	3	0	0	3
5.	EC6504	<u>Microprocessor and Microcontroller</u>	3	0	0	3
6.	CS6403	<u>Software Engineering</u>	3	0	0	3
<b>PRACTICAL</b>						
7.	CS6411	<u>Networks Laboratory</u>	0	0	3	2
8.	CS6412	<u>Microprocessor and Microcontroller Laboratory</u>	0	0	3	2
9.	CS6413	<u>Operating Systems Laboratory</u>	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>1</b>	<b>9</b>	<b>25</b>


  
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**SEMESTER V**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	MA6566	<u>Discrete Mathematics</u>	3	1	0	4
2.	CS6501	<u>Internet Programming</u>	3	1	0	4
3.	CS6502	<u>Object Oriented Analysis and Design</u>	3	0	0	3
4.	CS6503	<u>Theory of Computation</u>	3	0	0	3
5.	CS6504	<u>Computer Graphics</u>	3	0	0	3
<b>PRACTICAL</b>						
6.	CS6511	<u>Case Tools Laboratory</u>	0	0	3	2
7.	CS6512	<u>Internet Programming Laboratory</u>	0	0	3	2
8.	CS6513	<u>Computer Graphics Laboratory</u>	0	0	3	2
<b>TOTAL</b>			<b>15</b>	<b>2</b>	<b>9</b>	<b>23</b>

**SEMESTER VI**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	CS6601	<u>Distributed Systems</u>	3	0	0	3
2.	IT6601	<u>Mobile Computing</u>	3	0	0	3
3.	CS6660	<u>Compiler Design</u>	3	0	0	3
4.	IT6502	<u>Digital Signal Processing</u>	3	1	0	4
5.	CS6659	<u>Artificial Intelligence</u>	3	0	0	3
6.		Elective I	3	0	0	3
<b>PRACTICAL</b>						
7.	CS6611	<u>Mobile Application Development Laboratory</u>	0	0	3	2
8.	CS6612	<u>Compiler Laboratory</u>	0	0	3	2
9.	GE6674	<u>Communication and Soft Skills - Laboratory Based</u>	0	0	4	2
<b>TOTAL</b>			<b>18</b>	<b>1</b>	<b>10</b>	<b>25</b>

  
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**SEMESTER VII**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	CS6701	<u>Cryptography and Network Security</u>	3	0	0	3
2.	CS6702	<u>Graph Theory and Applications</u>	3	0	0	3
3.	CS6703	<u>Grid and Cloud Computing</u>	3	0	0	3
4.	CS6704	<u>Resource Management Techniques</u>	3	0	0	3
5.		Elective II	3	0	0	3
6.		Elective III	3	0	0	3
<b>PRACTICAL</b>						
7.	CS6711	<u>Security Laboratory</u>	0	0	3	2
8.	CS6712	<u>Grid and Cloud Computing Laboratory</u>	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>0</b>	<b>6</b>	<b>22</b>

**SEMESTER VIII**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	CS6801	<u>Multi – Core Architectures and Programming</u>	3	0	0	3
2.		Elective IV	3	0	0	3
3.		Elective V	3	0	0	3
<b>PRACTICAL</b>						
4.	CS6811	<u>Project Work</u>	0	0	12	6
<b>TOTAL</b>			<b>9</b>	<b>0</b>	<b>12</b>	<b>15</b>


**TOTAL NO. OF CREDITS: 184**

**LIST OF ELECTIVES**

**SEMESTER VI – Elective I**

S.NO.	CODE NO.	COURSE TITLE	L	T	P	C
1.	CS6001	<u>C# and .Net programming</u>	3	0	0	3
2.	GE6757	<u>Total Quality Management</u>	3	0	0	3
3.	IT6702	<u>Data Warehousing and Data Mining</u>	3	0	0	3
4.	CS6002	<u>Network Analysis and Management</u>	3	0	0	3
5.	IT6004	<u>Software Testing</u>	3	0	0	3
6.	GE6084	Human Rights	3	0	0	3

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**SEMESTER VII – Elective II**

S.NO.	CODE NO.	COURSE TITLE	L	T	P	C
7.	CS6003	<u>Ad hoc and Sensor Networks</u>	3	0	0	3
8.	CS6004	<u>Cyber Forensics</u>	3	0	0	3
9.	CS6005	<u>Advanced Database Systems</u>	3	0	0	3
10.	BM6005	<u>Bio Informatics</u>	3	0	0	3
11.	IT6801	<u>Service Oriented Architecture</u>	3	0	0	3

**SEMESTER VII – Elective III**

S.NO	CODE NO.	COURSE TITLE	L	T	P	C
12.	IT6005	<u>Digital Image Processing</u>	3	0	0	3
13.	EC6703	<u>Embedded and Real Time Systems</u>	3	0	0	3
14.	CS6006	<u>Game Programming</u>	3	0	0	3
15.	CS6007	<u>Information Retrieval</u>	3	0	0	3
16.	IT6006	<u>Data Analytics</u>	3	0	0	3

**SEMESTER VIII – Elective IV**

S.NO.	CODE NO.	COURSE TITLE	L	T	P	C
17.	CS6008	<u>Human Computer Interaction</u>	3	0	0	3
18.	CS6009	<u>Nano Computing</u>	3	0	0	3
19.	IT6011	<u>Knowledge Management</u>	3	0	0	3
20.	CS6010	<u>Social Network Analysis</u>	3	0	0	3
21.	CS6013	<u>Foundation Skills in Integrated Product Development</u>	3	0	0	3

**SEMESTER VIII – Elective V**

S.NO.	CODE NO.	COURSE TITLE	L	T	P	C
22.	MG6088	<u>Software Project Management</u>	3	0	0	3
23.	GE6075	<u>Professional Ethics in Engineering</u>	3	0	0	3
24.	CS6011	<u>Natural Language Processing</u>	3	0	0	3
25.	CS6012	<u>Soft Computing</u>	3	0	0	3
26.	GE6083	<u>Disaster Management</u>	3	0	0	3

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**REGULATIONS – 2017**  
**CHOICE BASED CREDIT SYSTEM**  
**I - VIII SEMESTERS CURRICULA AND SYLLABI**

**SEMESTER I**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
<b>PRACTICALS</b>								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
<b>TOTAL</b>				<b>31</b>	<b>19</b>	<b>0</b>	<b>12</b>	<b>25</b>

**SEMESTER II**

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8252	Physics for Information Science	BS	3	3	0	0	3
4.	BE8255	Basic Electrical, Electronics and Measurement Engineering	ES	3	3	0	0	3
5.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
6.	CS8251	Programming in C	PC	3	3	0	0	3
<b>PRACTICALS</b>								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	CS8261	C Programming Laboratory	PC	4	0	0	4	2
<b>TOTAL</b>				<b>28</b>	<b>20</b>	<b>0</b>	<b>8</b>	<b>24</b>

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**SEMESTER III**

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MA8351	Discrete Mathematics	BS	4	4	0	0	4
2.	CS8351	Digital Principles and System Design	ES	4	4	0	0	4
3.	CS8391	Data Structures	PC	3	3	0	0	3
4.	CS8392	Object Oriented Programming	PC	3	3	0	0	3
5.	EC8395	Communication Engineering	ES	3	3	0	0	3
<b>PRACTICALS</b>								
6.	CS8381	Data Structures Laboratory	PC	4	0	0	4	2
7.	CS8383	Object Oriented Programming Laboratory	PC	4	0	0	4	2
8.	CS8382	Digital Systems Laboratory	ES	4	0	0	4	2
9.	HS8381	Interpersonal Skills/Listening & Speaking	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>31</b>	<b>17</b>	<b>0</b>	<b>14</b>	<b>24</b>

**SEMESTER IV**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MA8402	Probability and Queueing Theory	BS	4	4	0	0	4
2.	CS8491	Computer Architecture	PC	3	3	0	0	3
3.	CS8492	Database Management Systems	PC	3	3	0	0	3
4.	CS8451	Design and Analysis of Algorithms	PC	3	3	0	0	3
5.	CS8493	Operating Systems	PC	3	3	0	0	3
6.	CS8494	Software Engineering	PC	3	3	0	0	3
<b>PRACTICALS</b>								
7.	CS8481	Database Management Systems Laboratory	PC	4	0	0	4	2
8.	CS8461	Operating Systems Laboratory	PC	4	0	0	4	2
9.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>29</b>	<b>19</b>	<b>0</b>	<b>10</b>	<b>24</b>

  
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**SEMESTER V**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MA8551	Algebra and Number Theory	BS	4	4	0	0	4
2.	CS8591	Computer Networks	PC	3	3	0	0	3
3.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
4.	CS8501	Theory of Computation	PC	3	3	0	0	3
5.	CS8592	Object Oriented Analysis and Design	PC	3	3	0	0	3
6.		Open Elective I	OE	3	3	0	0	3
<b>PRACTICALS</b>								
7.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
8.	CS8582	Object Oriented Analysis and Design Laboratory	PC	4	0	0	4	2
9.	CS8581	Networks Laboratory	PC	4	0	0	4	2
<b>TOTAL</b>				<b>31</b>	<b>19</b>	<b>0</b>	<b>12</b>	<b>25</b>

**SEMESTER VI**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	CS8651	Internet Programming	PC	3	3	0	0	3
2.	CS8691	Artificial Intelligence	PC	3	3	0	0	3
3.	CS8601	Mobile Computing	PC	3	3	0	0	3
4.	CS8602	Compiler Design	PC	5	3	0	2	4
5.	CS8603	Distributed Systems	PC	3	3	0	0	3
6.		Professional Elective I	PE	3	3	0	0	3
<b>PRACTICALS</b>								
7.	CS8661	Internet Programming Laboratory	PC	4	0	0	4	2
8.	CS8662	Mobile Application Development Laboratory	PC	4	0	0	4	2
9.	CS8611	Mini Project	EEC	2	0	0	2	1
10.	HS8581	Professional Communication	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>32</b>	<b>18</b>	<b>0</b>	<b>14</b>	<b>25</b>

  
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**SEMESTER VII**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MG8591	Principles of Management	HS	3	3	0	0	3
2.	CS8792	Cryptography and Network Security	PC	3	3	0	0	3
3.	CS8791	Cloud Computing	PC	3	3	0	0	3
4.		Open Elective II	OE	3	3	0	0	3
5.		Professional Elective II	PE	3	3	0	0	3
6.		Professional Elective III	PE	3	3	0	0	3
<b>PRACTICALS</b>								
7.	CS8711	Cloud Computing Laboratory	PC	4	0	0	4	2
8.	IT8761	Security Laboratory	PC	4	0	0	4	2
<b>TOTAL</b>				<b>26</b>	<b>18</b>	<b>0</b>	<b>8</b>	<b>22</b>

**SEMESTER VIII**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.		Professional Elective IV	PE	3	3	0	0	3
2.		Professional Elective V	PE	3	3	0	0	3
<b>PRACTICALS</b>								
3.	CS8811	Project Work	EEC	20	0	0	20	10
<b>TOTAL</b>				<b>26</b>	<b>6</b>	<b>0</b>	<b>20</b>	<b>16</b>

**TOTAL NO. OF CREDITS: 185**

  
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**HUMANITIES AND SOCIAL SCIENCES (HS)**

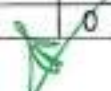
SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	HS8251	Technical English	HS	4	4	0	0	4
3.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
4.	MG8591	Principles of Management	HS	3	3	0	0	3

**BASIC SCIENCES (BS)**

SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA8151	Engineering Mathematics I	BS	4	4	0	0	4
2.	PH8151	Engineering Physics	BS	3	3	0	0	3
3.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
4.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
5.	MA8251	Engineering Mathematics II	BS	4	4	0	0	4
6.	PH8252	Physics for Information Science	BS	3	3	0	0	3
7.	MA8351	Discrete Mathematics	BS	4	4	0	0	4
8.	MA8402	Probability and Queueing Theory	BS	4	4	0	0	4
9.	MA8551	Algebra and Number Theory	BS	4	4	0	0	4


**ENGINEERING SCIENCES (ES)**

SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
2.	GE8152	Engineering Graphics	ES	6	2	0	4	4
3.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
4.	BE8255	Basic Electrical, Electronics and Measurement Engineering	ES	3	3	0	0	3
5.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
6.	CS8351	Digital Principles and System Design	ES	4	4	0	0	4
7.	EC8395	Communication Engineering	ES	3	3	0	0	3
8.	CS8382	Digital Systems Laboratory	ES	4	0	0	4	2

  
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**PROFESSIONAL CORE (PC)**

Sl. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8251	Programming in C	PC	3	3	0	0	3
2.	CS8261	C Programming Laboratory	PC	4	0	0	4	2
3.	CS8391	Data Structures	PC	3	3	0	0	3
4.	CS8392	Object Oriented Programming	PC	3	3	0	0	3
5.	CS8381	Data Structures Laboratory	PC	4	0	0	4	2
6.	CS8383	Object Oriented Programming Laboratory	PC	4	0	0	4	2
7.	CS8491	Computer Architecture	PC	3	3	0	0	3
8.	CS8492	Database Management Systems	PC	3	3	0	0	3
9.	CS8451	Design and Analysis of Algorithms	PC	3	3	0	0	3
10.	CS8493	Operating Systems	PC	3	3	0	0	3
11.	CS8494	Software Engineering	PC	3	3	0	0	3
12.	CS8481	Database Management Systems Laboratory	PC	4	0	0	4	2
13.	CS8461	Operating Systems Laboratory	PC	4	0	0	4	2
14.	CS8591	Computer Networks	PC	3	3	0	0	3
15.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
16.	CS8501	Theory of Computation	PC	3	3	0	0	3
17.	CS8592	Object Oriented Analysis and Design	PC	3	3	0	0	3
18.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
19.	CS8582	Object Oriented Analysis and Design Laboratory	PC	4	0	0	4	2
20.	CS8581	Networks Laboratory	PC	4	0	0	4	2
21.	CS8651	Internet Programming	PC	3	3	0	0	3
22.	CS8691	Artificial Intelligence	PC	3	3	0	0	3
23.	CS8601	Mobile Computing	PC	3	3	0	0	3
24.	CS8602	Compiler Design	PC	5	3	0	2	4
25.	CS8603	Distributed Systems	PC	3	3	0	0	3
26.	CS8661	Internet Programming Laboratory	PC	4	0	0	4	2
27.	CS8662	Mobile Application Development Laboratory	PC	4	0	0	4	2
28.	CS8792	Cryptography and Network Security	PC	3	3	0	0	3
29.	CS8791	Cloud Computing	PC	3	3	0	0	3
30.	CS8711	Cloud Computing Laboratory	PC	4	0	0	4	2
31.	IT8761	Security Laboratory	PC	4	0	0	4	2

  
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**PROFESSIONAL ELECTIVES (PE)**

**SEMESTER VI  
ELECTIVE - I**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8075	Data Warehousing and Data Mining	PE	3	3	0	0	3
2.	IT8076	Software Testing	PE	3	3	0	0	3
3.	IT8072	Embedded Systems	PE	3	3	0	0	3
4.	CS8072	Agile Methodologies	PE	3	3	0	0	3
5.	CS8077	Graph Theory and Applications-	PE	3	3	0	0	3
6.	IT8071	Digital Signal Processing	PE	3	3	0	0	3
7.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3

**SEMESTER VII  
ELECTIVE - II**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8091	Big Data Analytics	PE	3	3	0	0	3
2.	CS8082	Machine Learning Techniques	PE	3	3	0	0	3
3.	CS8092	Computer Graphics and Multimedia	PE	3	3	0	0	3
4.	IT8075	Software Project Management	PE	3	3	0	0	3
5.	CS8081	Internet of Things	PE	3	3	0	0	3
6.	IT8074	Service Oriented Architecture	PE	3	3	0	0	3
7.	GE8077	Total Quality Management	PE	3	3	0	0	3

**SEMESTER VII  
ELECTIVE - III**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8083	Multi-core Architectures and Programming	PE	3	3	0	0	3
2.	CS8079	Human Computer Interaction	PE	3	3	0	0	3
3.	CS8073	C# and .Net Programming	PE	3	3	0	0	3
4.	CS8088	Wireless Adhoc and Sensor Networks	PE	3	3	0	0	3
5.	CS8071	Advanced Topics on Databases	PE	3	3	0	0	3
6.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3
7.	GE8074	Human Rights	PE	3	3	0	0	3
8.	GE8071	Disaster Management	PE	3	3	0	0	3

**SEMESTER VIII  
ELECTIVE - IV**

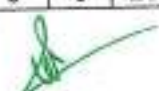
Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	EC8093	Digital Image Processing	PE	3	3	0	0	3
2.	CS8085	Social Network Analysis	PE	3	3	0	0	3
3.	IT8073	Information Security	PE	3	3	0	0	3
4.	CS8087	Software Defined Networks	PE	3	3	0	0	3
5.	CS8074	Cyber Forensics	PE	3	3	0	0	3
6.	CS8086	Soft Computing	PE	3	3	0	0	3
7.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3

**SEMESTER VIII  
ELECTIVE - V**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8080	Information Retrieval Techniques	PE	3	3	0	0	3
2.	CS8078	Green Computing	PE	3	3	0	0	3
3.	CS8076	GPU Architecture and Programming	PE	3	3	0	0	3
4.	CS8084	Natural Language Processing	PE	3	3	0	0	3
5.	CS8001	Parallel Algorithms	PE	3	3	0	0	3
6.	IT8077	Speech Processing	PE	3	3	0	0	3
7.	GE8073	Fundamentals of Nano Science	PE	3	3	0	0	3

**EMPLOYABILITY ENHANCEMENT COURSES (EEC)**

Sl. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8381	Interpersonal Skills/Listening & Speaking	EEC	2	0	0	2	1
2.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
3.	CS8611	Mini Project	EEC	2	0	0	2	1
4.	HS8581	Professional Communication	EEC	2	0	0	2	1
5.	CS8811	Project Work	EEC	20	0	0	20	10

  
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### SUMMARY

S.NO.	SUBJECT AREA	CREDITS AS PER SEMESTER								CREDITS TOTAL	Percentage
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	4	7					3		14	7.60%
2.	BS	12	7	4	4	4				31	16.8%
3.	ES	9	5	9						23	12.5%
4.	PC		5	10	19	18	20	10		82	44.5%
5.	PE						3	6	6	15	8.15%
6.	OE					3		3		6	3.3%
7.	EEC			1	1		2		10	14	7.65%
	<b>Total</b>	<b>25</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>25</b>	<b>25</b>	<b>22</b>	<b>16</b>	<b>185</b>	
8.	<b>Non Credit / Mandatory</b>										



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**ANNA UNIVERSITY, CHENNAI**

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**R - 2008**

I SEMESTER CURRICULA AND SYLLABI

(Common to all B.E. / B.Tech Programmes except B.E. Marine Engineering)**SEMESTER I**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS2111	<u>Technical English - I</u>	3	1	0	4
2.	MA2111	<u>Mathematics - I</u>	3	1	0	4
3.	PH2111	<u>Engineering Physics - I</u>	3	0	0	3
4.	CY2111	<u>Engineering Chemistry - I</u>	3	0	0	3
5.	GE2111	<u>Engineering Graphics</u>	2	3	0	5
6.	GE2112	<u>Fundamentals of Computing and Programming</u>	3	0	0	3
<b>PRACTICAL</b>						
7.	GE2115	<u>Computer Practice Laboratory -I</u>	0	0	3	2
8.	GE2116	<u>Engineering Practices Laboratory</u>	0	0	3	2
9.		* <u>Physics &amp; Chemistry Laboratory I</u>	0	0	3	-
<b>TOTAL : 26 CREDITS</b>						

\* Laboratory classes on alternate weeks for Physics and Chemistry. The lab examinations will be held only in the second semester (Including the first semester experiments also).

  
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**R - 2008**

**B.E. ELECTRICAL AND ELECTRONICS ENGINEERING**

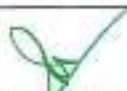
**II - VIII SEMESTERS CURRICULUM AND SYLLABI**

**SEMESTER II**

**CURRICULUM**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS2161	<u>Technical English – II*</u>	3	1	0	4
2.	MA2161	<u>Mathematics – II*</u>	3	1	0	4
3.	PH2161	<u>Engineering Physics – II*</u>	3	0	0	3
4.	CY2161	<u>Engineering Chemistry – II*</u>	3	0	0	3
5. a	ME2151	<u>Engineering Mechanics</u> (For non-circuit branches)	3	1	0	4
5. b	EE2151	<u>Circuit Theory</u> (For branches under Electrical Faculty)	3	1	0	4
5. c	EC2151	<u>Electric Circuits and Electron Devices</u> (For branches under I & C Faculty)	3	1	0	4
6. a	GE2151	<u>Basic Electrical &amp; Electronics Engineering</u> (For non-circuit branches)	4	0	0	4
6. b	GE2152	<u>Basic Civil &amp; Mechanical Engineering</u> (For circuit branches)	4	0	0	4
<b>PRACTICAL</b>						
7.	GE2155	<u>Computer Practice Laboratory-II*</u>	0	1	2	2
8.	GS2165	<u>Physics &amp; Chemistry Laboratory - II*</u>	0	0	3	2
9. a	ME2155	<u>Computer Aided Drafting and Modeling Laboratory</u> (For non-circuits branches)	0	1	2	2
9. b	EE2155	<u>Electrical Circuits Laboratory</u> (For branches under Electrical Faculty)	0	0	3	2
9. c	EC2155	<u>Circuits and Devices Laboratory</u> (For branches under I & C Faculty)	0	0	3	2
<b>TOTAL : 28 CREDITS</b>						

1

  
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10.	-	English Language Laboratory *	0	0	2	-
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\* Common to all B.E. / B.Tech. Programmes

+ Offering English Language Laboratory as an additional subject (with no marks) during 2<sup>nd</sup> semester may be decided by the respective Colleges affiliated to Anna University Chennai.

#### A. CIRCUIT BRANCHES

##### I Faculty of Electrical Engineering

1. B.E. Electrical and Electronics Engineering
2. B.E. Electronics and Instrumentation Engineering
3. B.E. Instrumentation and Control Engineering

##### II Faculty of Information and Communication Engineering

1. B.E. Computer Science and Engineering
2. B.E. Electronics and Communication Engineering
3. B.E. Bio Medical Engineering
4. B.Tech. Information Technology

#### B. NON – CIRCUIT BRANCHES

##### I Faculty of Civil Engineering

1. B.E. Civil Engineering

##### II Faculty of Mechanical Engineering

1. B.E. Aeronautical Engineering
2. B.E. Automobile Engineering
3. B.E. Marine Engineering
4. B.E. Mechanical Engineering
5. B.E. Production Engineering

##### III Faculty of Technology

1. B.Tech. Chemical Engineering
2. B.Tech. Biotechnology
3. B.Tech. Polymer Technology
4. B.Tech. Textile Technology
5. B.Tech. Textile Technology (Fashion Technology)
6. B.Tech. Petroleum Engineering
7. B.Tech. Plastics Technology

  
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**SEMESTER III**

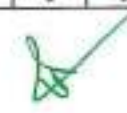
(Applicable to the students admitted from the Academic year 2008 – 2009 onwards)

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	MA 2211	<u>Transforms and Partial Differential Equations</u>	3	1	0	4
2.	EE 2201	<u>Measurements &amp; Instrumentation</u>	3	0	0	3
3.	EE 2202	<u>Electromagnetic Theory</u>	3	1	0	4
4.	GE 2211	<u>Environmental Science and Engineering</u>	3	0	0	3
5.	EE 2203	<u>Electronic Devices &amp; Circuits</u>	3	0	0	3
6.	EE 2204	<u>Data Structures and Algorithms</u>	3	1	0	4
<b>PRACTICAL</b>						
1.	EE 2207	<u>Electron Devices and Circuits Laboratory</u>	0	0	3	2
2.	EE 2209	<u>Data Structures and Algorithms Laboratory</u>	0	0	3	2
3.	EE 2208	<u>Measurements &amp; Instrumentation Laboratory</u>	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>3</b>	<b>9</b>	<b>27</b>

**SEMESTER IV**

(Applicable to the students admitted from the Academic year 2008 – 2009 onwards)

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	MA 2264	<u>Numerical Methods</u>	3	1	0	4
2.	EE 2251	<u>Electrical Machines – I</u>	3	1	0	4
3.	EE 2252	<u>Power Plant Engineering</u>	3	1	0	4
4.	EE 2253	<u>Control Systems</u>	3	1	0	4
5.	EE 2254	<u>Linear Integrated Circuits and Applications</u>	3	0	0	3
6.	EE 2255	<u>Digital Logic Circuits</u>	3	1	0	4
<b>PRACTICAL</b>						
1.	EE 2257	<u>Control Systems Laboratory</u>	0	0	3	2
2.	EE 2258	<u>Linear and Digital Integrated Circuits Laboratory</u>	0	0	3	2
3.	EE 2259	<u>Electrical Machines Laboratory – I</u>	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>5</b>	<b>9</b>	<b>29</b>

  
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**SEMESTER V**


(Applicable to the students admitted from the Academic year 2008 – 2009 onwards)

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	EC2311	Communication Engineering	3	0	0	3
2.	EC2314	Digital Signal Processing	3	1	0	4
3.	CS2311	Object Oriented Programming	3	0	0	3
4.	EE2301	Power Electronics	3	0	0	3
5.	EE2302	Electrical Machines II	3	1	0	4
6.	EE2303	Transmission & Distribution	3	1	0	4
<b>PRACTICAL</b>						
1.	CS2312	Object Oriented Programming Laboratory	0	0	3	2
2.	GE2321	Communication Skills Laboratory	0	0	4	2
3.	EE2304	Power Electronics Laboratory	0	0	3	2
4.	EE2305	Electrical Machines Laboratory II	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>3</b>	<b>13</b>	<b>29</b>

**SEMESTER VI**

(Applicable to the students admitted from the Academic year 2008 – 2009 onwards)

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	EE2351	Power System Analysis	3	1	0	4
2.	EE2352	Solid State Drives	3	0	0	3
3.	EE2353	High Voltage Engineering	3	0	0	3
4.	EE2354	Microprocessors and Micro controller	3	0	0	3
5.	EE2355	Design of Electrical Machines	3	1	0	4
6.	CS2363	Computer Networks	3	0	0	3
7.		Elective I	3	0	0	3
<b>PRACTICAL</b>						
1.	EE2356	Microprocessor and Micro controller Laboratory	0	0	3	2
2.	EE2357	Presentation Skills and Technical Seminar	0	0	2	1
<b>TOTAL</b>			<b>21</b>	<b>2</b>	<b>5</b>	<b>26</b>

  
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## SEMESTER VII

(Applicable to the students admitted from the Academic year 2008 – 2009 onwards)

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	EE2401	Power System Operation and Control	3	0	0	3
2.	EE2402	Protection & Switchgear	3	0	0	3
3.	EE2403	Special Electrical Machines	3	0	0	3
4.	MG2351	Principles of Management	3	0	0	3
5.	CS2411	Operating Systems	3	0	0	3
6.		Elective – II	3	0	0	3
<b>PRACTICAL</b>						
1.	EE2404	Power System Simulation Laboratory	0	0	3	2
2.	EE2405	Comprehension	0	0	2	1
<b>TOTAL</b>			<b>18</b>	<b>0</b>	<b>5</b>	<b>21</b>

## SEMESTER VIII

(Applicable to the students admitted from the Academic year 2008 – 2009 onwards)

<b>THEORY</b>			L	T	P	C
1.	EE2451	Electric Energy Generation, Utilization and Conservation	3	0	0	3
2.		Elective – III	3	0	0	3
3.		Elective – IV	3	0	0	3
<b>PRACTICAL</b>						
1.	EE2452	Project work	0	0	12	6
<b>TOTAL</b>			<b>9</b>	<b>0</b>	<b>12</b>	<b>15</b>

## LIST OF ELECTIVES - R 2008

### ELECTIVE I

SL.NO	CODE NO.	COURSE TITLE	L	T	P	C
1.	EI2404	Fibre Optics and Laser Instruments	3	0	0	3
2.	CS2070	Visual Languages and Applications	3	0	0	3
3.	IC2351	Advanced Control System	3	0	0	3
4.	EE2023	Robotics and Automation	3	0	0	3
5.	GE2025	Professional Ethics in Engineering	3	0	0	3
6.	EE2027	Power System Transients	3	0	0	3

### ELECTIVE II

7.	EI2311	Biomedical Instrumentation	3	0	0	3
8.	EE2025	Intelligent Control	3	0	0	3
9.	EE2026	Power System Dynamics	3	0	0	3
10.	CS2071	Computer Architecture	3	0	0	3
11.	GE2022	Total Quality Management	3	0	0	3

### ELECTIVE III

12.	EE2028	Power Quality	3	0	0	3
13.	EE2029	System Identification and Adaptive Control	3	0	0	3
14.	EE2030	Operations Research	3	0	0	3
15.	EI2403	VLSI Design	3	0	0	3
16.	EE2032	High Voltage Direct Current Transmission	3	0	0	3

### ELECTIVE IV

17.	GE2023	Fundamental of NanoScience	3	0	0	3
18.	EE2033	Micro Electro Mechanical Systems	3	0	0	3
19.	EE2034	Software for Circuit Simulation	3	0	0	3
20.	EE2035	Computer Aided Design of Electrical Apparatus	3	0	0	3
21.	EE2036	Flexible AC Transmission Systems	3	0	0	3

  
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**ANNA UNIVERSITY, CHENNAI**

**AFFILIATED INSTITUTIONS**

**R - 2013**

**B. E. ELECTRICAL AND ELECTRONICS ENGINEERING**


**I TO VIII SEMESTERS CURRICULUM AND SYLLABUS**

**SEMESTER I**

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS6151	Technical English - I	3	1	0	4
2.	MA6151	Mathematics - I	3	1	0	4
3.	PH6151	Engineering Physics - I	3	0	0	3
4.	CY6151	Engineering Chemistry - I	3	0	0	3
5.	GE6151	Computer Programming	3	0	0	3
6.	GE6152	Engineering Graphics	2	0	3	4
<b>PRACTICAL</b>						
7.	GE6161	Computer Practices Laboratory	0	0	3	2
8.	GE6162	Engineering Practices Laboratory	0	0	3	2
9.	GE6163	Physics and Chemistry Laboratory - I	0	0	2	1
			<b>17</b>	<b>2</b>	<b>11</b>	<b>26</b>

**SEMESTER II**

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS6251	Technical English - II	3	1	0	4
2.	MA6251	Mathematics - II	3	1	0	4
3.	PH6251	Engineering Physics - II	3	0	0	3
4.	CY6251	Engineering Chemistry - II	3	0	0	3
5.	GE6251	Basic Civil and Mechanical Engineering	4	0	0	4
6.	EE6201	Circuit Theory	3	1	0	4
<b>PRACTICAL</b>						
7.	GE6262	Physics and Chemistry Laboratory - II	0	0	2	1
8.	GE6263	Computer Programming Laboratory	0	1	2	2
9.	EE6211	Electric Circuits Laboratory	0	0	3	2
<b>TOTAL</b>			<b>19</b>	<b>4</b>	<b>7</b>	<b>27</b>

  
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**SEMESTER III**

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	MA6351	Transforms and Partial Differential Equations	3	1	0	4
2.	EE6301	Digital Logic Circuits	3	1	0	4
3.	EE6302	Electromagnetic Theory	3	1	0	4
4.	GE6351	Environmental Science and Engineering	3	0	0	3
5.	EC6202	Electronic Devices and Circuits	3	1	0	4
6.	EE6303	Linear Integrated Circuits and Applications	3	0	0	3
<b>PRACTICAL</b>						
7.	EC6361	Electronics Laboratory	0	0	3	2
8.	EE6311	Linear and Digital Integrated Circuits Laboratory	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>4</b>	<b>6</b>	<b>26</b>

**SEMESTER IV**

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	MA6459	Numerical Methods	3	1	0	4
2.	EE6401	Electrical Machines - I	3	1	0	4
3.	CS6456	Object Oriented Programming	3	0	0	3
4.	EE6402	Transmission and Distribution	3	0	0	3
5.	EE6403	Discrete Time Systems and Signal Processing	3	0	0	3
6.	EE6404	Measurements and Instrumentation	3	0	0	3
<b>PRACTICAL</b>						
7.	CS6461	Object Oriented Programming Laboratory	0	0	3	2
8.	EE6411	Electrical Machines Laboratory - I	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>2</b>	<b>6</b>	<b>24</b>

**SEMESTER V**

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	EE6501	Power System Analysis	3	0	0	3
2.	EE6502	Microprocessors and Microcontrollers	3	0	0	3
3.	ME6701	Power Plant Engineering	3	0	0	3
4.	EE6503	Power Electronics	3	0	0	3
5.	EE6504	Electrical Machines - II	3	1	0	4
6.	IC6501	Control Systems	3	1	0	4
<b>PRACTICAL</b>						
7.	EE6511	Control and Instrumentation Laboratory	0	0	3	2
8.	GE6674	Communication and Soft Skills- Laboratory Based	0	0	4	2
9.	EE6512	Electrical Machines Laboratory - II	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>2</b>	<b>10</b>	<b>26</b>

**SEMESTER VI**

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	EC6651	Communication Engineering	3	0	0	3
2.	EE6601	Solid State Drives	3	0	0	3
3.	EE6602	Embedded Systems	3	0	0	3
4.	EE6603	Power System Operation and Control	3	0	0	3
5.	EE6604	Design of Electrical Machines	3	1	0	4
6.		Elective - I	3	0	0	3
<b>PRACTICAL</b>						
7.	EE6611	Power Electronics and Drives Laboratory	0	0	3	2
8.	EE6612	Microprocessors and Microcontrollers Laboratory	0	0	3	2
9.	EE6613	Presentation Skills and Technical Seminar	0	0	2	1
<b>TOTAL</b>			<b>18</b>	<b>1</b>	<b>8</b>	<b>24</b>

**SEMESTER VII**


S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	EE6701	High Voltage Engineering	3	0	0	3
2.	EE6702	Protection and Switchgear	3	0	0	3
3.	EE6703	Special Electrical Machines	3	0	0	3
4.	MG6851	Principles of Management	3	0	0	3
5.		Elective – II	3	0	0	3
6.		Elective – III	3	0	0	3
<b>PRACTICAL</b>						
7.	EE6711	Power System Simulation Laboratory	0	0	3	2
8.	EE6712	Comprehension	0	0	2	1
<b>TOTAL</b>			<b>18</b>	<b>0</b>	<b>5</b>	<b>21</b>

**SEMESTER VIII**

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	EE6801	Electric Energy Generation, Utilization and Conservation	3	0	0	3
2.		Elective – IV	3	0	0	3
3.		Elective – V	3	0	0	3
<b>PRACTICAL</b>						
4.	EE6811	Project Work	0	0	12	6
<b>TOTAL</b>			<b>9</b>	<b>0</b>	<b>12</b>	<b>15</b>

**TOTAL CREDITS: 189**

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**ELECTIVE - I**

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	EE6001	Visual Languages and Applications	3	0	0	3
2.	IC6601	Advanced Control System	3	0	0	3
3.	EE6002	Power System Transients	3	0	0	3
4.	EE6003	Optimisation Techniques	3	0	0	3

**ELECTIVE - II**

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
5.	EI6703	Fibre Optics and Laser Instruments	3	0	0	3
6.	EI6704	Biomedical Instrumentation	3	0	0	3
7.	EE6004	Flexible AC Transmission Systems	3	0	0	3
8.	EE6005	Power Quality	3	0	0	3
9.	EE6006	Applied Soft Computing	3	0	0	3

**ELECTIVE - III**

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
10.	GE6081	Fundamentals of Nanoscience	3	0	0	3
11.	IC6002	System Identification and Adaptive Control	3	0	0	3
12.	EE6007	Micro Electro Mechanical Systems	3	0	0	3
13.	EE6008	Microcontroller Based System Design	3	0	0	3

**ELECTIVE - IV**

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
14.	EE6009	Power Electronics for Renewable Energy Systems	3	0	0	3
15.	EE6010	High Voltage Direct Current Transmission	3	0	0	3
16.	EE6011	Power System Dynamics	3	0	0	3
17.	IC6003	Principles of Robotics	3	0	0	3
18.	GE6083	Disaster Management	3	0	0	3

**ELECTIVE - V**

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
19.	GE6075	Professional Ethics in Engineering	3	0	0	3
20.	GE6757	Total Quality Management	3	0	0	3
21.	EC6002	Advanced Digital Signal Processing	3	0	0	3
22.	EE6012	Computer Aided Design of Electrical Apparatus	3	0	0	3
23.	EC6601	VLSI Design	3	0	0	3
24.	GE6084	Human Rights	3	0	0	3
25.	MA6468	Probability and Statistics	3	1	0	4
26.	EI6001	Data Structures and Algorithms	3	0	0	3

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 REGULATIONS – 2017  
 CHOICE BASED CREDIT SYSTEM  
 I TO VIII SEMESTERS CURRICULA & SYLLABI

**SEMESTER I**

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
<b>PRACTICALS</b>								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
<b>TOTAL</b>				<b>31</b>	<b>19</b>	<b>0</b>	<b>12</b>	<b>25</b>

**SEMESTER II**

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8253	Physics for Electronics Engineering	BS	3	3	0	0	3
4.	BE8252	Basic Civil and Mechanical Engineering	ES	4	4	0	0	4
5.	EE8251	Circuit Theory	PC	4	2	2	0	3
6.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
<b>PRACTICALS</b>								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	EE8261	Electric Circuits Laboratory	PC	4	0	0	4	2
<b>TOTAL</b>				<b>30</b>	<b>20</b>	<b>2</b>	<b>8</b>	<b>25</b>

**SEMESTER V**

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	EE8501	Power System Analysis	PC	3	3	0	0	3
2.	EE8551	Microprocessors and Microcontrollers	PC	3	3	0	0	3
3.	EE8552	Power Electronics	PC	3	3	0	0	3
4.	EE8591	Digital Signal Processing	PC	4	2	2	0	3
5.	CS8392	Object Oriented Programming	ES	3	3	0	0	3
6.		Open Elective I*	OE	3	3	0	0	3
<b>PRACTICALS</b>								
7.	EE8511	Control and Instrumentation Laboratory	PC	4	0	0	4	2
8.	HS8581	Professional Communication	EEC	2	0	0	2	1
9.	CS8383	Object Oriented Programming Laboratory	ES	4	0	0	4	2
<b>TOTAL</b>				<b>29</b>	<b>17</b>	<b>2</b>	<b>10</b>	<b>23</b>

**SEMESTER VI**

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	EE8601	Solid State Drives	PC	3	3	0	0	3
2.	EE8602	Protection and Switchgear	PC	3	3	0	0	3
3.	EE8691	Embedded Systems	ES	3	3	0	0	3
4.		Professional Elective I	PE	3	3	0	0	3
5.		Professional Elective II	PE	3	3	0	0	3
<b>PRACTICALS</b>								
6.	EE8661	Power Electronics and Drives Laboratory	PC	4	0	0	4	2
7.	EE8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
8.	EE8611	Mini Project	EEC	4	0	0	4	2
<b>TOTAL</b>				<b>27</b>	<b>15</b>	<b>0</b>	<b>12</b>	<b>21</b>

**SEMESTER III**

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
2.	EE8351	Digital Logic Circuits	PC	4	2	2	0	3
3.	EE8391	Electromagnetic Theory	PC	4	2	2	0	3
4.	EE8301	Electrical Machines - I	PC	4	2	2	0	3
5.	EC8353	Electron Devices and Circuits	ES	3	3	0	0	3
6.	ME8792	Power Plant Engineering	ES	3	3	0	0	3
<b>PRACTICALS</b>								
7.	EC8311	Electronics Laboratory	ES	4	0	0	4	2
8.	EE8311	Electrical Machines Laboratory - I	PC	4	0	0	4	2
<b>TOTAL</b>				<b>30</b>	<b>16</b>	<b>6</b>	<b>8</b>	<b>23</b>

**SEMESTER IV**

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MA8491	Numerical Methods	BS	4	4	0	0	4
2.	EE8401	Electrical Machines - II	PC	4	2	2	0	3
3.	EE8402	Transmission and Distribution	PC	3	3	0	0	3
4.	EE8403	Measurements and Instrumentation	PC	3	3	0	0	3
5.	EE8451	Linear Integrated Circuits and Applications	PC	3	3	0	0	3
6.	IC8451	Control Systems	PC	5	3	2	0	4
<b>PRACTICALS</b>								
7.	EE8411	Electrical Machines Laboratory - II	PC	4	0	0	4	2
8.	EE8461	Linear and Digital Integrated Circuits Laboratory	PC	4	0	0	4	2
9.	EE8412	Technical Seminar	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>32</b>	<b>18</b>	<b>4</b>	<b>10</b>	<b>25</b>

**SEMESTER VII**

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	EE8701	High Voltage Engineering	PC	3	3	0	0	3
2.	EE8702	Power System Operation and Control	PC	3	3	0	0	3
3.	EE8703	Renewable Energy Systems	PC	3	3	0	0	3
4.		Open Elective II*	OE	3	3	0	0	3
5.		Professional Elective III	PE	3	3	0	0	3
6.		Professional Elective IV	PE	3	3	0	0	3
<b>PRACTICALS</b>								
7.	EE8711	Power System Simulation Laboratory	PC	4	0	0	4	2
8.	EE8712	Renewable Energy Systems Laboratory	PC	4	0	0	4	2
<b>TOTAL</b>				<b>26</b>	<b>18</b>	<b>0</b>	<b>8</b>	<b>22</b>

**SEMESTER VIII**

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.		Professional Elective V	PE	3	3	0	0	3
2.		Professional Elective VI	PE	3	3	0	0	3
<b>PRACTICALS</b>								
3.	EE8811	Project Work	EEC	20	0	0	20	10
<b>TOTAL</b>				<b>26</b>	<b>6</b>	<b>0</b>	<b>20</b>	<b>16</b>

**TOTAL NO. OF CREDITS: 180**

\*Course from the curriculum of other UG Programmes.

  
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**PROFESSIONAL ELECTIVE – I ( VI SEMESTER)**

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	IC8651	Advanced Control System	PE	4	2	2	0	3
2.	EE8001	Visual Languages and Applications	PE	3	3	0	0	3
3.	EE8002	Design of Electrical Apparatus	PE	3	3	0	0	3
4.	EE8003	Power Systems Stability	PE	3	3	0	0	3
5.	EE8004	Modern Power Converters	PE	3	3	0	0	3
6.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3

**PROFESSIONAL ELECTIVE – II ( VI SEMESTER)**

1.	RO8591	Principles of Robotics	PE	3	3	0	0	3
2.	EE8005	Special Electrical Machines	PE	3	3	0	0	3
3.	EE8006	Power Quality	PE	3	3	0	0	3
4.	EE8007	EHVAC Transmission	PE	3	3	0	0	3
5.	EC8395	Communication Engineering	PE	3	3	0	0	3

**PROFESSIONAL ELECTIVE – III ( VII SEMESTER)**

1.	GE8071	Disaster Management	PE	3	3	0	0	3
2.	GE8074	Human Rights	PE	3	3	0	0	3
3.	MG8491	Operations Research	PE	3	3	0	0	3
4.	MA8391	Probability and Statistics	PE	4	4	0	0	4
5.	EI8075	Fibre Optics and Laser Instrumentation	PE	3	3	0	0	3
6.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3

**PROFESSIONAL ELECTIVE – IV ( VII SEMESTER)**

1.	EE8008	System Identification and Adaptive Control	PE	3	3	0	0	3
2.	CS8491	Computer Architecture	PE	3	3	0	0	3
3.	EE8009	Control of Electrical Drives	PE	3	3	0	0	3
4.	EC8095	VLSI Design	PE	3	3	0	0	3
5.	EE8010	Power Systems Transients	PE	3	3	0	0	3
6.	GE8077	Total Quality Management	PE	3	3	0	0	3


**PROFESSIONAL ELECTIVE – V ( VIII SEMESTER)**

1.	EE8011	Flexible AC Transmission Systems	PE	3	3	0	0	3
2.	EE8012	Soft Computing Techniques	PE	3	3	0	0	3
3.	EE8013	Power Systems Dynamics	PE	3	3	0	0	3
4.	EE8014	SMPS and UPS	PE	3	3	0	0	3
5.	EE8015	Electric Energy Generation, Utilization and Conservation	PE	3	3	0	0	3
6.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3
7.	MG8591	Principles of Management	PE	3	3	0	0	3

**PROFESSIONAL ELECTIVE – VI ( VIII SEMESTER)**

1.	EE8016	Energy Management and Auditing	PE	3	3	0	0	3
2.	CS8391	Data Structures	PE	3	3	0	0	3
3.	EE8017	High Voltage Direct Current Transmission	PE	3	3	0	0	3
4.	EE8018	Microcontroller Based System Design	PE	3	3	0	0	3
5.	EE8019	Smart Grid	PE	3	3	0	0	3
6.	EI8073	Biomedical Instrumentation	PE	3	3	0	0	3
7.	GE8073	Fundamentals of Nano Science	PE	3	3	0	0	3

\*Professional Electives are grouped according to elective number as was done previously.

  
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### HUMANITIES AND SOCIALSCIENCES (HS)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	HS8251	Technical English	HS	4	4	0	0	4
3.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3

### BASIC SCIENCES (BS)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA8151	Engineering Mathematics I	BS	4	4	0	0	4
2.	PH8151	Engineering Physics	BS	3	3	0	0	3
3.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
4.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
5.	MA8251	Engineering Mathematics II	BS	4	4	0	0	4
6.	PH8253	Physics For Electronics Engineering	BS	3	3	0	0	3
7.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
8.	MA8491	Numerical Methods	BS	4	4	0	0	4

### ENGINEERING SCIENCES (ES)

S.NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	GE8151	Problem Solving and Python programming	ES	3	3	0	0	3
2.	GE8152	Engineering Graphics	ES	6	2	0	4	4
3.	GE8161	Problem Solving and	ES		0	0	4	2

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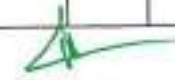


		Python programming Laboratory		4				
4.	BE8252	Basic Civil and Mechanical Engineering	ES	4	4	0	0	4
5.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
6.	EC8353	Electron Devices and Circuits	ES	3	3	0	0	3
7.	ME8792	Power Plant Engineering	ES	3	3	0	0	3
8.	EC8311	Electronics Laboratory	ES	4	0	0	4	2
9.	CS8392	Object Oriented Programming	ES	3	3	0	0	3
10.	CS8383	Object Oriented Programming Laboratory	ES	4	0	0	4	2
11.	EE8691	Embedded Systems	ES	3	3	0	0	3

**PROFESSIONAL CORE (PC)**

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	EE8251	Circuit Theory	PC	4	2	2	0	3
2.	EE8261	Electric Circuits Laboratory	PC	4	0	0	4	2
3.	EE8351	Digital Logic Circuits	PC	4	2	2	0	3
4.	EE8391	Electromagnetic Theory	PC	4	2	2	0	3
5.	EE8301	Electrical Machines - I	PC	4	2	2	0	3
6.	EE8311	Electrical Machines Laboratory - I	PC	4	0	0	4	2
7.	EE8401	Electrical Machines - II	PC	4	2	2	0	3
8.	EE8402	Transmission and Distribution	PC	3	3	0	0	3
9.	EE8403	Measurements and Instrumentation	PC	3	3	0	0	3
10.	EE8451	Linear Integrated Circuits and Applications	PC	3	3	0	0	3
11.	IC8451	Control Systems	PC	5	3	2	0	4
12.	EE8411	Electrical Machines Laboratory II	PC	4	0	0	4	2

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13.	EE8461	Linear and Digital Integrated Circuits Laboratory	PC	4	0	0	4	2
14.	EE8501	Power System Analysis	PC	3	3	0	0	3
15.	EE8551	Microprocessors and Microcontrollers	PC	3	3	0	0	3
16.	EE8552	Power Electronics	PC	3	3	0	0	3
17.	EE8591	Digital Signal Processing	PC	4	2	2	0	3
18.	EE8511	Control and Instrumentation Laboratory	PC	4	0	0	4	2
19.	EE8601	Solid State Drives	PC	3	3	0	0	3
20.	EE8602	Protection and Switchgear	PC	3	3	0	0	3
21.	EE8661	Power Electronics and Drives Laboratory	PC	4	0	0	4	2
22.	EE8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
23.	EE8701	High Voltage Engineering	PC	3	3	0	0	3
24.	EE8702	Power System Operation and Control	PC	3	3	0	0	3
25.	EE8703	Renewable Energy Systems	PC	3	3	0	0	3
26.	EE8711	Power System Simulation Laboratory	PC	4	0	0	4	2
27.	EE8712	Renewable Energy Systems Laboratory	PC	4	0	0	4	2

#### EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	EE8412	Technical seminar	EEC	2	0	0	2	1
2.	HS8581	Professional Communication	EEC	2	0	0	2	1
3.	EE8611	Mini Project	EEC	4	0	0	4	2
4.	EE8811	Project work	EEC	20	0	0	20	10

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### SUMMARY

S.NO.	SUBJECT AREA	CREDITS AS PER SEMESTER								CREDITS TOTAL
		I	II	III	IV	V	VI	VII	VIII	
1.	HS	4	7	-	-	-	-	-	-	11
2.	BS	12	7	4	4	-	-	-	-	27
3.	ES	9	6	8	-	5	3	-	-	31
4.	PC	-	5	11	20	14	10	13	-	73
5.	PE						6	6	6	18
6.	OE					3	-	3		6
7.	EEC				1	1	2		10	14
	<b>Total</b>	<b>25</b>	<b>25</b>	<b>23</b>	<b>25</b>	<b>23</b>	<b>21</b>	<b>22</b>	<b>16</b>	<b>180</b>
	<b>Non Credit / Mandatory</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0</b>

  
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**ANNA UNIVERSITY, CHENNAI**

AFFILIATED INSTITUTIONS

**R - 2008**

I SEMESTER CURRICULA AND SYLLABI

(Common to all B.E. / B.Tech Programmes except B.E. Marine Engineering)**SEMESTER I**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS2111	<u>Technical English - I</u>	3	1	0	4
2.	MA2111	<u>Mathematics - I</u>	3	1	0	4
3.	PH2111	<u>Engineering Physics - I</u>	3	0	0	3
4.	CY2111	<u>Engineering Chemistry - I</u>	3	0	0	3
5.	GE2111	<u>Engineering Graphics</u>	2	3	0	5
6.	GE2112	<u>Fundamentals of Computing and Programming</u>	3	0	0	3
<b>PRACTICAL</b>						
7.	GE2115	<u>Computer Practice Laboratory -I</u>	0	0	3	2
8.	GE2116	<u>Engineering Practices Laboratory</u>	0	0	3	2
9.		* <u>Physics &amp; Chemistry Laboratory I</u>	0	0	3	-
<b>TOTAL : 26 CREDITS</b>						

\* Laboratory classes on alternate weeks for Physics and Chemistry. The lab examinations will be held only in the second semester (Including the first semester experiments also).

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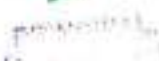
**R 2008**

**B.E. ELECTRONICS AND COMMUNICATION ENGINEERING**

**II - VIII SEMESTERS CURRICULA AND SYLLABI**

**SEMESTER II**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS2161	<u>Technical English – II*</u>	3	1	0	4
2.	MA2161	<u>Mathematics – II*</u>	3	1	0	4
3.	PH2161	<u>Engineering Physics – II*</u>	3	0	0	3
4.	CY2161	<u>Engineering Chemistry – II*</u>	3	0	0	3
5. a	ME2151	<u>Engineering Mechanics</u> (For non-circuit branches)	3	1	0	4
5. b	EE2151	<u>Circuit Theory</u> (For branches under Electrical Faculty)	3	1	0	4
5. c	EC2151	<u>Electric Circuits and Electron Devices</u> (For branches under I & C Faculty)	3	1	0	4
6. a	GE2151	<u>Basic Electrical &amp; Electronics Engineering</u> (For non-circuit branches)	4	0	0	4
6. b	GE2152	<u>Basic Civil &amp; Mechanical Engineering</u> (For circuit branches)	4	0	0	4
<b>PRACTICAL</b>						
7.	GE2155	<u>Computer Practice Laboratory-II*</u>	0	1	2	2
8.	GS2165	<u>Physics &amp; Chemistry Laboratory - II*</u>	0	0	3	2
9. a	ME2155	<u>Computer Aided Drafting and Modeling Laboratory</u> (For non-circuits branches)	0	1	2	2
9. b	EE2155	<u>Electrical Circuits Laboratory</u> (For branches under Electrical Faculty)	0	0	3	2
9. c	EC2155	<u>Circuits and Devices Laboratory</u> (For branches under I & C Faculty)	0	0	3	2
<b>TOTAL : 28 CREDITS</b>						
10.	-	<u>English Language Laboratory</u>	0	0	2	-

  
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- \* Common to all B.E. / B.Tech. Programmes
- + Offering English Language Laboratory as an additional subject (with no marks) during 2<sup>nd</sup> semester may be decided by the respective Colleges affiliated to Anna University Chennai.

**A. CIRCUIT BRANCHES**

**I Faculty of Electrical Engineering**

1. B.E. Electrical and Electronics Engineering
2. B.E. Electronics and Instrumentation Engineering
3. B.E. Instrumentation and Control Engineering

**II Faculty of Information and Communication Engineering**

1. B.E. Computer Science and Engineering
2. B.E. Electronics and Communication Engineering
3. B.E. Bio Medical Engineering
4. B.Tech. Information Technology

**B. NON – CIRCUIT BRANCHES**

**I Faculty of Civil Engineering**

1. B.E. Civil Engineering

**II Faculty of Mechanical Engineering**

1. B.E. Aeronautical Engineering
2. B.E. Automobile Engineering
3. B.E. Marine Engineering
4. B.E. Mechanical Engineering
5. B.E. Production Engineering

**III Faculty of Technology**

1. B.Tech. Chemical Engineering
2. B.Tech. Biotechnology
3. B.Tech. Polymer Technology
4. B.Tech. Textile Technology
5. B.Tech. Textile Technology (Fashion Technology)
6. B.Tech. Petroleum Engineering
7. B.Tech. Plastics Technology

  
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### SEMESTER III

(Applicable to the students admitted from the Academic year 2008–2009 onwards)

CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
MA 2211	<u>Transforms and Partial Differential Equations</u>	3	1	0	4
EC 2201	<u>Electrical Engineering</u>	3	0	0	3
EC 2202	<u>Data Structures and Object Oriented Programming in C++</u>	3	0	0	3
EC 2203	<u>Digital Electronics</u>	3	1	0	4
EC 2204	<u>Signals and systems</u>	3	1	0	4
EC 2205	<u>Electronic Circuits- I</u>	3	1	0	4
<b>PRACTICAL</b>					
EC 2207	<u>Digital Electronics Lab</u>	0	0	3	2
EC 2208	<u>Electronic Circuits Lab I</u>	0	0	3	2
EC 2209	<u>Data structures and Object Oriented Programming Lab</u>	0	0	3	2
<b>TOTAL</b>		<b>18</b>	<b>4</b>	<b>9</b>	<b>28</b>

### SEMESTER IV

(Applicable to the students admitted from the Academic year 2008–2009 onwards)

CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
MA 2261	<u>Probability and Random Processes</u>	3	1	0	4
EC 2251	<u>Electronic Circuits II</u>	3	1	0	4
EC 2252	<u>Communication Theory</u>	3	1	0	4
EC 2253	<u>Electromagnetic Fields</u>	3	1	0	4
EC 2254	<u>Linear Integrated Circuits</u>	3	0	0	3
EC 2255	<u>Control Systems</u>	3	0	0	3
<b>PRACTICAL</b>					
EC 2257	<u>Electronics circuits II and simulation lab</u>	0	0	3	2
EC 2258	<u>Linear Integrated Circuit Lab</u>	0	0	3	2
EC 2259	<u>Electrical Engineering and Control System Lab</u>	0	0	3	2
<b>TOTAL</b>		<b>18</b>	<b>4</b>	<b>9</b>	<b>28</b>

  
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**SEMESTER V**

(Applicable to the students admitted from the Academic year 2008–2009 onwards)

CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
EC2301	<u>Digital Communication</u>	3	0	0	3
EC2302	<u>Digital Signal Processing</u>	3	1	0	4
EC2303	<u>Computer Architecture and Organization</u>	3	0	0	3
EC2305	<u>Transmission Lines and Wave guides</u>	3	1	0	4
GE2021	<u>Environmental Science and Engineering</u>	3	0	0	3
EC2304	<u>Microprocessors and Microcontrollers</u>	3	1	0	4
<b>PRACTICAL</b>					
EC2306	<u>Digital Signal Processing Lab</u>	0	0	3	2
EC2307	<u>Communication System Lab</u>	0	0	3	2
EC2308	<u>Microprocessors and Microcontrollers Lab</u>	0	0	3	2
<b>TOTAL</b>		<b>18</b>	<b>3</b>	<b>9</b>	<b>27</b>

**SEMESTER VI**

(Applicable to the students admitted from the Academic year 2008–2009 onwards)

CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
MG2351	<u>Principles of Management</u>	3	0	0	3
EC2351	<u>Measurements and Instrumentation</u>	3	0	0	3
EC2352	<u>Computer Networks</u>	3	0	0	3
EC2353	<u>Antenna and Wave Propagation</u>	3	1	0	4
EC2354	<u>VLSI Design</u>	3	0	0	3
	Elective I	3	0	0	3
<b>PRACTICAL</b>					
EC2356	<u>Computer Networks Lab</u>	0	0	3	2
EC2357	<u>VLSI Design Lab</u>	0	0	3	2
GE2321	<u>Communication Skills Lab</u>	0	0	4	2
<b>TOTAL</b>		<b>18</b>	<b>1</b>	<b>10</b>	<b>25</b>



**SEMESTER VII**

(Applicable to the students admitted from the Academic year 2008–2009 onwards)

CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
EC2401	<u>Wireless Communication</u>	3	0	0	3
EC2402	<u>Optical Communication and Networks</u>	3	0	0	3
EC2403	<u>RF and Microwave Engineering</u>	3	0	0	3
	Elective II	3	0	0	3
	Elective III	3	0	0	3
	Elective IV	3	0	0	3
<b>PRACTICAL</b>					
EC2404	<u>Electronics System Design Lab</u>	0	0	3	2
EC2405	<u>Optical &amp; Microwave Lab</u>	0	0	3	2
	<b>TOTAL</b>	<b>18</b>	<b>0</b>	<b>6</b>	<b>22</b>

**SEMESTER VIII**

(Applicable to the students admitted from the Academic year 2008–2009 onwards)

CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
	Elective V	3	0	0	3
	Elective VI	3	0	0	3
<b>PRACTICAL</b>					
EC2451	Project Work	0	0	12	6
	<b>TOTAL</b>	<b>6</b>	<b>0</b>	<b>12</b>	<b>12</b>

**LIST OF ELECTIVES  
SEMESTER VI – Elective I**

CODE NO.	COURSE TITLE	L	T	P	C
EC2021	<u>Medical Electronics</u>	3	0	0	3
EC2022	<u>Operating Systems</u>	3	0	0	3
EC2023	<u>Solid State Electronic Devices</u>	3	0	0	3
IT2064	<u>Speech Processing</u>	3	0	0	3
MA2264	<u>Numerical Methods</u>	3	1	0	4
CS2021	<u>Multicore Programming</u>	3	0	0	3

**SEMESTER VII - Elective II**

CODE NO.	COURSE TITLE	L	T	P	C
EC2030	<u>Advanced Digital Signal Processing</u>	3	0	0	3
GE2022	<u>Total Quality Management</u>	3	0	0	3
EC2035	<u>Cryptography and Network Security</u>	3	0	0	3
EC2036	<u>Information Theory</u>	3	0	0	3
GE2071	<u>Intellectual Property Rights</u>	3	0	0	3
GE2025	<u>Professional Ethics in Engineering</u>	3	0	0	3

**SEMESTER VII - Elective III**

CODE NO.	COURSE TITLE	L	T	P	C
EC2027	<u>Advanced Microprocessors</u>	3	0	0	3
EC2028	<u>Internet and Java</u>	3	0	0	3
CS2060	<u>High Speed Networks</u>	3	0	0	3
CS2053	<u>Soft Computing</u>	3	0	0	3
EC2037	<u>Multimedia Compression and Communication</u>	3	0	0	3
EC2039	<u>Parallel and Distributed Processing</u>	3	0	0	3

**SEMESTER VII - Elective IV**

CODE NO.	COURSE TITLE	L	T	P	C
EC2029	<u>Digital Image Processing</u>	3	0	0	3
EC2031	<u>Electromagnetic Interference and Compatibility</u>	3	0	0	3
EC2033	<u>Power Electronics</u>	3	0	0	3
EC2034	<u>Television and Video Engineering</u>	3	0	0	3
EC2038	<u>Nano Electronics</u>	3	0	0	3
EC2041	<u>Avionics</u>	3	0	0	3

**SEMESTER VIII - Elective V**

CODE NO.	COURSE TITLE	L	T	P	C
EC2042	<u>Embedded and Real Time Systems</u>	3	0	0	3
EC2046	<u>Advanced Electronic system design</u>	3	0	0	3
EC2047	<u>Optoelectronic devices</u>	3	0	0	3
EC2050	<u>Mobile Adhoc Networks</u>	3	0	0	3
EC2051	<u>Wireless Sensor Networks</u>	3	0	0	3
EC2052	<u>Remote Sensing</u>	3	0	0	3
EC2053	<u>Engineering Acoustics</u>	3	0	0	3

**SEMESTER VIII - Elective VI**

CODE NO.	COURSE TITLE	L	T	P	C
EC2043	<u>Wireless networks</u>	3	0	0	3
EC2044	<u>Telecommunication Switching and Networks</u>	3	0	0	3
EC2045	<u>Satellite Communication</u>	3	0	0	3
EC2048	<u>Telecommunication System Modeling and Simulation</u>	3	0	0	3
EC2049	<u>Radar and Navigational Aids</u>	3	0	0	3
EC2054	<u>Optical Networks</u>	3	0	0	3

  
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## ANNA UNIVERSITY, CHENNAI

## AFFILIATED INSTITUTIONS

R-2013

## B.E. ELECTRONICS AND COMMUNICATION ENGINEERING

## I – VIII SEMESTERS CURRICULUM AND SYLLABUS


## SEMESTER I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS6151	<u>Technical English – I</u>	3	1	0	4
2.	MA6151	<u>Mathematics – I</u>	3	1	0	4
3.	PH6151	<u>Engineering Physics – I</u>	3	0	0	3
4.	CY6151	<u>Engineering Chemistry – I</u>	3	0	0	3
5.	GE6151	<u>Computer Programming</u>	3	0	0	3
6.	GE6152	<u>Engineering Graphics</u>	2	0	3	4
<b>PRACTICALS</b>						
7.	GE6161	<u>Computer Practices Laboratory</u>	0	0	3	2
8.	GE6162	<u>Engineering Practices Laboratory</u>	0	0	3	2
9.	GE6163	<u>Physics and Chemistry Laboratory - I</u>	0	0	2	1
<b>TOTAL</b>			<b>17</b>	<b>2</b>	<b>11</b>	<b>26</b>

## SEMESTER II

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS6251	<u>Technical English – II</u>	3	1	0	4
2.	MA6251	<u>Mathematics – II</u>	3	1	0	4
3.	PH6251	<u>Engineering Physics – II</u>	3	0	0	3
4.	CY6251	<u>Engineering Chemistry – II</u>	3	0	0	3
5.	EC6201	<u>Electronic Devices</u>	3	0	0	3
6.	EE6201	<u>Circuit Theory</u>	3	1	0	4
<b>PRACTICALS</b>						
7.	GE6262	<u>Physics and Chemistry Laboratory - II</u>	0	0	2	1
8.	EC6211	<u>Circuits and Devices Laboratory</u>	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>3</b>	<b>5</b>	<b>24</b>

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### SEMESTER III

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	MA6351	<u>Transforms and Partial Differential Equations</u>	3	1	0	4
2.	EE6352	<u>Electrical Engineering and Instrumentation</u>	3	1	0	4
3.	EC6301	<u>Object Oriented Programming and Data Structures</u>	3	0	0	3
4.	EC6302	<u>Digital Electronics</u>	3	0	0	3
5.	EC6303	<u>Signals and Systems</u>	3	1	0	4
6.	EC6304	<u>Electronic Circuits- I</u>	3	1	0	4
<b>PRACTICAL</b>						
7.	EC6311	<u>Analog and Digital Circuits Laboratory</u>	0	0	3	2
8.	EC6312	<u>OOPS and Data Structures Laboratory</u>	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>4</b>	<b>6</b>	<b>26</b>

### SEMESTER IV

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	MA6451	<u>Probability and Random Processes</u>	3	1	0	4
2.	EC6401	<u>Electronic Circuits II</u>	3	0	0	3
3.	EC6402	<u>Communication Theory</u>	3	0	0	3
4.	EC6403	<u>Electromagnetic Fields</u>	3	1	0	4
5.	EC6404	<u>Linear Integrated Circuits</u>	3	0	0	3
6.	EC6405	<u>Control System Engineering</u>	3	0	0	3
<b>PRACTICAL</b>						
7.	EC6411	<u>Circuit and Simulation Integrated Laboratory</u>	0	0	3	2
8.	EC6412	<u>Linear Integrated Circuit Laboratory</u>	0	0	3	2
9.	EE6461	<u>Electrical Engineering and Control System Laboratory</u>	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>2</b>	<b>9</b>	<b>26</b>



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**SEMESTER V**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	EC6501	<u>Digital Communication</u>	3	0	0	3
2.	EC6502	<u>Principles of Digital Signal Processing</u>	3	1	0	4
3.	EC6503	<u>Transmission Lines and Wave Guides</u>	3	1	0	4
4.	GE6351	<u>Environmental Science and Engineering</u>	3	0	0	3
5.	EC6504	<u>Microprocessor and Microcontroller</u>	3	0	0	3
<b>PRACTICAL</b>						
6.	EC6511	<u>Digital Signal Processing Laboratory</u>	0	0	3	2
7.	EC6512	<u>Communication System Laboratory</u>	0	0	3	2
8.	EC6513	<u>Microprocessor and Microcontroller Laboratory</u>	0	0	3	2
		<b>TOTAL</b>	<b>15</b>	<b>2</b>	<b>9</b>	<b>23</b>

**SEMESTER VI**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	MG6851	<u>Principles of Management</u>	3	0	0	3
2.	CS6303	<u>Computer Architecture</u>	3	0	0	3
3.	CS6551	<u>Computer Networks</u>	3	0	0	3
4.	EC6601	<u>VLSI Design</u>	3	0	0	3
5.	EC6602	<u>Antenna and Wave propagation</u>	3	0	0	3
6.		Elective I	3	0	0	3
<b>PRACTICAL</b>						
7.	EC6611	<u>Computer Networks Laboratory</u>	0	0	3	2
8.	EC6612	<u>VLSI Design Laboratory</u>	0	0	3	2
9.	GE6674	<u>Communication and Soft Skills - Laboratory Based</u>	0	0	4	2
		<b>TOTAL</b>	<b>18</b>	<b>0</b>	<b>10</b>	<b>24</b>

  
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**SEMESTER VII**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	EC6701	<u>RF and Microwave Engineering</u>	3	0	0	3
2.	EC6702	<u>Optical Communication and Networks</u>	3	0	0	3
3.	EC6703	<u>Embedded and Real Time Systems</u>	3	0	0	3
4.		Elective II	3	0	0	3
5.		Elective III	3	0	0	3
6.		Elective IV	3	0	0	3
<b>PRACTICAL</b>						
7.	EC6711	<u>Embedded Laboratory</u>	0	0	3	2
8.	EC6712	<u>Optical and Microwave Laboratory</u>	0	0	3	2
		<b>TOTAL</b>	<b>18</b>	<b>0</b>	<b>6</b>	<b>22</b>

**SEMESTER VIII**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	EC6801	<u>Wireless Communication</u>	3	0	0	3
2.	EC6802	<u>Wireless Networks</u>	3	0	0	3
3.		Elective V	3	0	0	3
4.		Elective VI	3	0	0	3
<b>PRACTICAL</b>						
5.	EC6811	<u>Project Work</u>	0	0	12	6
		<b>TOTAL</b>	<b>12</b>	<b>0</b>	<b>12</b>	<b>18</b>


**TOTAL CREDITS:189**

**SEMESTER VI**

**ELECTIVE - I**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	EC6001	<u>Medical Electronics</u>	3	0	0	3
2.	EC6002	<u>Advanced Digital Signal Processing</u>	3	0	0	3
3.	CS6401	<u>Operating Systems</u>	3	0	0	3
4.	EC6003	<u>Robotics and Automation</u>	3	0	0	3

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**SEMESTER VII**

**ELECTIVE- II**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
5.	EC6004	<u>Satellite Communication</u>	3	0	0	3
6.	EC6005	<u>Electronic Testing</u>	3	0	0	3
7.	EC6006	Avionics	3	0	0	3
8.	CS6012	<u>Soft Computing</u>	3	0	0	3
9.	IT6005	<u>Digital Image Processing</u>	3	0	0	3
10.	CS6013	Foundation Skills in Integrated Product Development	3	0	0	3

**ELECTIVE- III**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
11.	EC6007	<u>Speech Processing</u>	3	0	0	3
12.	EC6008	<u>Web Technology</u>	3	0	0	3
13.	EC6009	<u>Advanced Computer Architecture</u>	3	0	0	3
14.	EC 6010	<u>Electronics Packaging</u>	3	0	0	3
15.	EC6011	<u>Electro Magnetic Interference and Compatibility</u>	3	0	0	3

**ELECTIVE - IV**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
16.	EC6012	<u>CMOS Analog IC Design</u>	3	0	0	3
17.	EC6013	<u>Advanced Microprocessors and Microcontrollers</u>	3	0	0	3
18.	EC6014	<u>Cognitive Radio</u>	3	0	0	3
19.	EC6015	<u>Radar and Navigational Aids</u>	3	0	0	3
20.	EC6016	<u>Opto Electronic Devices</u>	3	0	0	3


**SEMESTER VIII**

**ELECTIVE –V**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
21.	EC6017	<u>RF System Design</u>	3	0	0	3
22.	CS6003	<u>Ad hoc and Sensors Networks</u>	3	0	0	3
23.	GE6082	<u>Indian Constitution and Society</u>	3	0	0	3
24.	EC6018	<u>Multimedia Compression and Communication</u>	3	0	0	3
25.	GE6075	<u>Professional Ethics in Engineering</u>	3	0	0	3
26.	GE6083	<u>Disaster Management</u>	3	0	0	3

**ELECTIVE – VI**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
27.	EC6019	<u>Data Converters</u>	3	0	0	3
28.	CS6701	<u>Cryptography and Network Security</u>	3	0	0	3
29.	GE6757	<u>Total Quality Management</u>	3	0	0	3
30.	MG6071	<u>Entrepreneurship Development</u>	3	0	0	3
31.	MG6088	<u>Software Project Management</u>	3	0	0	3
32.	GE6084	<u>Human Rights</u>	3	0	0	3

  
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 CHOICE BASED CREDIT SYSTEM  
 I - VIII SEMESTERS CURRICULA AND SYLLABI

**SEMESTER I**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
<b>PRACTICALS</b>								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
<b>TOTAL</b>				<b>31</b>	<b>19</b>	<b>0</b>	<b>12</b>	<b>25</b>

**SEMESTER II**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8253	Physics for Electronics Engineering	BS	3	3	0	0	3
4.	BE8254	Basic Electrical and Instrumentation Engineering	ES	3	3	0	0	3
5.	EC8251	Circuit Analysis	PC	4	4	0	0	4
6.	EC8252	Electronic Devices	PC	3	3	0	0	3
<b>PRACTICALS</b>								
7.	EC8261	Circuits and Devices Laboratory	PC	4	0	0	4	2
8.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
<b>TOTAL</b>				<b>29</b>	<b>21</b>	<b>0</b>	<b>8</b>	<b>25</b>


  
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**SEMESTER III**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MA8352	Linear Algebra and Partial Differential Equations	BS	4	4	0	0	4
2.	EC8393	Fundamentals of Data Structures In C	ES	3	3	0	0	3
3.	EC8351	Electronic Circuits- I	PC	3	3	0	0	3
4.	EC8352	Signals and Systems	PC	4	4	0	0	4
5.	EC8392	Digital Electronics	PC	3	3	0	0	3
6.	EC8391	Control Systems Engineering	PC	3	3	0	0	3
<b>PRACTICALS</b>								
7.	EC8381	Fundamentals of Data Structures in C Laboratory	ES	4	0	0	4	2
8.	EC8361	Analog and Digital Circuits Laboratory	PC	4	0	0	4	2
9.	HS8381	Interpersonal Skills/Listening &Speaking	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>30</b>	<b>20</b>	<b>0</b>	<b>10</b>	<b>25</b>

**SEMESTER IV**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MA8451	Probability and Random Processes	BS	4	4	0	0	4
2.	EC8452	Electronic Circuits II	PC	3	3	0	0	3
3.	EC8491	Communication Theory	PC	3	3	0	0	3
4.	EC8451	Electromagnetic Fields	PC	4	4	0	0	4
5.	EC8453	Linear Integrated Circuits	PC	3	3	0	0	3
6.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
<b>PRACTICALS</b>								
7.	EC8461	Circuits Design and Simulation Laboratory	PC	4	0	0	4	2
8.	EC8462	Linear Integrated Circuits Laboratory	PC	4	0	0	4	2
<b>TOTAL</b>				<b>28</b>	<b>20</b>	<b>0</b>	<b>8</b>	<b>24</b>

  
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**SEMESTER V**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	EC8501	Digital Communication	PC	3	3	0	0	3
2.	EC8553	Discrete-Time Signal Processing	PC	4	4	0	0	4
3.	EC8552	Computer Architecture and Organization	PC	3	3	0	0	3
4.	EC8551	Communication Networks	PC	3	3	0	0	3
5.		Professional Elective I	PE	3	3	0	0	3
6.		Open Elective I	OE	3	3	0	0	3
<b>PRACTICALS</b>								
7.	EC8562	Digital Signal Processing Laboratory	PC	4	0	0	4	2
8.	EC8561	Communication Systems Laboratory	PC	4	0	0	4	2
9.	EC8563	Communication Networks Laboratory	PC	4	0	0	4	2
<b>TOTAL</b>				<b>31</b>	<b>19</b>	<b>0</b>	<b>12</b>	<b>25</b>

**SEMESTER VI**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
2.	EC8095	VLSI Design	PC	3	3	0	0	3
3.	EC8652	Wireless Communication	PC	3	3	0	0	3
4.	MG8591	Principles of Management	HS	3	3	0	0	3
5.	EC8651	Transmission Lines and RF Systems	PC	3	3	0	0	3
6.		Professional Elective -II	PE	3	3	0	0	3
<b>PRACTICALS</b>								
7.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
8.	EC8661	VLSI Design Laboratory	PC	4	0	0	4	2
9.	EC8611	Technical Seminar	EEC	2	0	0	2	1
10.	HS8581	Professional Communication	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>30</b>	<b>18</b>	<b>0</b>	<b>12</b>	<b>24</b>

  
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**SEMESTER VII**

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	EC8701	Antennas and Microwave Engineering	PC	3	3	0	0	3
2.	EC8751	Optical Communication	PC	3	3	0	0	3
3.	EC8791	Embedded and Real Time Systems	PC	3	3	0	0	3
4.	EC8702	Ad hoc and Wireless Sensor Networks	PC	3	3	0	0	3
5.		Professional Elective -III	PE	3	3	0	0	3
6.		Open Elective - II	OE	3	3	0	0	3
<b>PRACTICALS</b>								
7.	EC8711	Embedded Laboratory	PC	4	0	0	4	2
8.	EC8761	Advanced Communication Laboratory	PC	4	0	0	4	2
<b>TOTAL</b>				<b>26</b>	<b>18</b>	<b>0</b>	<b>8</b>	<b>22</b>

**SEMESTER VIII**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.		Professional Elective IV	PE	3	3	0	0	3
2.		Professional Elective V	PE	3	3	0	0	3
<b>PRACTICALS</b>								
3.	EC8811	Project Work	EEC	20	0	0	20	10
<b>TOTAL</b>				<b>26</b>	<b>6</b>	<b>0</b>	<b>20</b>	<b>16</b>

**TOTAL NO. OF CREDITS: 186**

  
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### HUMANITIES AND SOCIAL SCIENCES (HS)

SI.NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	HS8251	Technical English	HS	4	4	0	0	4
3.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
4.	MG8591	Principles of Management	HS	3	3	0	0	3

### BASIC SCIENCES (BS)

SI.NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA8151	Engineering Mathematics I	BS	4	4	0	0	4
2.	PH8151	Engineering Physics	BS	3	3	0	0	3
3.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
4.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
5.	MA8251	Engineering Mathematics II	BS	4	4	0	0	4
6.	PH8253	Physics for Electronics Engineering	BS	3	3	0	0	3
7.	MA8352	Linear Algebra and Partial Differential Equations	BS	4	4	0	0	4
8.	MA8451	Probability and Random Processes	BS	4	4	0	0	4

### ENGINEERING SCIENCES (ES)

SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
2.	GE8152	Engineering Graphics	ES	6	2	0	4	4
3.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
4.	BE8254	Basic Electrical and Instrumentation Engineering	ES	3	3	0	0	3
5.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
6.	EC8393	Fundamentals of Data Structures In C	ES	3	3	0	0	3
7.	EC8381	Fundamentals of Data Structures in C Laboratory	ES	4	0	0	4	2

**PROFESSIONAL CORE (PC)**

Sl.NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	EC8251	Circuit Analysis	PC	4	4	0	0	4
2.	EC8252	Electronic Devices	PC	3	3	0	0	3
3.	EC8261	Circuits and Devices Lab	PC	4	0	0	4	2
4.	EC8351	Electronic Circuits- I	PC	3	3	0	0	3
5.	EC8352	Signals and Systems	PC	4	4	0	0	4
6.	EC8392	Digital Electronics	PC	3	3	0	0	3
7.	EC8391	Control System Engineering	PC	3	3	0	0	3
8.	EC8361	Analog and Digital Circuits Laboratory	PC	4	0	0	4	2
9.	EC8452	Electronic Circuits II	PC	3	3	0	0	3
10.	EC8491	Communication Theory	PC	3	3	0	0	3
11.	EC8451	Electromagnetic Fields	PC	4	4	0	0	4
12.	EC8453	Linear Integrated Circuits	PC	3	3	0	0	3
13.	EC8461	Circuits Design and Simulation Laboratory	PC	4	0	0	4	2
14.	EC8462	Linear Integrated Circuits Laboratory	PC	4	0	0	4	2
15.	EC8501	Digital Communication	PC	3	3	0	0	3
16.	EC8553	Discrete-Time Signal Processing	PC	4	4	0	0	4
17.	EC8651	Transmission Lines and RF Systems	PC	3	3	0	0	3
18.	EC8552	Computer Architecture and Organization	PC	3	3	0	0	3
19.	EC8551	Communication Networks	PC	3	3	0	0	3
20.	EC8562	Digital Signal Processing Laboratory	PC	4	0	0	4	2
21.	EC8561	Communication Systems Laboratory	PC	4	0	0	4	2
22.	EC8563	Communication Networks Laboratory	PC	4	0	0	4	2
23.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
24.	EC8095	VLSI Design	PC	3	3	0	0	3
25.	EC8652	Wireless Communication	PC	3	3	0	0	3
26.	EC8661	VLSI Design Laboratory	PC	4	0	0	4	2

27.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
28.	EC8701	Antennas and Microwave Engineering	PC	3	3	0	0	3
29.	EC8751	Optical Communication	PC	3	3	0	0	3
30.	EC8791	Embedded and Real Time Systems	PC	3	3	0	0	3
31.	EC8702	Ad hoc and Wireless Sensor Networks	PC	3	3	0	0	3
32.	EC8711	Embedded Laboratory	PC	4	0	0	4	2
33.	EC8761	Advanced Communication Laboratory	PC	4	0	0	4	2



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**PROFESSIONAL ELECTIVES (PE)  
SEMESTER V  
ELECTIVE I**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8392	Object Oriented Programming	PE	3	3	0	0	3
2.	EC8073	Medical Electronics	PE	3	3	0	0	3
3.	CS8493	Operating Systems	PE	3	3	0	0	3
4.	EC8074	Robotics and Automation	PE	3	3	0	0	3
5.	EC8075	Nano Technology and Applications	PE	3	3	0	0	3
6.	GE8074	Human Rights	PE	3	3	0	0	3
7.	GE8077	Total Quality Management	PE	3	3	0	0	3

**SEMESTER VI  
ELECTIVE II**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8792	Cryptography and Network Security	PE	3	3	0	0	3
2.	EC8091	Advanced Digital Signal Processing	PE	3	3	0	0	3
3.	EC8001	MEMS and NEMS	PE	3	3	0	0	3
4.	EC8002	Multimedia Compression and Communication	PE	3	3	0	0	3
5.	EC8003	CMOS Analog IC Design	PE	3	3	0	0	3
6.	EC8004	Wireless Networks	PE	3	3	0	0	3
7.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3

**SEMESTER VII  
ELECTIVE III**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	EC8092	Advanced Wireless Communication	PE	3	3	0	0	3
2.	EC8071	Cognitive Radio	PE	3	3	0	0	3
3.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3
4.	CS8082	Machine Learning Techniques	PE	3	3	0	0	3
5.	EC8005	Electronics Packaging and Testing	PE	3	3	0	0	3
6.	EC8006	Mixed Signal IC Design	PE	3	3	0	0	3
7.	GE8071	Disaster Management	PE	3	3	0	0	3



**SEMESTER VIII  
ELECTIVE IV**

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	EC8072	Electro Magnetic Interference and Compatibility	PE	3	3	0	0	3
2.	EC8007	Low power SoC Design	PE	3	3	0	0	3
3.	EC8008	Photonic Networks	PE	3	3	0	0	3
4.	EC8009	Compressive Sensing	PE	3	3	0	0	3
5.	EC8093	Digital Image Processing	PE	3	3	0	0	3
6.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3


**SEMESTER VIII  
ELECTIVE V**

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	EC8010	Video Analytics	PE	3	3	0	0	3
2.	EC8011	DSP Architecture and Programming	PE	3	3	0	0	3
3.	EC8094	Satellite Communication	PE	3	3	0	0	3
4.	CS8086	Soft Computing	PE	3	3	0	0	3
5.	IT8006	Principles of Speech Processing	PE	3	3	0	0	3
6.	GE8073	Fundamentals of Nano Science	PE	3	3	0	0	3

\*Professional Electives are grouped according to elective number as was done previously.

**EMPLOYABILITY ENHANCEMENT COURSES (EEC)**

S.NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8381	Interpersonal Skills/Listening & Speaking	EEC	2	0	0	2	1
2.	EC8611	Technical Seminar	EEC	2	0	0	2	1
3.	HS8581	Professional Communication	EEC	2	0	0	2	1
4.	EC8811	Project Work	EEC	20	0	0	20	10

  
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**SUMMARY**

S.NO.	SUBJECT AREA	CREDITS AS PER SEMESTER								CREDITS TOTAL	Percentage
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	4	4		3		3			14	7.56%
2.	BS	12	7	4	4					27	14.6%
3.	ES	9	5	5						19	10.27%
4.	PC		9	15	17	19	16	16		92	50%
5.	PE					3	3	3	6	15	8.10%
6.	OE					3		3		6	3.24%
7.	EEC			1			2		10	13	6.48%
	<b>Total</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>24</b>	<b>25</b>	<b>24</b>	<b>22</b>	<b>16</b>	<b>186</b>	
8.	<b>Non Credit / Mandatory</b>										

  
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I SEMESTER CURRICULA AND SYLLABI

(Common to all B.E. / B.Tech Programmes except B.E. Marine Engineering)**SEMESTER I**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS2111	<u>Technical English - I</u>	3	1	0	4
2.	MA2111	<u>Mathematics - I</u>	3	1	0	4
3.	PH2111	<u>Engineering Physics - I</u>	3	0	0	3
4.	CY2111	<u>Engineering Chemistry - I</u>	3	0	0	3
5.	GE2111	<u>Engineering Graphics</u>	2	3	0	5
6.	GE2112	<u>Fundamentals of Computing and Programming</u>	3	0	0	3
<b>PRACTICAL</b>						
7.	GE2115	<u>Computer Practice Laboratory -I</u>	0	0	3	2
8.	GE2116	<u>Engineering Practices Laboratory</u>	0	0	3	2
9.		* <u>Physics &amp; Chemistry Laboratory I</u>	0	0	3	-
<b>TOTAL : 26 CREDITS</b>						

\* Laboratory classes on alternate weeks for Physics and Chemistry. The lab examinations will be held only in the second semester (Including the first semester experiments also).

  
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**B.E. MECHANICAL ENGINEERING  
II TO VIII SEMESTERS CURRICULUM AND SYLLABI**

## SEMESTER II

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS2161	<u>Technical English – II*</u>	3	1	0	4
2.	MA2161	<u>Mathematics – II*</u>	3	1	0	4
3.	PH2161	<u>Engineering Physics – II*</u>	3	0	0	3
4.	CY2161	<u>Engineering Chemistry – II*</u>	3	0	0	3
5. a	ME2151	<u>Engineering Mechanics</u> (For non-circuit branches)	3	1	0	4
5. b	EE2151	<u>Circuit Theory</u> (For branches under Electrical Faculty)	3	1	0	4
5. c	EC2151	<u>Electric Circuits and Electron Devices</u> (For branches under I & C Faculty)	3	1	0	4
6. a	GE2151	<u>Basic Electrical &amp; Electronics Engineering</u> (For non-circuit branches)	4	0	0	4
6. b	GE2152	<u>Basic Civil &amp; Mechanical Engineering</u> (For circuit branches)	4	0	0	4
<b>PRACTICAL</b>						
7.	GE2155	<u>Computer Practice Laboratory-II*</u>	0	1	2	2
8.	GS2165	<u>Physics &amp; Chemistry Laboratory - II*</u>	0	0	3	2
9. a	ME2155	<u>Computer Aided Drafting and Modeling Laboratory</u> (For non-circuits branches)	0	1	2	2

  
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9. b	EE2155	<u>Electrical Circuits Laboratory</u> (For branches under Electrical Faculty)	0	0	3	2
9. c	EC2155	<u>Circuits and Devices Laboratory</u> (For branches under I & C Faculty)	0	0	3	2
<b>TOTAL : 28 CREDITS</b>						
10.	-	<u>English Language Laboratory</u> *	0	0	2	-

\* Common to all B.E. / B.Tech. Programmes

+ Offering English Language Laboratory as an additional subject (with no marks) during 2<sup>nd</sup> semester may be decided by the respective Colleges affiliated to Anna University Chennai.

### A. CIRCUIT BRANCHES

#### I Faculty of Electrical Engineering

1. B.E. Electrical and Electronics Engineering
2. B.E. Electronics and Instrumentation Engineering
3. B.E. Instrumentation and Control Engineering

#### II Faculty of Information and Communication Engineering

1. B.E. Computer Science and Engineering
2. B.E. Electronics and Communication Engineering
3. B.E. Bio Medical Engineering
4. B.Tech. Information Technology

### B. NON – CIRCUIT BRANCHES

#### I Faculty of Civil Engineering

1. B.E. Civil Engineering

#### II Faculty of Mechanical Engineering

1. B.E. Aeronautical Engineering
2. B.E. Automobile Engineering
3. B.E. Marine Engineering
4. B.E. Mechanical Engineering
5. B.E. Production Engineering

#### III Faculty of Technology

1. B.Tech. Chemical Engineering
2. B.Tech. Biotechnology
3. B.Tech. Polymer Technology
4. B.Tech. Textile Technology
5. B.Tech. Textile Technology (Fashion Technology)
6. B.Tech. Petroleum Engineering

**SEMESTER III**

(Applicable to the students admitted from the Academic year 2008 – 2009 onwards)

CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
MA 2211	Transforms and Partial Differential Equation	3	1	0	4
ME 2201	Manufacturing Technology – I	3	0	0	3
ME 2202	Engineering Thermodynamics	3	1	0	4
ME 2203	Kinematics of Machinery	3	1	0	4
ME 2204	Fluid Mechanics and Machinery	3	1	0	4
ME 2205	Electrical Drives and Control	3	0	0	3
<b>PRACTICAL</b>					
ME 2207	Manufacturing Technology Lab – I	0	0	3	2
ME 2208	Fluid Mechanics and Machinery Laboratory	0	0	3	2
ME 2209	Electrical Engineering Laboratory	0	0	3	2
<b>TOTAL</b>		<b>18</b>	<b>4</b>	<b>9</b>	<b>28</b>

**SEMESTER IV**

(Applicable to the students admitted from the Academic year 2008 – 2009 onwards)

CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
MA 2266	Statistics and Numerical Methods	3	1	0	4
ME 2251	Heat and Mass Transfer	3	1	0	4
ME 2252	Manufacturing Technology – II	3	0	0	3
ME 2253	Engineering Materials and Metallurgy	3	0	0	3
ME 2254	Strength of Materials	3	1	0	4
ME 2255	Electronics and Microprocessors	3	0	0	3
<b>PRACTICAL</b>					
ME 2258	Manufacturing Technology Lab – II	0	0	3	2
ME 2256	Strength of Materials Lab	0	0	3	2
ME 2257	Computer Aided Machine Drawing Laboratory	0	0	4	2
<b>TOTAL</b>		<b>18</b>	<b>3</b>	<b>10</b>	<b>27</b>

**SEMESTER V**

(Applicable to the students admitted from the Academic year 2008 – 2009 onwards)

CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
GE 2021	Environmental Science and Engineering	3	0	0	3
ME 2301	Thermal Engineering	3	1	0	4
ME 2302	Dynamics of Machinery	3	1	0	4
ME 2303	Design of Machine Elements	3	1	0	4
ME 2304	Engineering Metrology & Measurements	3	0	0	3
ME 2305	Applied Hydraulics & Pneumatics	3	0	0	3
<b>PRACTICALS</b>					
ME 2306	Thermal Engineering Lab – I	0	0	3	2
ME 2307	Dynamics Lab	0	0	3	2
ME 2308	Metrology & Measurements Lab	0	0	3	2
ME 2309	CAD / CAM Lab	0	0	3	2
<b>TOTAL</b>		<b>18</b>	<b>3</b>	<b>12</b>	<b>29</b>

### SEMESTER VI


CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
MG 2351	Principles of Management	3	0	0	3
ME 2351	Gas Dynamics and Jet Propulsion	3	1	0	4
ME 2352	Design of Transmission Systems	3	1	0	4
ME 2354	Automobile Engineering	3	0	0	3
ME 2353	Finite Element Analysis	3	1	0	4
	Elective – I	3	0	0	3
<b>PRACTICALS</b>					
ME 2355	Thermal Engineering Lab – II	0	0	3	2
ME 2356	Design & Fabrication Project	0	0	4	2
GE 2321	Communication Skills Lab	0	0	4	2
<b>TOTAL</b>		<b>18</b>	<b>3</b>	<b>11</b>	<b>27</b>

### SEMESTER VII

CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
GE 2022	Total Quality Management	3	0	0	3
ME 2401	Mechatronics	3	0	0	3
ME 2402	Computer Integrated Manufacturing	3	0	0	3
ME 2403	Power Plant Engineering	3	0	0	3
	Elective – II	3	0	0	3
	Elective – III	3	0	0	3
<b>PRACTICALS</b>					
ME 2404	Computer Aided Simulation & Analysis Laboratory	0	0	3	2
ME 2405	Mechatronics Lab	0	0	3	2
<b>TOTAL</b>		<b>18</b>	<b>0</b>	<b>6</b>	<b>22</b>

### SEMESTER VIII

CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
MG 2451	Engineering Economics and Cost Analysis	3	0	0	3
	Elective – IV	3	0	0	3
	Elective – V	3	0	0	3
<b>PRACTICALS</b>					
ME 2452	Comprehension	0	0	2	1
ME 2453	Project Work	0	0	12	6
<b>TOTAL</b>		<b>9</b>	<b>0</b>	<b>14</b>	<b>16</b>

  
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**SEMESTER VI****Elective I**

CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
MG 2021	Marketing Management	3	0	0	3
ME 2021	Quality Control & Reliability Engineering	3	0	0	3
ME 2022	Refrigeration & Air conditioning	3	0	0	3
ME 2023	Renewable Sources of Energy	3	0	0	3
ME 2024	Industrial Tribology	3	0	0	3
ME 2025	Vibration & Noise Control	3	0	0	3
ME 2026	Unconventional Machining Processes	3	0	0	3

**SEMESTER VII****Elective II**

CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
ME 2027	Process Planning & Cost Estimation	3	0	0	3
ME 2029	Design of Jigs, Fixtures & Press Tools	3	0	0	3
ME 2030	Composite Materials	3	0	0	3

**Elective III**

CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
ME 2028	Robotics	3	0	0	3
ME 2031	Thermal Turbo machines	3	0	0	3
ME 2032	Computational Fluid Dynamics	3	0	0	3
ME 2034	Nuclear Engineering	3	0	0	3

**SEMESTER-VIII****Elective IV**

CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
GE 2025	Professional Ethics In Engineering	3	0	0	3
ME 2035	Entrepreneurship Development	3	0	0	3
ME 2036	Production Planning and Control	3	0	0	3
ME 2037	Maintenance Engineering	3	0	0	3
ME 2038	Operations Research	3	0	0	3

**Elective V**

CODE NO.	COURSE TITLE	L	T	P	C
<b>THEORY</b>					
GE2023	Fundamentals of Nanoscience	3	0	0	3
ME 2040	Pressure Vessels & Piping Design	3	0	0	3
ME 2041	Advanced I.C. Engines	3	0	0	3
ME 2042	Design of Heat Exchangers	3	0	0	3


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R - 2013

B.E. MECHANICAL ENGINEERING

I - VIII SEMESTERS CURRICULUM AND SYLLABUS

SEMESTER I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS6151	<u>Technical English - I</u>	3	1	0	4
2.	MA6151	<u>Mathematics - I</u>	3	1	0	4
3.	PH6151	<u>Engineering Physics - I</u>	3	0	0	3
4.	CY6151	<u>Engineering Chemistry - I</u>	3	0	0	3
5.	GE6151	<u>Computer Programming</u>	3	0	0	3
6.	GE6152	<u>Engineering Graphics</u>	2	0	3	4
<b>PRACTICALS</b>						
7.	GE6161	<u>Computer Practices Laboratory</u>	0	0	3	2
8.	GE6162	<u>Engineering Practices Laboratory</u>	0	0	3	2
9.	GE6163	<u>Physics and Chemistry Laboratory - I</u>	0	0	2	1
<b>TOTAL</b>			<b>17</b>	<b>2</b>	<b>11</b>	<b>26</b>

SEMESTER II

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS6251	<u>Technical English - II</u>	3	1	0	4
2.	MA6251	<u>Mathematics - II</u>	3	1	0	4
3.	PH6251	<u>Engineering Physics - II</u>	3	0	0	3
4.	CY6251	<u>Engineering Chemistry - II</u>	3	0	0	3
5.	GE6252	<u>Basic Electrical and Electronics Engineering</u>	4	0	0	4
6.	GE6253	<u>Engineering Mechanics</u>	3	1	0	4
<b>PRACTICALS</b>						
7.	GE6261	<u>Computer Aided Drafting and Modeling Laboratory</u>	0	1	2	2
8.	GE6262	<u>Physics and Chemistry Laboratory - II</u>	0	0	2	1
<b>TOTAL</b>			<b>19</b>	<b>4</b>	<b>4</b>	<b>25</b>



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**SEMESTER III**

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	MA6351	Transforms and Partial Differential Equations	3	1	0	4
2.	CE6306	Strength of Materials	3	1	0	4
3.	ME6301	Engineering Thermodynamics	3	0	0	3
4.	CE6451	Fluid Mechanics and Machinery	3	0	0	3
5.	ME6302	Manufacturing Technology - I	3	0	0	3
6.	EE6351	Electrical Drives and Controls	3	0	0	3
<b>PRACTICAL</b>						
7.	ME6311	Manufacturing Technology Laboratory - I	0	0	3	2
8.	CE6461	Fluid Mechanics and Machinery Laboratory	0	0	3	2
9.	EE6365	Electrical Engineering Laboratory	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>2</b>	<b>9</b>	<b>26</b>

**SEMESTER IV**

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	MA6452	Statistics and Numerical Methods	3	1	0	4
2.	ME6401	Kinematics of Machinery	3	0	0	3
3.	ME6402	Manufacturing Technology- II	3	0	0	3
4.	ME6403	Engineering Materials and Metallurgy	3	0	0	3
5.	GE6351	Environmental Science and Engineering	3	0	0	3
6.	ME6404	Thermal Engineering	3	0	0	3
<b>PRACTICAL</b>						
7.	ME6411	Manufacturing Technology Laboratory-II	0	0	3	2
8.	ME6412	Thermal Engineering Laboratory - I	0	0	3	2
9.	CE6315	Strength of Materials Laboratory	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>1</b>	<b>9</b>	<b>25</b>

  
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### SEMESTER V

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	ME6501	Computer Aided Design	3	0	0	3
2.	ME6502	Heat and Mass Transfer	3	0	0	3
3.	ME6503	Design of Machine Elements	3	0	0	3
4.	ME6504	Metrology and Measurements	3	0	0	3
5.	ME6505	Dynamics of Machines	3	0	0	3
6.	GE6075	Professional Ethics in Engineering	3	0	0	3
<b>PRACTICAL</b>						
7.	ME6511	Dynamics Laboratory	0	0	3	2
8.	ME6512	Thermal Engineering Laboratory-II	0	0	3	2
9.	ME6513	Metrology and Measurements Laboratory	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>0</b>	<b>9</b>	<b>24</b>


### SEMESTER VI

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	ME6601	Design of Transmission Systems	3	0	0	3
2.	MG6851	Principles of Management	3	0	0	3
3.	ME6602	Automobile Engineering	3	0	0	3
4.	ME6603	Finite Element Analysis	3	0	0	3
5.	ME6604	Gas Dynamics and Jet Propulsion	3	0	0	3
6.		Elective - I	3	0	0	3
<b>PRACTICAL</b>						
7.	ME6611	C.A.D. / C.A.M. Laboratory	0	0	3	2
8.	ME6612	Design and Fabrication Project	0	0	4	2
9.	GE6674	Communication and Soft Skills- Laboratory Based	0	0	4	2
<b>TOTAL</b>			<b>18</b>	<b>0</b>	<b>11</b>	<b>24</b>

### SEMESTER VII

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	ME6701	Power Plant Engineering	3	0	0	3
2.	ME6702	Mechatronics	3	0	0	3
3.	ME6703	Computer Integrated Manufacturing Systems	3	0	0	3
4.	GE6757	Total Quality Management	3	0	0	3
5.		Elective - II	3	0	0	3
6.		Elective - III	3	0	0	3
<b>PRACTICAL</b>						
7.	ME6711	Simulation and Analysis Laboratory	0	0	3	2
8.	ME6712	Mechatronics Laboratory	0	0	3	2
9.	ME6713	Comprehension	0	0	2	1
<b>TOTAL</b>			<b>18</b>	<b>0</b>	<b>8</b>	<b>23</b>

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**SEMESTER VIII**

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	MG6863	Engineering Economics	3	0	0	3
2.		Elective – IV	3	0	0	3
3.		Elective – V	3	0	0	3
<b>PRACTICAL</b>						
4.	ME6811	Project Work	0	0	12	6
<b>TOTAL</b>			<b>9</b>	<b>0</b>	<b>12</b>	<b>15</b>

**TOTAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE = 188**

**ELECTIVES FOR B.E. MECHANICAL ENGINEERING**

**SEMESTER VI**

**Elective I**

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	MG6072	Marketing Management	3	0	0	3
2.	ME6001	Quality Control and Reliability Engineering	3	0	0	3
3.	ME6002	Refrigeration and Air conditioning	3	0	0	3
4.	ME6003	Renewable Sources of Energy	3	0	0	3
5.	ME6004	Unconventional Machining Processes	3	0	0	3

**SEMESTER VII**

**Elective II**

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	ME6005	Process Planning and Cost Estimation	3	0	0	3
2.	ME6006	Design of Jigs, Fixtures and Press Tools	3	0	0	3
3.	ME6007	Composite Materials and Mechanics	3	0	0	3
4.	ME6008	Welding Technology	3	0	0	3
5.	ME6009	Energy Conservation and Management	3	0	0	3
6.	GE6083	Disaster Management	3	0	0	3

**Elective III**

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	ME6010	Robotics	3	0	0	3
2.	GE6081	Fundamentals of Nanoscience	3	0	0	3
3.	ME6011	Thermal Turbo Machines	3	0	0	3
4.	ME6012	Maintenance Engineering	3	0	0	3
5.	EE6007	Micro Electro Mechanical Systems	3	0	0	3
6.	ME6021	Hydraulics and Pneumatics	3	0	0	3

**SEMESTER-VIII  
Elective IV**

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	IE6605	Production Planning and Control	3	0	0	3
2.	MG6071	Entrepreneurship Development	3	0	0	3
3.	ME6013	Design of Pressure Vessels and Piping	3	0	0	3
4.	ME6014	Computational Fluid Dynamics	3	0	0	3
5.	ME6015	Operations Research	3	0	0	3
6.	GE6084	Human Rights	3	0	0	3

**Elective V**

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	ME6016	Advanced I.C. Engines	3	0	0	3
2.	ME6017	Design of Heat Exchangers	3	0	0	3
3.	ME6018	Additive Manufacturing	3	0	0	3
4.	ME6019	Non Destructive Testing and Materials	3	0	0	3
5.	ME6020	Vibration and Noise Control	3	0	0	3

  
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**SEMESTER I**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
<b>PRACTICALS</b>								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
<b>TOTAL</b>				<b>31</b>	<b>19</b>	<b>0</b>	<b>12</b>	<b>25</b>

**SEMESTER II**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8251	Materials Science	BS	3	3	0	0	3
4.	BE8253	Basic Electrical, Electronics and Instrumentation Engineering	ES	3	3	0	0	3
5.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
6.	GE8292	Engineering Mechanics	ES	5	3	2	0	4
<b>PRACTICALS</b>								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	ES	4	0	0	4	2
<b>TOTAL</b>				<b>30</b>	<b>20</b>	<b>2</b>	<b>8</b>	<b>25</b>

**SEMESTER III**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
2.	ME8391	Engineering Thermodynamics	PC	5	3	2	0	4
3.	CE8394	Fluid Mechanics and Machinery	ES	4	4	0	0	4
4.	ME8351	Manufacturing Technology - I	PC	3	3	0	0	3
5.	EE8353	Electrical Drives and Controls	ES	3	3	0	0	3
<b>PRACTICAL</b>								
6.	ME8361	Manufacturing Technology Laboratory - I	PC	4	0	0	4	2
7.	ME8381	Computer Aided Machine Drawing	PC	4	0	0	4	2
8.	EE8361	Electrical Engineering Laboratory	ES	4	0	0	4	2
9.	HS8381	Interpersonal Skills / Listening & Speaking	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>33</b>	<b>17</b>	<b>2</b>	<b>14</b>	<b>25</b>

**SEMESTER IV**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MA8452	Statistics and Numerical Methods	BS	4	4	0	0	4
2.	ME8492	Kinematics of Machinery	PC	3	3	0	0	3
3.	ME8451	Manufacturing Technology – II	PC	3	3	0	0	3
4.	ME8491	Engineering Metallurgy	PC	3	3	0	0	3
5.	CE8395	Strength of Materials for Mechanical Engineers	ES	3	3	0	0	3
6.	ME8493	Thermal Engineering- I	PC	3	3	0	0	3
<b>PRACTICAL</b>								
7.	ME8462	Manufacturing Technology Laboratory – II	PC	4	0	0	4	2
8.	CE8381	Strength of Materials and Fluid Mechanics and Machinery Laboratory	ES	4	0	0	4	2
9.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>29</b>	<b>19</b>	<b>0</b>	<b>10</b>	<b>24</b>


  
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**SEMESTER V**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	ME8595	Thermal Engineering- II	PC	3	3	0	0	3
2.	ME8593	Design of Machine Elements	PC	3	3	0	0	3
3.	ME8501	Metrology and Measurements	PC	3	3	0	0	3
4.	ME8594	Dynamics of Machines	PC	4	4	0	0	4
5.		Open Elective I	OE	3	3	0	0	3
<b>PRACTICAL</b>								
6.	ME8511	Kinematics and Dynamics Laboratory	PC	4	0	0	4	2
7.	ME8512	Thermal Engineering Laboratory	PC	4	0	0	4	2
8.	ME8513	Metrology and Measurements Laboratory	PC	4	0	0	4	2
<b>TOTAL</b>				<b>28</b>	<b>16</b>	<b>0</b>	<b>12</b>	<b>22</b>

**SEMESTER VI**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	ME8651	Design of Transmission Systems	PC	3	3	0	0	3
2.	ME8691	Computer Aided Design and Manufacturing	PC	3	3	0	0	3
3.	ME8693	Heat and Mass Transfer	PC	5	3	2	0	4
4.	ME8692	Finite Element Analysis	PC	3	3	0	0	3
5.	ME8694	Hydraulics and Pneumatics	PC	3	3	0	0	3
6.		Professional Elective - I	PE	3	3	0	0	3
<b>PRACTICAL</b>								
7.	ME8681	CAD / CAM Laboratory	PC	4	0	0	4	2
8.	ME8682	Design and Fabrication Project	EEC	4	0	0	4	2
9.	HS8581	Professional Communication	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>30</b>	<b>18</b>	<b>2</b>	<b>10</b>	<b>24</b>

  
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**SEMESTER VII**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	ME8792	Power Plant Engineering	PC	3	3	0	0	3
2.	ME8793	Process Planning and Cost Estimation	PC	3	3	0	0	3
3.	ME8791	Mechatronics	PC	3	3	0	0	3
4.		Open Elective - II	OE	3	3	0	0	3
5.		Professional Elective – II	PE	3	3	0	0	3
6.		Professional Elective – III	PE	3	3	0	0	3
<b>PRACTICAL</b>								
7.	ME8711	Simulation and Analysis Laboratory	PC	4	0	0	4	2
8.	ME8781	Mechatronics Laboratory	PC	4	0	0	4	2
9.	ME8712	Technical Seminar	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>28</b>	<b>18</b>	<b>0</b>	<b>10</b>	<b>23</b>

**SEMESTER VIII**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MG8591	Principles of Management	HS	3	3	0	0	3
2.		Professional Elective– IV	PE	3	3	0	0	3
<b>PRACTICAL</b>								
3.	ME8811	Project Work	EEC	20	0	0	20	10
<b>TOTAL</b>				<b>29</b>	<b>9</b>	<b>0</b>	<b>20</b>	<b>16</b>

**TOTAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE = 184**

  
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**HUMANITIES AND SOCIAL SCIENCES (HS)**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	HS8251	Technical English	HS	4	4	0	0	4
3.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
4.	MG8591	Principles of Management	HS	3	3	0	0	3

**BASIC SCIENCE (BS)**


SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA8151	Engineering Mathematics - I	BS	5	3	2	0	4
2.	PH8151	Engineering Physics	BS	3	3	0	0	3
3.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
4.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
5.	MA8251	Engineering Mathematics II	BS	4	4	0	0	4
6.	PH8251	Materials Science	BS	3	3	0	0	3
7.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
8.	MA8452	Statistics and Numerical Methods	BS	4	4	0	0	4

**ENGINEERING SCIENCES (ES)**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
2.	GE8152	Engineering Graphics	ES	6	2	0	4	4
3.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
4.	BE8253	Basic Electrical, Electronics and Instrumentation Engineering	ES	3	3	0	0	3
5.	GE8292	Engineering Mechanics	ES	5	3	2	0	4
6.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
7.	BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	ES	4	0	0	4	2
8.	CE8394	Fluid Mechanics and Machinery	ES	5	3	2	0	4
9.	EE8353	Electrical Drives and Controls	ES	3	3	0	0	3
10.	EE8361	Electrical Engineering Laboratory	ES	4	0	0	4	2
11.	CE8395	Strength of Materials for Mechanical Engineers	ES	3	3	0	0	3
12.	CE8381	Strength of Materials and Fluid Mechanics and Machinery Laboratory	ES	4	0	0	4	2

**PROFESSIONAL CORE (PC)**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ME8391	Engineering Thermodynamics	PC	5	3	2	0	4
2.	ME8351	Manufacturing Technology - I	PC	3	3	0	0	3
3.	ME8361	Manufacturing Technology Laboratory - I	PC	4	0	0	4	2
4.	ME8381	Computer Aided Machine Drawing	PC	4	0	0	4	2
5.	ME8492	Kinematics of Machinery	PC	3	3	0	0	3
6.	ME8451	Manufacturing Technology- II	PC	3	3	0	0	3
7.	ME8491	Engineering Metallurgy	PC	3	3	0	0	3
8.	ME8493	Thermal Engineering- I	PC	3	3	0	0	3
9.	ME8462	Manufacturing Technology Laboratory-II	PC	4	0	0	4	2
10.	ME8595	Thermal Engineering- II	PC	3	3	0	0	3
11.	ME8593	Design of Machine Elements	PC	3	3	0	0	3
12.	ME8501	Metrology and Measurements	PC	3	3	0	0	3
13.	ME8594	Dynamics of Machines	PC	4	4	0	0	4
14.	ME8511	Kinematics and Dynamics Laboratory	PC	4	0	0	4	2
15.	ME8512	Thermal Engineering Laboratory	PC	4	0	0	4	2
16.	ME8513	Metrology and Measurements Laboratory	PC	4	0	0	4	2
17.	ME8651	Design of Transmission Systems	PC	3	3	0	0	3
18.	ME8691	Computer Aided Design and Manufacturing	PC	3	3	0	0	3
19.	ME8693	Heat and Mass Transfer	PC	5	3	2	0	4
20.	ME8692	Finite Element Analysis	PC	3	3	0	0	3
21.	ME8694	Hydraulics and Pneumatics	PC	3	3	0	0	3
22.	ME8681	C.A.D. / C.A.M. Laboratory	PC	4	0	0	4	2
23.	ME8682	Design and Fabrication Project	PC	4	0	0	4	2
24.	ME8792	Power Plant Engineering	PC	3	3	0	0	3
25.	ME8791	Mechatronics	PC	3	3	0	0	3
26.	ME8793	Process Planning and Cost Estimation	PC	3	3	0	0	3
27.	ME8711	Simulation and Analysis Laboratory	PC	4	0	0	4	2
28.	ME8781	Mechatronics Laboratory	PC	4	0	0	4	2

  
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**PROFESSIONAL ELECTIVES FOR B.E. MECHANICAL ENGINEERING**

**SEMESTER VI, ELECTIVE I**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ME8091	Automobile Engineering	PE	3	3	0	0	3
2.	PR8592	Welding Technology	PE	3	3	0	0	3
3.	ME8096	Gas Dynamics and Jet Propulsion	PE	3	3	0	0	3
4.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3
5.	GE8073	Fundamentals of Nano Science	PE	3	3	0	0	3

**SEMESTER VII, ELECTIVE II**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ME8071	Refrigeration and Air conditioning	PE	3	3	0	0	3
2.	ME8072	Renewable Sources of Energy	PE	3	3	0	0	3
3.	ME8098	Quality Control and Reliability Engineering	PE	3	3	0	0	3
4.	ME8073	Unconventional Machining Processes	PE	3	3	0	0	3
5.	MG8491	Operations Research	PE	3	3	0	0	3
6.	MF8071	Additive Manufacturing	PE	3	3	0	0	3
7.	GE8077	Total Quality Management	PE	3	3	0	0	3

**SEMESTER VII, ELECTIVE III**


SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ME8099	Robotics	PE	3	3	0	0	3
2.	ME8095	Design of Jigs, Fixtures and Press Tools	PE	3	3	0	0	3
3.	ME8093	Computational Fluid Dynamics	PE	3	3	0	0	3
4.	ME8097	Non Destructive Testing and Evaluation	PE	3	3	0	0	3
5.	ME8092	Composite Materials and Mechanics	PE	3	3	0	0	3
6.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3
7.	GE8074	Human Rights	PE	3	3	0	0	3
8.	GE8071	Disaster Management	PE	3	3	0	0	3

**SEMESTER VIII, ELECTIVE IV**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	IE8693	Production Planning and Control	PE	3	3	0	0	3
2.	MG8091	Entrepreneurship Development	PE	3	3	0	0	3
3.	ME8094	Computer Integrated Manufacturing Systems	PE	3	3	0	0	3
4.	ME8074	Vibration and Noise Control	PE	3	3	0	0	3
5.	EE8091	Micro Electro Mechanical Systems	PE	3	3	0	0	3
6.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3

**EMPLOYABILITY ENHANCEMENT COURSES (EEC)**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8381	Interpersonal Skills/Listening &	EEC	4	0	0	4	2
2.	ME8712	Technical Seminar	EEC	2	0	0	2	1
3.	ME8811	Project Work	EEC	20	0	0	20	12
4.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
5.	ME8682	Design and Fabrication Project	EEC	4	0	0	4	2
6.	HS8581	Professional Communication	EEC	2	0	0	2	1

  
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**SUMMARY**

SL. NO.	SUBJECT AREA	CREDITS PER SEMESTER								CREDITS TOTAL	Percentage %
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	4	7	-	-	-	-	-	3	14	7.61%
2.	BS	12	7	4	4	-	-	-	-	27	14.67%
3.	ES	9	11	9	5	-	-	-	-	33	17.80%
4.	PC	-	-	11	14	19	18	13	-	74	40.22%
5.	PE	-	-	-	-	-	3	6	3	15	8.15%
6.	OE	-	-	-	-	3	-	3	-	6	3.26%
7.	EEC	-	-	1	1	-	3	1	10	16	7.6%
	<b>Total</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>24</b>	<b>22</b>	<b>24</b>	<b>23</b>	<b>16</b>	<b>184</b>	
8.	Non Credit / Mandatory										

  
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# ANNA UNIVERSITY, CHENNAI

AFFILIATED INSTITUTIONS

**R - 2008**


I SEMESTER CURRICULA AND SYLLABI

(Common to all B.E. / B.Tech Programmes except B.E. Marine Engineering)

## SEMESTER I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS2111	<u>Technical English - I</u>	3	1	0	4
2.	MA2111	<u>Mathematics - I</u>	3	1	0	4
3.	PH2111	<u>Engineering Physics - I</u>	3	0	0	3
4.	CY2111	<u>Engineering Chemistry - I</u>	3	0	0	3
5.	GE2111	<u>Engineering Graphics</u>	2	3	0	5
6.	GE2112	<u>Fundamentals of Computing and Programming</u>	3	0	0	3
<b>PRACTICAL</b>						
7.	GE2115	<u>Computer Practice Laboratory -I</u>	0	0	3	2
8.	GE2116	<u>Engineering Practices Laboratory</u>	0	0	3	2
9.		* <u>Physics &amp; Chemistry Laboratory I</u>	0	0	3	-
						<b>TOTAL : 26 CREDITS</b>

\* Laboratory classes on alternate weeks for Physics and Chemistry. The lab examinations will be held only in the second semester (Including the first semester experiments also).

  
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**B.TECH. INFORMATION TECHNOLOGY**

**II - VIII SEMESTERS CURRICULA AND SYLLABI**

**SEMESTER II**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS2161	<u>Technical English – II*</u>	3	1	0	4
2.	MA2161	<u>Mathematics – II*</u>	3	1	0	4
3.	PH2161	<u>Engineering Physics – II*</u>	3	0	0	3
4.	CY2161	<u>Engineering Chemistry – II*</u>	3	0	0	3
5. a	ME2151	<u>Engineering Mechanics</u> (For non-circuit branches)	3	1	0	4
5. b	EE2151	<u>Circuit Theory</u> (For branches under Electrical Faculty)	3	1	0	4
5. c	EC2151	<u>Electric Circuits and Electron Devices</u> (For branches under I & C Faculty)	3	1	0	4
6. a	GE2151	<u>Basic Electrical &amp; Electronics Engineering</u> (For non-circuit branches)	4	0	0	4
6. b	GE2152	<u>Basic Civil &amp; Mechanical Engineering</u> (For circuit branches)	4	0	0	4
<b>PRACTICAL</b>						
7.	GE2155	<u>Computer Practice Laboratory-II*</u>	0	1	2	2
8.	GS2165	<u>Physics &amp; Chemistry Laboratory - II*</u>	0	0	3	2
9. a	ME2155	<u>Computer Aided Drafting and Modeling Laboratory</u>	0	1	2	2

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		(For non-circuits branches)				
9. b	EE2155	<u>Electrical Circuits Laboratory</u> (For branches under Electrical Faculty)	0	0	3	2
9. c	EC2155	<u>Circuits and Devices Laboratory</u> (For branches under I & C Faculty)	0	0	3	2
			<b>TOTAL : 28 CREDITS</b>			
10.	-	<u>English Language Laboratory</u> *	0	0	2	-

\* Common to all B.E. / B.Tech. Programmes

+ Offering English Language Laboratory as an additional subject (with no marks) during 2<sup>nd</sup> semester may be decided by the respective Colleges affiliated to Anna University Chennai.

#### **A. CIRCUIT BRANCHES**

##### **I Faculty of Electrical Engineering**

1. B.E. Electrical and Electronics Engineering
2. B.E. Electronics and Instrumentation Engineering
3. B.E. Instrumentation and Control Engineering

##### **II Faculty of Information and Communication Engineering**

1. B.E. Computer Science and Engineering
2. B.E. Electronics and Communication Engineering
3. B.E. Bio Medical Engineering
4. B.Tech. Information Technology

#### **B. NON – CIRCUIT BRANCHES**

##### **I Faculty of Civil Engineering**

1. B.E. Civil Engineering

##### **II Faculty of Mechanical Engineering**

1. B.E. Aeronautical Engineering
2. B.E. Automobile Engineering
3. B.E. Marine Engineering
4. B.E. Mechanical Engineering
5. B.E. Production Engineering

##### **III Faculty of Technology**

1. B.Tech. Chemical Engineering
2. B.Tech. Biotechnology
3. B.Tech. Polymer Technology
4. B.Tech. Textile Technology
5. B.Tech. Textile Technology (Fashion Technology)
6. B.Tech. Petroleum Engineering
7. B.Tech. Plastics Technology



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**SEMESTER III**


(Applicable to the students admitted from the Academic year 2008–2009 onwards)

Code No.	Course Title	L	T	P	C
<b>THEORY</b>					
MA 2211	<u>Transforms and Partial Differential Equations</u>	3	1	0	4
CS 2203	<u>Object Oriented Programming</u>	3	0	0	3
CS 2202	<u>Digital Principles and Systems Design</u>	3	1	0	4
IT 2201	<u>Data Structures and Algorithms</u>	3	0	0	3
IT 2202	<u>Principles of Communication</u>	3	1	0	4
GE 2021	<u>Environmental Science &amp; Engineering</u>	3	0	0	3
<b>PRACTICAL</b>					
CS 2207	<u>Digital Lab</u>	0	0	3	2
IT 2205	<u>Data Structures and Algorithms Lab</u>	0	0	3	2
CS 2209	<u>Object Oriented Programming Lab</u>	0	0	3	2
<b>TOTAL</b>		<b>18</b>	<b>3</b>	<b>9</b>	<b>27</b>

**SEMESTER IV**

(Applicable to the students admitted from the Academic year 2008–2009 onwards)

Code No.	Course Title	L	T	P	C
<b>THEORY</b>					
MA 2262	<u>Probability and Queueing Theory</u>	3	1	0	4
CS 2255	<u>Database Management Systems</u>	3	0	0	3
CS2252	<u>Microprocessors and Microcontrollers</u>	3	0	0	3
CS 2253	<u>Computer Organization and Architecture</u>	3	0	0	3
CS 2254	<u>Operating Systems</u>	3	0	0	3
IT 2251	<u>Software Engineering and Quality Assurance</u>	3	0	0	3
<b>PRACTICAL</b>					
CS 2258	<u>Database Management Systems Lab</u>	0	0	3	2
CS 2257	<u>Operating System Lab</u>	0	0	3	2
CS 2259	<u>Microprocessors Lab</u>	0	0	3	2
<b>TOTAL</b>		<b>18</b>	<b>1</b>	<b>9</b>	<b>25</b>

  
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**SEMESTER V**


(Applicable to the students admitted from the Academic year 2008–2009 onwards)

Code No.	Course Title	L	T	P	C
<b>THEORY</b>					
IT2301	Java Programming	3	0	0	3
MG2452	Engineering Economics & Financial Accounting	3	0	0	3
CS2304	System Software	3	1	0	4
CS2302	Computer Networks	3	0	0	3
CS2403	Digital Signal Processing	3	0	0	3
IT2302	Information Theory and Coding	3	0	0	3
<b>PRACTICAL</b>					
CS2308	System Software Lab	0	0	3	2
IT2305	Java Programming Lab	0	0	3	2
GE2321	Communication Skills Lab	0	0	4	2
<b>TOTAL</b>		<b>18</b>	<b>1</b>	<b>10</b>	<b>25</b>

**SEMESTER VI**

(Applicable to the students admitted from the Academic year 2008–2009 onwards)

Code No.	Course Title	L	T	P	C
<b>THEORY</b>					
IT2351	Network Programming and Management	3	0	0	3
CS2353	Object Oriented Analysis and Design	3	0	0	3
IT2352	Cryptography and Network Security	3	0	0	3
IT2353	Web Technology	3	0	0	3
IT2354	Embedded Systems	3	0	0	3
	Elective I	3	0	0	3
<b>PRACTICAL</b>					
IT2357	Web Technology Lab	0	0	3	2
CS2357	Object Oriented Analysis and Design Lab	0	0	3	2
CS2307	Network Lab	0	0	3	2
<b>TOTAL</b>		<b>18</b>	<b>0</b>	<b>9</b>	<b>24</b>

  
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**SEMESTER VII**

(Applicable to the students admitted from the Academic year 2008–2009 onwards)

Code No.	Course Title	L	T	P	C
<b>THEORY</b>					
IT2401	<u>Service Oriented Architecture</u>	3	0	0	3
IT2402	<u>Mobile Communication</u>	3	0	0	3
CS2401	<u>Computer Graphics</u>	3	0	0	3
IT2403	<u>Software Project Management</u>	3	0	0	3
	Elective II	3	0	0	3
	Elective III	3	0	0	3
<b>PRACTICAL</b>					
IT2406	<u>Service Oriented Architecture Lab</u>	0	0	3	2
CS2405	<u>Computer Graphics Lab</u>	0	0	3	2
<b>TOTAL</b>		<b>18</b>	<b>0</b>	<b>6</b>	<b>22</b>

**SEMESTER VIII**

(Applicable to the students admitted from the Academic year 2008–2009 onwards)

Code No.	Course Title	L	T	P	C
<b>THEORY</b>					
	Elective IV	3	0	0	3
	Elective V	3	0	0	3
<b>PRACTICAL</b>					
IT2451	Project Work	0	0	12	6
<b>TOTAL</b>		<b>6</b>	<b>0</b>	<b>12</b>	<b>12</b>

**LIST OF ELECTIVES****SEMESTER VI – Elective I**

Code No.	Course Title	L	T	P	C
MA2264	<u>Numerical Methods</u>	3	1	0	4
MA2265	<u>Discrete Mathematics</u>	3	1	0	4
IT2021	<u>Business Process Model</u>	3	0	0	3
IT2022	<u>Software Requirement Engineering</u>	3	0	0	3
IT2023	<u>Digital Image Processing</u>	3	0	0	3
IT2024	<u>User Interface Design</u>	3	0	0	3
CS2022	<u>Visual Programming</u>	3	0	0	3
CS2032	<u>Data Warehousing and Data Mining</u>	3	0	0	3

**SEMESTER VII – Elective II**

Code No.	Course Title	L	T	P	C
CS2303	<u>Theory of Computation</u>	3	1	0	4
CS2029	<u>Advanced Database Technology</u>	3	0	0	3
IT2031	<u>Electronic Commerce</u>	3	0	0	3
IT2032	<u>Software Testing</u>	3	0	0	3
IT2033	<u>Bioinformatics</u>	3	0	0	3
IT2034	<u>Adhoc Sensor Network</u>	3	0	0	3

**SEMESTER VII – Elective III**

Code No.	Course Title	L	T	P	C
CS2351	<u>Artificial Intelligence</u>	3	0	0	3
IT2041	<u>Enterprise Resource Planning</u>	3	0	0	3
IT2042	<u>Information Security</u>	3	0	0	3
IT2043	<u>Knowledge Management</u>	3	0	0	3
CS2063	<u>Grid computing</u>	3	0	0	3
CS2041	<u>C# and .NET Framework</u>	3	0	0	3

**SEMESTER VIII – Elective IV**

Code No.	Course Title	L	T	P	C
IT2050	<u>Principles of Compiler Design</u>	3	0	0	3
IT2051	<u>Knowledge Engineering</u>	3	0	0	3
GE2025	<u>Professional Ethics in Engineering</u>	3	0	0	3
GE2071	<u>Intellectual Property Rights</u>	3	0	0	3
IT2052	<u>Management Information System</u>	3	0	0	3
IT2053	<u>Software Design</u>	3	0	0	3
CS2053	<u>Soft Computing</u>	3	0	0	3

**SEMESTER VIII – Elective V**

Code No.	Course Title	L	T	P	C
GE2022	<u>Total Quality Management</u>	3	0	0	3
GE2072	<u>Indian Constitution and Society</u>	3	0	0	3
IT2061	<u>System Modeling and Simulation</u>	3	0	0	3
CS2035	<u>Natural Language Processing</u>	3	0	0	3
CS2056	<u>Distributed Systems</u>	3	0	0	3
GE2023	<u>Fundamental of Nano Science</u>	3	0	0	3
IT2064	<u>Speech Processing</u>	3	0	0	3

  
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R-2013

## B.TECH INFORMATION TECHNOLOGY

## I - VIII SEMESTERS CURRICULUM AND SYLLABUS


## SEMESTER I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS6151	Technical English – I	3	1	0	4
2.	MA6151	Mathematics – I	3	1	0	4
3.	PH6151	Engineering Physics – I	3	0	0	3
4.	CY6151	Engineering Chemistry – I	3	0	0	3
5.	GE6151	Computer Programming	3	0	0	3
6.	GE6152	Engineering Graphics	2	0	3	4
<b>PRACTICALS</b>						
7.	GE6161	Computer Practices Laboratory	0	0	3	2
8.	GE6162	Engineering Practices Laboratory	0	0	3	2
9.	GE6163	Physics and Chemistry Laboratory - I	0	0	2	1
<b>TOTAL</b>			<b>17</b>	<b>2</b>	<b>11</b>	<b>26</b>

## SEMESTER II

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	HS6251	Technical English – II	3	1	0	4
2.	MA6251	Mathematics – II	3	1	0	4
3.	PH6251	Engineering Physics – II	3	0	0	3
4.	CY6251	Engineering Chemistry – II	3	0	0	3
5.	CS6201	Digital Principles and System Design	3	0	0	3
	CS6202	Programming and Data Structures I	3	0	0	3
<b>PRACTICALS</b>						
7.	GE6262	Physics and Chemistry Laboratory - II	0	0	2	1
8.	IT6211	Digital Laboratory	0	0	3	2
9.	IT6212	Programming and Data Structures Laboratory I	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>2</b>	<b>8</b>	<b>25</b>

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**SEMESTER III**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	MA6351	<u>Transforms and Partial Differential Equations</u>	3	1	0	4
2.	CS6301	<u>Programming and Data Structures II</u>	3	0	0	3
3.	CS6302	<u>Database Management Systems</u>	3	0	0	3
4.	CS6303	<u>Computer Architecture</u>	3	0	0	3
5.	CS6304	<u>Analog and Digital Communication</u>	3	0	0	3
6.	GE6351	<u>Environmental Science and Engineering</u>	3	0	0	3
<b>PRACTICAL</b>						
7.	IT6311	<u>Programming and Data Structures Laboratory II</u>	0	0	3	2
8.	IT6312	<u>Database Management Systems Laboratory</u>	0	0	3	2
9.	IT6313	<u>Digital Communication Laboratory</u>	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>1</b>	<b>9</b>	<b>25</b>

**SEMESTER IV**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	MA6453	<u>Probability and Queuing Theory</u>	3	1	0	4
2.	EC6504	<u>Microprocessor and Microcontroller</u>	3	0	0	3
3.	CS6402	<u>Design and Analysis of Algorithms</u>	3	0	0	3
4.	CS6401	<u>Operating Systems</u>	3	0	0	3
5.	CS6403	<u>Software Engineering</u>	3	0	0	3
<b>PRACTICAL</b>						
6.	IT6411	<u>Microprocessor and Microcontroller Laboratory</u>	0	0	3	2
7.	IT6412	<u>Operating Systems Laboratory</u>	0	0	3	2
8.	IT6413	<u>Software Engineering Laboratory</u>	0	0	3	2
<b>TOTAL</b>			<b>15</b>	<b>1</b>	<b>9</b>	<b>22</b>

  
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**SEMESTER V**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	CS6551	<u>Computer Networks</u>	3	0	0	3
2.	IT6501	<u>Graphics and Multimedia</u>	3	0	0	3
3.	CS6502	<u>Object Oriented Analysis and Design</u>	3	0	0	3
4.	IT6502	<u>Digital Signal Processing</u>	3	1	0	4
5.	IT6503	<u>Web Programming</u>	3	1	0	4
6.	EC6801	<u>Wireless Communication</u>	3	0	0	3
<b>PRACTICAL</b>						
7.	IT6511	<u>Networks Laboratory</u>	0	0	3	2
8.	IT6512	<u>Web Programming Laboratory</u>	0	0	3	2
9.	IT6513	<u>Case Tools Laboratory</u>	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>2</b>	<b>9</b>	<b>26</b>

**SEMESTER VI**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	CS6601	<u>Distributed Systems</u>	3	0	0	3
2.	IT6601	<u>Mobile Computing</u>	3	0	0	3
3.	CS6659	<u>Artificial Intelligence</u>	3	0	0	3
4.	CS6660	<u>Compiler Design</u>	3	0	0	3
5.	IT6602	<u>Software Architectures</u>	3	0	0	3
6.		Elective I	3	0	0	3
<b>PRACTICAL</b>						
7.	IT6611	<u>Mobile Application Development Laboratory</u>	0	0	3	2
8.	IT6612	<u>Compiler Laboratory</u>	0	0	3	2
9.	GE6674	<u>Communication and Soft Skills - Laboratory Based</u>	0	0	4	2
<b>TOTAL</b>			<b>18</b>	<b>0</b>	<b>10</b>	<b>24</b>

  
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**SEMESTER VII**

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	IT6701	Information Management	3	0	0	3
2.	CS6701	Cryptography and Network Security	3	0	0	3
3.	IT6702	Data Ware Housing and Data Mining	3	0	0	3
4.	CS6703	Grid and Cloud Computing	3	0	0	3
5.		Elective II	3	0	0	3
<b>PRACTICAL</b>						
6.	IT6711	Data Mining Laboratory	0	0	3	2
7.	IT6712	Security Laboratory	0	0	3	2
8.	IT6713	Grid and Cloud Computing Laboratory	0	0	3	2
<b>TOTAL</b>			<b>15</b>	<b>0</b>	<b>9</b>	<b>21</b>

**SEMESTER VIII**


SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	IT6801	Service Oriented Architecture	3	0	0	3
2.		Elective III	3	0	0	3
3.		Elective IV	3	0	0	3
		Elective V	3	0	0	3
<b>PRACTICAL</b>						
4.	IT6811	Project Work	0	0	12	6
<b>TOTAL</b>			<b>12</b>	<b>0</b>	<b>12</b>	<b>18</b>

**TOTAL NO. OF CREDITS: 187**

**LIST OF ELECTIVES**

**SEMESTER VI – ELECTIVE I**

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	IT6001	Advanced Database Technology	3	0	0	3
2.	IT6002	Information Theory and Coding Techniques	3	0	0	3
3.	CS6001	C# and .Net Programming	3	0	0	3
4.	GE6757	Total Quality Management	3	0	0	3
5.	CS6012	Soft Computing	3	0	0	3
6.	GE6084	Human Rights	3	0	0	3

  
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**SEMESTER VII – ELECTIVE II**

S.NO.	CODE NO.	COURSE TITLE	L	T	P	C
1.	IT6003	Multimedia Compression Techniques	3	0	0	3
2.	IT6004	Software Testing	3	0	0	3
3.	IT6005	Digital Image Processing	3	0	0	3
4.	CS6003	Ad hoc and Sensor Networks	3	0	0	3
5.	IT6006	Data Analytics	3	0	0	3

**SEMESTER VIII – ELECTIVE III**

S.NO.	CODE NO.	COURSE TITLE	L	T	P	C
1.	IT6007	Free and Open Source Software	3	0	0	3
2.	IT6008	Network Programming and Management	3	0	0	3
3.	GE6075	Professional Ethics in Engineering	3	0	0	3
4.	CS6503	Theory of Computation	3	0	0	3
5.	IT6009	Web Engineering	3	0	0	3
6.	GE6083	Disaster Management	3	0	0	3


**SEMESTER VIII – ELECTIVE IV**

S.NO.	CODE NO.	COURSE TITLE	L	T	P	C
1.	BM6005	Bio Informatics	3	0	0	3
2.	CS6004	Cyber Forensics	3	0	0	3
3.	CS6702	Graph Theory and Applications	3	0	0	3
4.	CS6010	Social Network Analysis	3	0	0	3
5.	IT6010	Business Intelligence	3	0	0	3
6.	CS6013	Foundation Skills in Integrated Product Development	3	0	0	3

**SEMESTER VIII - ELECTIVE V**

S.NO.	CODE NO.	COURSE TITLE	L	T	P	C
1.	IT6011	Knowledge Management	3	0	0	3
2.	IT6012	TCP/ IP Design and Implementation	3	0	0	3
3.	CS6008	Human Computer Interaction	3	0	0	3
4.	IT6013	Software Quality Assurance	3	0	0	3
5.	MG6088	Software Project Management	3	0	0	3

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**REGULATIONS – 2017**  
**CHOICE BASED CREDIT SYSTEM**  
**I - VIII SEMESTERS CURRICULA AND SYLLABI**

**SEMESTER I**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
<b>PRACTICALS</b>								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
<b>TOTAL</b>				<b>31</b>	<b>19</b>	<b>0</b>	<b>12</b>	<b>25</b>

**SEMESTER II**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8252	Physics for Information Science	BS	3	3	0	0	3
4.	BE8255	Basic Electrical, Electronics and Measurement Engineering	ES	3	3	0	0	3
5.	IT8201	Information Technology Essentials	PC	3	3	0	0	3
6.	CS8251	Programming in C	PC	3	3	0	0	3
<b>PRACTICALS</b>								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	CS8261	C Programming Laboratory	PC	4	0	0	4	2
9.	IT8211	Information Technology Essentials Laboratory	PC	2	0	0	2	1
<b>TOTAL</b>				<b>30</b>	<b>20</b>	<b>0</b>	<b>10</b>	<b>25</b>

**SEMESTER III**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MA8351	Discrete Mathematics	BS	4	4	0	0	4
2.	CS8351	Digital Principles and System Design	ES	4	4	0	0	4
3.	CS8391	Data Structures	PC	3	3	0	0	3
4.	CS8392	Object Oriented Programming	PC	3	3	0	0	3
5.	EC8394	Analog and Digital Communication	PC	3	3	0	0	3
<b>PRACTICALS</b>								
6.	CS8381	Data Structures Laboratory	PC	4	0	0	4	2
7.	CS8383	Object Oriented Programming Laboratory	PC	4	0	0	4	2
8.	CS8382	Digital Systems Laboratory	ES	4	0	0	4	2
9.	HS8381	Interpersonal Skills/Listening & Speaking	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>31</b>	<b>17</b>	<b>0</b>	<b>14</b>	<b>24</b>

**SEMESTER IV**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MA8391	Probability and Statistics	BS	4	4	0	0	4
2.	CS8491	Computer Architecture	PC	3	3	0	0	3
3.	CS8492	Database Management Systems	PC	3	3	0	0	3
4.	CS8451	Design and Analysis of Algorithms	PC	3	3	0	0	3
5.	CS8493	Operating Systems	PC	3	3	0	0	3
6.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
<b>PRACTICALS</b>								
7.	CS8481	Database Management Systems Laboratory	PC	4	0	0	4	2
8.	CS8461	Operating Systems Laboratory	PC	4	0	0	4	2
9.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>29</b>	<b>19</b>	<b>0</b>	<b>10</b>	<b>24</b>

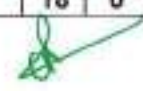
  
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**SEMESTER V**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MA8551	Algebra and Number Theory	BS	4	4	0	0	4
2.	CS8591	Computer Networks	PC	3	3	0	0	3
3.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
4.	IT8501	Web Technology	PC	3	3	0	0	3
5.	CS8494	Software Engineering	PC	3	3	0	0	3
6.		Open Elective I	OE	3	3	0	0	3
<b>PRACTICALS</b>								
7.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
8.	CS8581	Networks Laboratory	PC	4	0	0	4	2
9.	IT8511	Web Technology Laboratory	PC	4	0	0	4	2
<b>TOTAL</b>				<b>31</b>	<b>19</b>	<b>0</b>	<b>12</b>	<b>25</b>

**SEMESTER VI**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	IT8601	Computational Intelligence	PC	3	3	0	0	3
2.	CS8592	Object Oriented Analysis and Design	PC	3	3	0	0	3
3.	IT8602	Mobile Communication	PC	3	3	0	0	3
4.	CS8091	Big Data Analytics	PC	3	3	0	0	3
5.	CS8092	Computer Graphics and Multimedia	PC	3	3	0	0	3
6.		Professional Elective I	PE	3	3	0	0	3
<b>PRACTICALS</b>								
7.	CS8662	Mobile Application Development Laboratory	PC	4	0	0	4	2
8.	CS8582	Object Oriented Analysis and Design Laboratory	PC	4	0	0	4	2
9.	IT8611	Mini Project	EEC	2	0	0	2	1
10.	HS8581	Professional Communication	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>30</b>	<b>18</b>	<b>0</b>	<b>12</b>	<b>24</b>

  
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**SEMESTER VII**

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MG8591	Principles of Management	HS	3	3	0	0	3
2.	CS8792	Cryptography and Network Security	PC	3	3	0	0	3
3.	CS8791	Cloud Computing	PC	3	3	0	0	3
4.		Open Elective II	OE	3	3	0	0	3
5.		Professional Elective II	PE	3	3	0	0	3
6.		Professional Elective III	PE	3	3	0	0	3
<b>PRACTICALS</b>								
7.	IT8711	FOSS and Cloud Computing Laboratory	PC	4	0	0	4	2
8.	IT8761	Security Laboratory	PC	4	0	0	4	2
<b>TOTAL</b>				<b>26</b>	<b>18</b>	<b>0</b>	<b>8</b>	<b>22</b>

**SEMESTER VIII**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.		Professional Elective IV	PE	3	3	0	0	3
2.		Professional Elective V	PE	3	3	0	0	3
<b>PRACTICALS</b>								
3.	IT8811	Project Work	EEC	20	0	0	20	10
<b>TOTAL</b>				<b>26</b>	<b>6</b>	<b>0</b>	<b>20</b>	<b>16</b>

**TOTAL NO. OF CREDITS: 185**

  
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**HUMANITIES AND SOCIAL SCIENCES (HS)**

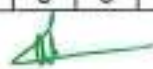
SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	HS8251	Technical English	HS	4	4	0	0	4
3.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
4.	MG8591	Principles of Management	HS	3	3	0	0	3

**BASIC SCIENCES (BS)**

SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA8251	Engineering Mathematics I	BS	4	4	0	0	4
2.	PH8151	Engineering Physics	BS	3	3	0	0	3
3.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
4.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
5.	MA8251	Engineering Mathematics II	BS	4	4	0	0	4
6.	PH8252	Physics for Information Science	BS	3	3	0	0	3
7.	MA8351	Discrete Mathematics	BS	4	4	0	0	4
8.	MA8391	Probability and Statistics	BS	4	4	0	0	4
9.	MA8551	Algebra and Number Theory	BS	4	4	0	0	4

**ENGINEERING SCIENCES (ES)**

SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
2.	GE8152	Engineering Graphics	ES	6	2	0	4	4
3.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
4.	BE8255	Basic Electrical, Electronics and Measurement Engineering	ES	3	3	0	0	3
5.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
6.	CS8351	Digital Principles and System Design	ES	4	4	0	0	4
7.	CS8382	Digital Systems Laboratory	ES	4	0	0	4	2


  
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**PROFESSIONAL CORE (PC)**

SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	IT8201	Information Technology Essentials	PC	3	3	0	0	3
2.	IT8211	Information Technology Essentials Laboratory	PC	2	0	0	2	1
3.	CS8251	Programming in C	PC	3	3	0	0	3
4.	CS8261	C Programming Laboratory	PC	4	0	0	4	2
5.	CS8391	Data Structures	PC	3	3	0	0	3
6.	CS8392	Object Oriented Programming	PC	3	3	0	0	3
7.	EC8394	Analog and Digital Communication	PC	3	3	0	0	3
8.	CS8381	Data Structures Laboratory	PC	4	0	0	4	2
9.	CS8383	Object Oriented Programming Laboratory	PC	4	0	0	4	2
10.	CS8491	Computer Architecture	PC	3	3	0	0	3
11.	CS8492	Database Management Systems	PC	3	3	0	0	3
12.	CS8451	Design and Analysis of Algorithms	PC	3	3	0	0	3
13.	CS8493	Operating Systems	PC	3	3	0	0	3
14.	CS8481	Database Management Systems Laboratory	PC	4	0	0	4	2
15.	CS8461	Operating Systems Laboratory	PC	4	0	0	4	2
16.	CS8591	Computer Networks	PC	3	3	0	0	3
17.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
18.	IT8501	Web Technology	PC	3	3	0	0	3
19.	CS8494	Software Engineering	PC	3	3	0	0	3
20.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
21.	CS8581	Networks Laboratory	PC	4	0	0	4	2
22.	IT8511	Web Technology Laboratory	PC	4	0	0	4	2
23.	IT8601	Computational Intelligence	PC	3	3	0	0	3
24.	CS8592	Object Oriented Analysis and Design	PC	3	3	0	0	3
25.	IT8602	Mobile Communication	PC	3	3	0	0	3
26.	CS8091	Big Data Analytics	PC	3	3	0	0	3
27.	CS8092	Computer Graphics and Multimedia	PC	3	3	0	0	3
28.	CS8662	Mobile Application Development Laboratory	PC	4	0	0	4	2



29.	CS8582	Object Oriented Analysis and Design Laboratory	PC	4	0	0	4	2
30.	CS8792	Cryptography and Network Security	PC	3	3	0	0	3
31.	CS8791	Cloud Computing	PC	3	3	0	0	3
32.	IT8711	FOSS and Cloud Computing Laboratory	PC	4	0	0	4	2
33.	IT8761	Security Laboratory	PC	4	0	0	4	2

  
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**PROFESSIONAL ELECTIVES (PE)  
SEMESTER VI  
ELECTIVE - I**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	IT8076	Software Testing	PE	3	3	0	0	3
2.	CS8077	Graph Theory and Applications	PE	3	3	0	0	3
3.	IT8071	Digital Signal Processing	PE	3	3	0	0	3
4.	IT8001	Information Storage and Management	PE	3	3	0	0	3
5.	CS8072	Agile Methodologies	PE	3	3	0	0	3
6.	IT8072	Embedded Systems	PE	3	3	0	0	3
7.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3

**SEMESTER VII  
ELECTIVE - II**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	IT8002	Web Development Frameworks	PE	3	3	0	0	3
2.	CS8082	Machine Learning Techniques	PE	3	3	0	0	3
3.	IT8003	Formal Languages and Automata Theory	PE	3	3	0	0	3
4.	CS8081	Internet of Things	PE	3	3	0	0	3
5.	IT8075	Software Project Management	PE	3	3	0	0	3
6.	IT8074	Service Oriented Architecture	PE	3	3	0	0	3
7.	GE8077	Total Quality Management	PE	3	3	0	0	3

**SEMESTER VII  
ELECTIVE - III**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8079	Human Computer Interaction	PE	3	3	0	0	3
2.	CS8073	C# and .Net Programming	PE	3	3	0	0	3
3.	CS8088	Wireless Adhoc and Sensor Networks	PE	3	3	0	0	3
4.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3
5.	CS8071	Advanced Topics on Databases	PE	3	3	0	0	3
6.	GE8074	Human Rights	PE	3	3	0	0	3
7.	GE8071	Disaster Management	PE	3	3	0	0	3

**SEMESTER VIII  
ELECTIVE - IV**

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8085	Social Network Analysis	PE	3	3	0	0	3
2.	CS8086	Soft Computing	PE	3	3	0	0	3
3.	CS8074	Cyber Forensics	PE	3	3	0	0	3
4.	IT8073	Information Security	PE	3	3	0	0	3
5.	EC8093	Digital Image Processing	PE	3	3	0	0	3
6.	IT8004	Network Management	PE	3	3	0	0	3
7.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3

**SEMESTER VIII  
ELECTIVE - V**

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8080	Information Retrieval Techniques	PE	3	3	0	0	3
2.	CS8078	Green Computing	PE	3	3	0	0	3
3.	CS8084	Natural Language Processing	PE	3	3	0	0	3
4.	IT8077	Speech Processing	PE	3	3	0	0	3
5.	IT8078	Web Design and Management	PE	3	3	0	0	3
6.	IT8005	Electronic Commerce	PE	3	3	0	0	3
7.	GE8073	Fundamentals of Nano Science	PE	3	3	0	0	3


\*Professional Electives are grouped according to elective number as was done previously.

**EMPLOYABILITY ENHANCEMENT COURSES (EEC)**

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8381	Interpersonal Skills/ Listening & Speaking	EEC	2	0	0	2	1
2.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
3.	IT8611	Mini Project	EEC	2	0	0	2	1
4.	HS8581	Professional Communication	EEC	2	0	0	2	1
5.	IT8811	Project Work	EEC	20	0	0	20	10

**SUMMARY**

S.NO.	SUBJECT AREA	CREDITS AS PER SEMESTER								CREDITS TOTAL	Percentage
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	4	4		3			3		14	8.6%
2.	BS	12	7	4	4	4				31	16.84%
3.	ES	9	5	6						20	11.41%
4.	PC		9	13	16	18	19	10		85	45.56%
5.	PE					3	3	6	6	18	8.15%
6.	OE							3		3	3.26%
7.	EEC			1	1		2		10	14	7.0%
	<b>Total</b>	<b>25</b>	<b>25</b>	<b>24</b>	<b>24</b>	<b>25</b>	<b>24</b>	<b>22</b>	<b>16</b>	<b>185</b>	
8.	Non Credit / Mandatory										

  
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## Regulations - 2009

M.E.COMPUTER SCIENCE AND ENGINEERING

II TO IV SEMESTERS (FULL TIME) CURRICULUM AND SYLLABI

### SEMESTER II

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1	CS9221	Data Base Technology	3	0	0	3
2	CS9222	Advanced Operating Systems	3	0	0	3
3	CS9223	Advanced System Software	3	0	0	3
4	CS9224	Information Security	3	0	0	3
5	CS9225	Web Technology	3	0	0	3
6	E1	Elective I	3	0	0	3
<b>PRACTICAL</b>						
7	CS9227	Operating System Lab	0	0	3	2
8	CS9228	Web Technology Lab	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>0</b>	<b>6</b>	<b>22</b>

### SEMESTER III

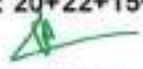
SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1	E2	Elective II	3	0	0	3
2	E3	Elective III	3	0	0	3
3	E4	Elective IV	3	0	0	3
<b>PRACTICAL</b>						
4	CS9234	Project Work (Phase I)	0	0	12	6
<b>TOTAL</b>			<b>9</b>	<b>0</b>	<b>12</b>	<b>15</b>

### SEMESTER IV

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
<b>PRACTICAL</b>						
1	CS9241	Project Work (Phase II)	0	0	24	12
<b>TOTAL</b>			<b>0</b>	<b>0</b>	<b>24</b>	<b>12</b>

TOTAL NO OF CREDITS TO BE EARNED FOR THE AWARD OF DEGREE: 20+22+15+12= 69

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**I SEMESTER (FULL TIME) CURRICULUM AND SYLLABI**

**SEMESTER I**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1	MA9219	Operations Research	3	1	0	4
2	CS9211	Computer Architecture	3	0	0	3
3	CS9212	Data Structures and Algorithms	3	0	0	3
4	SE9213	Object Oriented Software Engineering	3	0	0	3
5	CS9213	Computer Networks and Management	3	0	0	3
<b>PRACTICAL</b>						
6	CS 9215	Data Structures Lab	0	0	3	2
7	CS9216	Networking Lab	0	0	3	2
<b>TOTAL</b>			<b>15</b>	<b>1</b>	<b>6</b>	<b>20</b>

**LIST OF ELECTIVES FOR M.E.COMPUTER SCIENCE AND ENGINEERING\***

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1	CS9251	Mobile Computing	3	0	0	3
2	CS9252	Grid Computing	3	0	0	3
3	CS9253	Theory of Computation	3	0	0	3
4	CS9254	Soft Computing	3	0	0	3
5	CP9264	Distributed Computing	3	0	0	3
6	CS9256	Multimedia Systems	3	0	0	3
7	CS9257	XML and Web Services	3	0	0	3
8	CS9258	Bio Informatics	3	0	0	3
9	CS9259	Network Security	3	0	0	3
10	CS9260	Embedded Systems	3	0	0	3
11	CS9261	Digital Imaging	3	0	0	3
12	CS9262	Software Quality Assurance	3	0	0	3
13	CS9263	Ad-hoc Networks	3	0	0	3
14	CS9264	Data Warehousing and Data Mining	3	0	0	3
15	CS9265	Performance Evaluation of Computer Systems and Networks	3	0	0	3
16	CS9266	Agent Based Intelligent Systems	3	0	0	3
17	CS9267	Visualization Techniques	3	0	0	3
18	CS9268	Advanced Databases	3	0	0	3
19	CS9269	Software Project Management	3	0	0	3
20	CS9270	Component Based Technology	3	0	0	3

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**LIST OF ELECTIVES FOR M.E.COMPUTER SCIENCE AND ENGINEERING\***

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1	CS9251	Mobile Computing	3	0	0	3
2	CS9252	Grid Computing	3	0	0	3
3	CS9253	Theory of Computation	3	0	0	3
4	CS9254	Soft Computing	3	0	0	3
5	CP9264	Distributed Computing	3	0	0	3
6	CS9256	Multimedia Systems	3	0	0	3
7	CS9257	XML and Web Services	3	0	0	3
8	CS9258	Bio Informatics	3	0	0	3
9	CS9259	Network Security	3	0	0	3
10	CS9260	Embedded Systems	3	0	0	3
11	CS9261	Digital Imaging	3	0	0	3
12	CS9262	Software Quality Assurance	3	0	0	3
13	CS9263	Ad-hoc Networks	3	0	0	3
14	CS9264	Data Warehousing and Data Mining	3	0	0	3
15	CS9265	Performance Evaluation of Computer Systems and Networks	3	0	0	3
16	CS9266	Agent Based Intelligent Systems	3	0	0	3
17	CS9267	Visualization Techniques	3	0	0	3
18	CS9268	Advanced Databases	3	0	0	3
19	CS9269	Software Project Management	3	0	0	3
20	CS9270	Component Based Technology	3	0	0	3

  
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**REGULATIONS – 2013**

**M.E. COMPUTER SCIENCE AND ENGINEERING  
I TO IV SEMESTERS CURRICULA AND SYLLABI (FULL TIME)**

**SEMESTER I**

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	MA7155	Applied Probability and Statistics	3	1	0	4
2.	CP7101	Design and Management of Computer Networks	3	0	0	3
3.	CP7102	Advanced Data Structures and Algorithms	3	0	0	3
4.	CP7103	Multicore Architectures	3	0	0	3
5.		Elective I	3	0	0	3
6.		Elective II	3	0	0	3
<b>PRACTICAL</b>						
7.	CP7111	Advanced Data Structures Laboratory	0	0	4	2
8.	CP7112	Case Study - Network Design (Team Work)	0	0	2	1
<b>TOTAL</b>			<b>18</b>	<b>1</b>	<b>6</b>	<b>22</b>

**SEMESTER II**

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	CP7201	Theoretical Foundations of Computer Science	3	1	0	4
2.	CP7202	Advanced Databases	3	0	0	3
3.	CP7203	Principles of Programming Languages	3	0	0	3
4.	CP7204	Advanced Operating Systems	3	0	0	3
5.		Elective III	3	0	0	3
6.		Elective IV	3	0	0	3
<b>PRACTICAL</b>						
7.	CP7211	Advanced Databases Laboratory	0	0	4	2
8.	CP7212	Case Study - Operating Systems Design (Team Work)	0	0	2	1
<b>TOTAL</b>			<b>18</b>	<b>1</b>	<b>6</b>	<b>22</b>

**SEMESTER III**

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	CP7301	Software Process and Project Management	3	1	0	4
2.		Elective V	3	0	0	3
3.		Elective VI	3	0	0	3
4.		Elective VII	3	0	0	3
<b>PRACTICAL</b>						
5.	CP7311	Project Work (Phase I)	0	0	12	6
<b>TOTAL</b>			<b>12</b>	<b>1</b>	<b>12</b>	<b>19</b>

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**SEMESTER IV**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
<b>PRACTICAL</b>						
1.	CP7411	Project Work ( Phase II)	0	0	24	12
<b>TOTAL</b>			<b>0</b>	<b>0</b>	<b>24</b>	<b>12</b>

**TOTAL NO.OF CREDITS:75****LIST OF ELECTIVES****ELECTIVE I**

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	SE7103	Formal models of software systems	3	0	0	3
2.	CP7001	Performance Evaluation of Computer Systems	3	0	0	3
3.	CP7002	Probabilistic Reasoning Systems	3	0	0	3
4.	CP7003	Data Analysis and Business Intelligence	3	0	0	3
5.	CP7004	Image Processing and Analysis	3	0	0	3
6.	NE7001	Sensing Techniques and Sensors	3	0	0	3

**ELECTIVE II**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1.	CP7005	Randomized Algorithms	3	0	0	3
2.	NE7002	Mobile and Pervasive Computing	3	0	0	3
3.	CP7006	Parallel Programming Paradigms	3	0	0	3
4.	CP7007	Software Requirements Engineering	3	0	0	3
5.	CP7008	Speech Processing and Synthesis	3	0	0	3
6.	CP7009	Machine Learning Techniques	3	0	0	3

**ELECTIVE III**

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	CP7010	Concurrency Models	3	0	0	3
2.	CP7011	Real Time Systems	3	0	0	3
3.	CP7012	Computer Vision	3	0	0	3
4.	NE7202	Network and Information Security	3	0	0	3
5.	CP7013	Design and Analysis of Parallel Algorithms	3	0	0	3
6.	CP7014	Software Architectures	3	0	0	3

  
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**ELECTIVE IV**

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	CP7015	Model Checking and Program Verification	3	0	0	3
2.	CP7016	Embedded Software Development	3	0	0	3
3.	IF7202	Cloud Computing	3	0	0	3
4.	CP7017	Data Visualization Techniques	3	0	0	3
5.	NE7005	Protocols and Architecture for Wireless Sensor Networks	3	0	0	3
6.	CP7018	Language Technologies	3	0	0	3

**ELECTIVE V**


SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1.	NE7012	Social Network Analysis	3	0	0	3
2.	CP7019	Managing Big Data	3	0	0	3
3.	NE7011	Mobile Application Development	3	0	0	3
4.	CP7020	Bio-inspired Computing	3	0	0	3
5.	CP7021	Medical Image Processing	3	0	0	3
6.	CP7022	Software Design	3	0	0	3

**ELECTIVE VI**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1.	CP7023	Reconfigurable Computing	3	0	0	3
2.	IF7013	Energy Aware Computing	3	0	0	3
3.	CP7024	Information Retrieval Techniques	3	0	0	3
4.	CP7025	Data Mining Techniques	3	0	0	3
5.	IF7002	Bio Informatics	3	0	0	3
6.	CP7026	Software Quality Assurance	3	0	0	3

**ELECTIVE VII**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1.	CP7027	Multi Objective Optimization Techniques	3	0	0	3
2.	CP7028	Enterprise Application Integration	3	0	0	3
3.	CP7029	Information Storage Management	3	0	0	3
5.	CP7030	Robotics	3	0	0	3
6.	CP7031	Compiler Optimization Techniques	3	0	0	3

  
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**CHOICE BASED CREDIT SYSTEM**  
**CURRICULA AND SYLLABI**

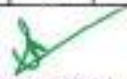
**SEMESTER I**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MA5160	Applied Probability and Statistics	FC	4	4	0	0	4
2.	CP5151	Advanced Data Structures and Algorithms	PC	4	4	0	0	4
3.	CP5152	Advanced Computer Architecture	PC	3	3	0	0	3
4.	CP5153	Operating System Internals	PC	3	3	0	0	3
5.	CP5154	Advanced Software Engineering	PC	3	3	0	0	3
6.	CP5191	Machine Learning Techniques	PC	3	3	0	0	3
<b>PRACTICALS</b>								
7.	CP5161	Data Structures Laboratory	PC	4	0	0	4	2
<b>TOTAL</b>				<b>24</b>	<b>20</b>	<b>0</b>	<b>4</b>	<b>22</b>

**SEMESTER II**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	CP5201	Network Design and Technologies	PC	3	3	0	0	3
2.	CP5291	Security Practices	PC	3	3	0	0	3
3.	CP5292	Internet of Things	PC	3	3	0	0	3
4.	CP5293	Big Data Analytics	PC	3	3	0	0	3
5.		Professional Elective –I	PE	3	3	0	0	3
6.		Professional Elective –II	PE	3	3	0	0	3
<b>PRACTICALS</b>								
7.	CP5261	Data Analytics Laboratory	PC	4	0	0	4	2
8.	CP5281	Term Paper Writing and Seminar	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>24</b>	<b>18</b>	<b>0</b>	<b>6</b>	<b>21</b>

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**ENGINEERING AND TECHNOLOGY,**  
**K. S. R. KALVI NAGAR,**  
**TIRUCHENGODE-637 215,**  
**NAMAKKAL DL, TAMIL NADU.**


**SEMESTER III**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.		Professional Elective –III	PE	3	3	0	0	3
2.		Professional Elective –IV	PE	3	3	0	0	3
3.		Professional Elective –V	PE	3	3	0	0	3
<b>PRACTICALS</b>								
4.	CP5311	Project Work Phase – I	EEC	12	0	0	12	6
<b>TOTAL</b>				<b>21</b>	<b>9</b>	<b>0</b>	<b>12</b>	<b>15</b>

**SEMESTER IV**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>PRACTICALS</b>								
1.	CP5411	Project Work Phase – II	EEC	24	0	0	24	12
<b>TOTAL</b>				<b>24</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>12</b>

**TOTAL NO. OF CREDITS:70**

  
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**FOUNDATION COURSES (FC)**

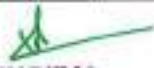
SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA5160	Applied Probability and Statistics	FC	4	4	0	0	4

**PROFESSIONAL CORE (PC)**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CP5151	Advanced Data Structures and Algorithms	PC	4	4	0	0	4
2.	CP5152	Advanced Computer Architecture	PC	3	3	0	0	3
3.	CP5153	Operating System Internals	PC	3	3	0	0	3
4.	CP5154	Advanced Software Engineering	PC	3	3	0	0	3
5.	CP5191	Machine Learning Techniques	PC	3	3	0	0	3
6.	CP5161	Data Structures Laboratory	PC	4	0	0	4	2
7.	CP5201	Network Design and Technologies	PC	3	3	0	0	3
8.	CP5291	Security Practices	PC	3	3	0	0	3
9.	CP5292	Internet of Things	PC	3	3	0	0	3
10.	CP5293	Big Data Analytics	PC	3	3	0	0	3
11.	CP5261	Data Analytics Laboratory	PC	4	0	0	4	2

**EMPLOYABILITY ENHANCEMENT COURSE (EEC)**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CP5281	Term Paper and Seminar	EEC	2	0	0	2	1
2.	CP5311	Project Work Phase – I	EEC	12	0	0	12	6
3.	CP5411	Project Work Phase – II	EEC	24	0	0	24	12

  
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**LIST OF ELECTIVES  
II SEMESTER  
ELECTIVE I**


SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	IF5191	Advanced Databases	PE	3	3	0	0	3
2.	CP5001	Principles of Programming Languages	PE	3	3	0	0	3
3.	CP5071	Image Processing and Analysis	PE	3	3	0	0	3
4.	CP5091	Web Engineering	PE	3	3	0	0	3
5.	CP5092	Cloud Computing Technologies	PE	3	3	0	0	3

**II SEMESTER  
ELECTIVE II**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MP5291	Real Time Systems	PE	3	3	0	0	3
2.	CP5093	Mobile and Pervasive Computing	PE	3	3	0	0	3
3.	CP5002	Parallel Programming Paradigms	PE	3	3	0	0	3
4.	CP5094	Information Retrieval Techniques	PE	3	3	0	0	3
5.	CP5072	Software Architectures and Design	PE	3	3	0	0	3

**SEMESTER III  
ELECTIVE III**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CP5003	Performance Analysis of Computer Systems	PE	3	3	0	0	3
2.	CP5004	Language Technologies	PE	3	3	0	0	3
3.	CP5095	Computer Vision	PE	3	3	0	0	3
4.	CP5096	Speech Processing and Synthesis	PE	3	3	0	0	3
5.	CP5005	Software Quality Assurance and Testing	PE	3	3	0	0	3


  
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**SEMESTER III  
ELECTIVE IV**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CP5006	Formal models of software systems	PE	3	3	0	0	3
2.	CP5073	Embedded Software Development	PE	3	3	0	0	3
3.	CP5074	Social Network Analysis	PE	3	3	0	0	3
4.	CP5007	Bio-inspired Computing	PE	3	3	0	0	3
5.	CP5008	Compiler Optimization Techniques	PE	3	3	0	0	3

**SEMESTER III  
ELECTIVE V**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CP5009	Data Visualization Techniques	PE	3	3	0	0	3
2.	CP5010	Reconfigurable Computing	PE	3	3	0	0	3
3.	CP5097	Mobile Application Development	PE	3	3	0	0	3
4.	CP5075	Bio Informatics	PE	3	3	0	0	3
5.	CP5076	Information Storage Management	PE	3	3	0	0	3

  
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ANNA UNIVERSITY, CHENNAI

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CURRICULUM I SEMESTER (FULL TIME)

M.E. EMBEDDED SYSTEM TECHNOLOGIES


SEMESTER I

SL. No	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	MA9216	Applied Mathematics for Electrical Engineers	3	1	0	4
2	ET9211	Advanced Digital System Design	3	0	0	3
3	ET9212	Micro Controller Based System Design	3	0	0	3
4	ET9213	Design of Embedded Systems	3	0	0	3
5	ET9214	Real Time Systems	3	0	0	3
6		Elective I	3	0	0	3
TOTAL			18	1	0	19

ELECTIVES FOR M.E EMBEDDED SYSTEM TECHNOLOGIES

SEMESTER I

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1	ET9251	Software Technology for Embedded Systems	3	0	0	3
2	PE9275	Soft Computing Techniques	3	0	0	3
3	AP9222	Computer Architecture and parallel processing	3	0	0	3

  
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ANNA UNIVERSITY, CHENNAI  
**REGULATIONS - 2009**

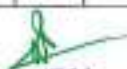
M.E. EMBEDDED SYSTEM TECHNOLOGIES  
II TO IV SEMESTERS (FULL TIME) CURRICULUM AND SYLLABUS

**SEMESTER II**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1	ET9221	<u>VLSI Architecture and Design Methodologies</u>	3	1	0	4
2	ET9222	<u>Real Time Operating System</u>	3	0	0	3
3	ET9223	<u>Embedded Networking</u>	3	1	0	4
4	ET9224	<u>Wireless &amp; Mobile Communication</u>	3	0	0	3
5		<u>Elective II</u>	3	0	0	3
6		<u>Elective III</u>	3	0	0	3
<b>PRACTICAL</b>						
7	ET9225	<u>Embedded System Lab</u>	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>2</b>	<b>3</b>	<b>22</b>

**SEMESTER III**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1		<u>Elective IV</u>	3	0	0	3
2		<u>Elective V</u>	3	0	0	3
3		<u>Elective VI</u>	3	0	0	3
<b>PRACTICAL</b>						
4	ET9231	Project Work (Phase I)	0	0	12	6
<b>TOTAL</b>			<b>9</b>	<b>0</b>	<b>12</b>	<b>15</b>

  
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**SEMESTER IV**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
<b>PRACTICAL</b>						
1	ET9241	Project Work (Phase II)	0	0	24	12
<b>TOTAL</b>			<b>0</b>	<b>0</b>	<b>24</b>	<b>12</b>

**TOTAL CREDITS TO BE EARNED FOR THE AWARD THE DEGREE 19+22+15+12=68**

**ELECTIVES FOR M.E EMBEDDED SYSTEM TECHNOLOGIES**

**ELECTIVE I**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1	ET9251	<u>Software Technology for Embedded Systems</u>	3	0	0	3
2	PE9275	<u>Soft Computing Techniques</u>	3	0	0	3
3	AP9222	<u>Computer Architecture and parallel processing</u>	3	0	0	3


**ELECTIVE II & III**

4	ET9261	<u>Design of Embedded Control Systems</u>	3	0	0	3
5	ET9262	<u>Embedded Communication and Software Design</u>	3	0	0	3
6	ET9263	<u>Ad-Hoc Networks</u>	3	0	0	3
7	ET9264	<u>Embedded Linux</u>	3	1	0	4
8	ET9265	<u>Digital Instrumentation</u>	3	0	0	3
9	ET9266	<u>RISC Processor Architecture and Programming</u>	3	0	0	3

**ELECTIVE IV, V & VI**

10	ET9271	<u>Advanced Embedded Systems</u>	3	0	0	3
11	ET9272	<u>Advanced Digital Signal Processing</u>	3	0	0	3
12	ET9273	<u>Cryptography and Network Security</u>	3	0	0	3
13	ET9274	<u>Programming with VHDL</u>	3	0	0	3
14	ET9275	<u>Computer in Networking and Digital control</u>	3	0	0	3
15	ET9276	<u>Distributed Embedded Computing</u>	3	0	0	3
16	ET9277	<u>Principle of Robotics</u>	3	0	0	3
17	ET9278	<u>Application of MEMS Technology</u>	3	0	0	3
18	ET9279	<u>Digital Image Processing</u>	3	0	0	3

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**CHENNAI REGION.**

**AFFILIATED INSTITUTIONS  
ANNA UNIVERSITY, CHENNAI  
REGULATIONS – 2013**

**M.E. EMBEDDED SYSTEM TECHNOLOGIES  
I TO IV SEMESTERS (FULL TIME) CURRICULUM AND SYLLABUS  
SEMESTER I**

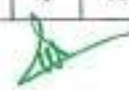
Sl.No	CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1	MA7163	Applied Mathematics for Electrical Engineers	3	1	0	4
2	ET7101	Advanced Digital System Design	3	0	0	3
3	ET7102	Microcontroller Based System Design	3	0	0	3
4	ET7103	Real Time Systems	3	0	0	3
5	ET7104	Design of Embedded Systems	3	0	0	3
6		Elective - I	3	0	0	3
<b>PRACTICAL</b>						
7	ET7111	Embedded System Laboratory I	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>1</b>	<b>3</b>	<b>21</b>

**SEMESTER II**

Sl.No	CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1	ET7201	VLSI Architecture and Design Methodologies	3	0	0	3
2	ET7202	Embedded Networking	3	1	0	4
3	ET7203	Wireless and Mobile Communication	3	0	0	3
4	ET7204	Software for Embedded Systems	3	0	0	3
5		Elective - II	3	0	0	3
6		Elective - III	3	0	0	3
<b>PRACTICAL</b>						
7	ET7211	Embedded System Laboratory II	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>1</b>	<b>3</b>	<b>21</b>

**SEMESTER III**

Sl.No	CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1		Elective – IV	3	0	0	3
2		Elective – V	3	0	0	3
3		Elective – VI	3	0	0	3
<b>PRACTICAL</b>						
4	ET7311	Project Work (Phase I)	0	0	12	6
<b>TOTAL</b>			<b>9</b>	<b>0</b>	<b>12</b>	<b>15</b>

  
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NAMAKKAL Dt. TAMIL NADU.**

SEMESTER IV						
Sl.No	CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1	ET7411	Project Work (Phase II)	0	0	24	12
<b>TOTAL</b>			<b>0</b>	<b>0</b>	<b>24</b>	<b>12</b>

**TOTAL NUMBER OF CREDITS = 69**

**ELECTIVES FOR M.E. EMBEDDED SYSTEM TECHNOLOGIES**

ELECTIVE I						
Sl. No	CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1	ET7001	Digital Instrumentation	3	0	0	3
2	ET7002	Real Time Operating Systems	3	0	0	3
3	ET7016	Parallel Processing Architecture	3	0	0	3

**ELECTIVE II & III**

4	ET7003	Design of Embedded Control Systems	3	0	0	3
5	ET7004	Programming with VHDL	3	0	0	3
6	ET7005	Adhoc Networks	3	0	0	3
7	ET7006	Advanced Digital Signal Processing	3	0	0	3
8	CL7204	Soft Computing Techniques	3	0	0	3
9	ET7007	RISC Processor Architecture and Programming	3	0	0	3

**ELECTIVE IV ,V & VI**

10	ET7008	Advanced Embedded Systems	3	0	0	3
11	ET7009	Pervasive Devices and Technology	3	0	0	3
12	ET7010	Cryptography and Network Security	3	0	0	3
13	ET7011	Smart Meter and Smart Grid Communication	3	0	0	3
14	ET7012	Computer in Networking and Digital Control	3	0	0	3
15	ET7013	Distributed Embedded Computing	3	0	0	3
16	CL7004	Robotics and Control	3	0	0	3
17	ET7014	Application of MEMS Technology	3	0	0	3
18	ET7015	Digital Image Processing and Applications	3	0	0	3

  
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**ANNA UNIVERSITY, CHENNAI**  
**AFFILIATED INSTITUTIONS**  
**REGULATIONS – 2017**  
**CHOICE BASED CREDIT SYSTEM**  
**M.E. EMBEDDED SYSTEM TECHNOLOGIES (FULL TIME)**  
**CURRICULUM AND SYLLABUS I TO IV SEMESTERS**

**SEMESTER I**

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MA5155	Applied Mathematics for Electrical Engineers	FC	4	4	0	0	4
2.	ET5101	Advanced Digital Principles and Design	PC	5	3	2	0	4
3.	ET5151	Microcontroller Based System Design	PC	3	3	0	0	3
4.	ET5152	Design of Embedded Systems	PC	3	3	0	0	3
5.	ET5191	Software for Embedded Systems	PC	3	3	0	0	3
6.		Professional Elective I	PE	3	3	0	0	3
<b>PRACTICALS</b>								
7.	ET5111	Embedded System Lab I	PC	4	0	0	4	2
<b>TOTAL</b>				<b>25</b>	<b>19</b>	<b>2</b>	<b>4</b>	<b>22</b>

**SEMESTER II**

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	ET5251	Real Time Operating Systems	PC	3	3	0	0	3
2.	ET5201	Pervasive Devices and Technology	PC	3	3	0	0	3
3.	ET5202	RISC Processor Architecture and Programming	PC	5	3	2	0	4
4.	ET5203	Internet of Things	PC	3	3	0	0	3
5.		Professional Elective II	PE	3	3	0	0	3
6.		Professional Elective III	PE	3	3	0	0	3
<b>PRACTICALS</b>								
7.	ET5211	Embedded System Lab II	PC	4	0	0	4	2
<b>TOTAL</b>				<b>24</b>	<b>18</b>	<b>2</b>	<b>4</b>	<b>21</b>


**SEMESTER III**

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.		Professional Elective IV	PE	3	3	0	0	3
2.		Professional Elective V	PE	3	3	0	0	3
3.		Professional Elective VI	PE	3	3	0	0	3
<b>PRACTICALS</b>								
4.	ET5311	Project Work Phase I	EEC	12	0	0	12	6
5.	ET5312	Technical Seminar	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>23</b>	<b>9</b>	<b>0</b>	<b>14</b>	<b>16</b>

**SEMESTER IV**

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>PRACTICALS</b>								
1.	ET5411	Project Work Phase II	EEC	24	0	0	24	12
<b>TOTAL</b>				<b>24</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>12</b>

**TOTAL NO. OF CREDITS : 71**

  
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**FOUNDATION COURSES (FC)**

S.No	Course Code	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA5155	Applied Mathematics for Electrical Engineers	FC	4	4	0	0	4

**PROFESSIONAL CORE (PC)**

S.No	Course Code	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ET5101	Advanced Digital Principles and Design	PC	5	3	2	0	4
2.	ET5151	Microcontroller Based System Design	PC	3	3	0	0	3
3.	ET5152	Design of Embedded Systems	PC	3	3	0	0	3
4.	ET5191	Software for Embedded Systems	PC	3	3	0	0	3
5.	ET5111	Embedded System Lab I	PC	4	0	0	4	2
6.	ET5251	Real Time Operating Systems	PC	3	3	0	0	3
7.	ET5201	Pervasive Devices and Technology	PC	3	3	0	0	3
8.	ET5202	RISC Processor Architecture and Programming	PC	5	3	2	0	4
9.	ET5203	Internet of Things	PC	3	3	0	0	3
10.	ET5211	Embedded System Lab II	PC	4	0	0	4	2

**PROFESSIONAL ELECTIVES (PE)  
SEMESTER I  
ELECTIVE I**

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ET5091	MEMS Technology	PE	3	3	0	0	3
2.	ET5001	Advanced Computer Architecture and Parallel Processing	PE	3	3	0	0	3
3.	IN5092	Digital Instrumentation	PE	3	3	0	0	3

**SEMESTER II  
ELECTIVE II AND III**

1.	ET5002	Embedded Linux	PE	3	3	0	0	3
2.	ET5071	Advanced Digital Signal Processing	PE	3	3	0	0	3
3.	ET5003	Python Programming	PE	3	3	0	0	3
4.	ET5004	Embedded Product Development	PE	3	3	0	0	3
5.	ET5005	Automotive Embedded System	PE	3	3	0	0	3
6.	ET5006	Reconfigurable Processor and SoC Design	PE	3	3	0	0	3


**SEMESTER III  
ELECTIVE IV, V AND VI**

1.	ET5092	Digital Image Processing	PE	3	3	0	0	3
2.	ET5007	Embedded Networking and Automation of Electrical System	PE	3	3	0	0	3
3.	ET5008	Smart System Design	PE	3	3	0	0	3
4.	ET5009	Entrepreneurship Development	PE	3	3	0	0	3
5.	ET5010	Nano Electronics	PE	3	3	0	0	3
6.	ET5011	Distributed Embedded Computing	PE	3	3	0	0	3
7.	PS5091	Smart Grid	PE	3	3	0	0	3
8.	PS5073	Electric Vehicles and Power Management	PE	3	3	0	0	3
9.	ET5012	Soft Computing and Optimization Techniques	PE	3	3	0	0	3
10.	ET5013	Wireless And Mobile Communication	PE	3	3	0	0	3
11.	ET5014	Cryptography And Network Security	PE	3	3	0	0	3
12.	IN5079	Robotics and Control	PE	3	3	0	0	3

**EMPLOYABILITY ENHANCEMENT COURSES (EEC)**

S.No	Course Code	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ET5311	Project Work Phase I	EEC	12	0	0	12	6
2.	ET5312	Technical Seminar	EEC	2	0	0	2	1
3.	ET5411	Project Work Phase II	EEC	24	0	0	24	12

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ANNA UNIVERSITY, CHENNAI  
AFFILIATED INSTITUTIONS  
REGULATIONS 2013  
M.E. CAD / CAM

I TO IV SEMESTERS (FULL TIME) CURRICULUM AND SYLLABUS  
SEMESTER I

SL NO	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	MA7169	Advanced Numerical Methods	3	1	0	4
2.	ED7102	Computer Application in Design	3	0	2	4
3.	ED7204	Integrated Mechanical Design	3	1	0	4
4.	CM7201	Competitive Manufacturing Systems	3	0	0	3
5.	CC7101	Finite Element Applications in Manufacturing Engineering	3	1	0	4
6.		Elective I	3	0	0	3
<b>PRACTICAL</b>						
7.	CC7111	CAD / CAE Laboratory	0	0	2	1
<b>TOTAL</b>			<b>18</b>	<b>3</b>	<b>4</b>	<b>23</b>

SEMESTER II

SL NO	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	CC7201	Design for Manufacture, Assembly and Environments	3	0	0	3
2.	CM7001	Additive Manufacturing	3	0	0	3
3.	CM7202	Applied Materials Engineering	3	0	0	3
4.	CC7202	Integrated Product and Process Development	3	1	0	4
5.		Elective II	3	0	0	3
6.		Elective III	3	0	0	3
<b>PRACTICAL</b>						
7.	CC7211	CAM Laboratory	0	0	2	1
8.	CC7212	Design Project	0	0	3	2
<b>TOTAL</b>			<b>18</b>	<b>1</b>	<b>5</b>	<b>22</b>

SEMESTER III

SL NO	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.		Elective IV	3	0	0	3
2.		Elective V	3	0	0	3
3.		Elective VI	3	0	0	3
<b>PRACTICAL</b>						
4.	CC7311	Project Work (Phase I)	0	0	2	6
<b>TOTAL</b>			<b>9</b>	<b>0</b>	<b>12</b>	<b>15</b>

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**SEMESTER IV**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
<b>PRACTICAL</b>						
1.	CC7411	Project Work (Phase II)	0	0	24	12
<b>TOTAL</b>			<b>0</b>	<b>0</b>	<b>24</b>	<b>12</b>

**TOTAL CREDITS TO BE EARNED FOR THE AWARD OF THE DEGREE: 72**

**LIST OF ELECTIVES FOR M.E. CAD / CAM**

**SEMESTER I (Elective I)**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1	CC7001	Computer Control in Process Planning	3	0	0	3
2	ED7001	Optimization Techniques in Design	3	0	0	3
3	ED7101	Advanced Mechanics of Materials	3	0	0	3
4	ED7005	Design of Material Handling Equipments	3	0	0	3

**SEMESTER II (Elective II & III)**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1.	CC7002	Mechatronics Applications in Manufacturing	3	0	0	3
2.	CC7003	Industrial Safety Management	3	0	0	3
3.	CD7003	Advanced Tool Design	3	0	0	3
4.	ED7202	Mechanisms Design and Simulation	3	0	0	3
5.	IC7072	Computational Fluid Dynamics	3	0	0	3
6.	CC7004	Reliability in Engineering Systems	3	0	0	3
7.	ED7071	Industrial Robotics and Expert Systems	3	0	0	3

**SEMESTER III (Elective IV, V & VI)**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1.	ED7004	Design of Hydraulic and Pneumatic Systems	3	0	0	3
2.	CC7005	Data Communication in CAD/CAM	3	0	0	3
3.	CC7006	Performance Modelling and Analysis of Manufacturing System	3	0	0	3
4.	ED7010	Tribology in Design	3	0	0	3
5.	CC7007	Metrology and Non Destructive Testing	3	0	0	3
6.	CC7008	Quality Management Techniques	3	0	0	3
7.	CC7009	Design for Cellular Manufacturing Systems	3	0	0	3

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**REGULATIONS 2017**  
**M.E. CAD / CAM**  
**CHOICE BASED CREDIT SYSTEM**  
**I TO IV SEMESTERS (FULL TIME) CURRICULUM AND SYLLABUS**

**SEMESTER I**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MA5156	Applied Mathematics for Engineers	FC	4	4	0	0	4
2.	ED5151	Computer Applications in Design	PC	3	3	0	0	3
3.	CD5291	Computer Aided Tools for Manufacturing	PC	3	3	0	0	3
4.	CC5101	Competitive Manufacturing Systems	PC	3	3	0	0	3
5.	ED5153	Advanced Finite Element Analysis	PC	3	3	0	0	3
6.		Professional Elective I	PE	3	3	0	0	3
<b>PRACTICAL</b>								
7.	ED5161	CAD Laboratory	PC	4	0	0	4	2
8.	ED5162	Advanced Analysis and Simulation Laboratory	PC	4	0	0	4	2
<b>TOTAL</b>				<b>27</b>	<b>19</b>	<b>0</b>	<b>8</b>	<b>23</b>

**SEMESTER II**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	CC5291	Design for Manufacture, Assembly and Environments	PC	3	3	0	0	3
2.	CC5292	Additive Manufacturing and Tooling	PC	3	3	0	0	3
3.	ED5252	Mechanical Behavior of Materials	PC	3	3	0	0	3
4.	PD5251	Integrated Product Design and Process Development	PC	5	3	2	0	4
5.		Professional Elective II	PE	3	3	0	0	3
6.		Professional Elective III	PE	3	3	0	0	3
<b>PRACTICAL</b>								
7.	CC5211	CAM Laboratory	PC	2	0	0	2	1
8.	CC5212	Design Project	EEC	4	0	0	4	2
<b>TOTAL</b>				<b>26</b>	<b>18</b>	<b>2</b>	<b>6</b>	<b>22</b>

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**SEMESTER III**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	PD5091	Product Lifecycle Management	PC	3	3	0	0	3
2.		Professional Elective IV	PE	3	3	0	0	3
3.		Professional Elective V	PE	3	3	0	0	3
<b>PRACTICAL</b>								
4.	CC5311	Project Work Phase I	EEC	12	0	0	12	6
<b>TOTAL</b>				<b>21</b>	<b>9</b>	<b>0</b>	<b>12</b>	<b>15</b>

**SEMESTER IV**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>PRACTICAL</b>								
1.	CC5411	Project Work Phase II	EEC	24	0	0	24	12
<b>TOTAL</b>				<b>24</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>12</b>

**TOTAL CREDITS TO BE EARNED FOR THE AWARD OF THE DEGREE: 72**

  
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**FOUNDATION COURSES (FC)**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA5156	Applied Mathematics for Engineers	FC	4	4	0	0	4

**PROFESSIONAL CORE (PC)**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ED5151	Computer Applications in Design	PC	3	3	0	0	3
2.	CD5291	Computer Aided Tools for Manufacturing	PC	3	3	0	0	3
3.	CC5101	Competitive Manufacturing Systems	PC	3	3	0	0	3
4.	ED5153	Advanced Finite Element Analysis	PC	3	3	0	0	3
5.	ED5161	CAD Laboratory	PC	4	0	0	4	2
6.	ED5162	Advanced Analysis and Simulation Laboratory	PC	4	0	0	4	2
7.	CC5291	Design for Manufacture, Assembly and Environments	PC	3	3	0	0	3
8.	CC5292	Additive Manufacturing and Tooling	PC	3	3	0	0	3
9.	ED5252	Mechanical Behavior of Materials	PC	3	3	0	0	3
10.	PD5251	Integrated Product and Process Development	PC	5	3	2	0	4
11.	CC5211	CAM Laboratory	PC	2	0	0	2	1
12.	PD5091	Product Lifecycle Management	PC	3	3	0	0	3

  
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**LIST OF ELECTIVES FOR M.E. CAD / CAM**

**SEMESTER I (Elective I)**


SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CC5001	Computer Control in Process Planning	PE	3	3	0	0	3
2.	ED5071	Optimization Techniques in Design	PE	3	3	0	0	3
3.	ED5092	Advanced Mechanics of Materials	PE	3	3	0	0	3
4.	ED5073	Information Analytics	PE	3	3	0	0	3
5.	CC5002	Mechatronics Applications in Manufacturing	PE	3	3	0	0	3

**SEMESTER II (Elective II & III)**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CC5003	Industrial Safety Management	PE	3	3	0	0	3
2.	CD5071	Advanced Tool Design	PE	3	3	0	0	3
3.	ED5251	Mechanisms Design and Simulation	PE	3	3	0	0	3
4.	ED5093	Computational Fluid Dynamics	PE	3	3	0	0	3
5.	CC5004	Reliability in Engineering Systems	PE	3	3	0	0	3
6.	ED5253	Integrated Mechanical Design	PE	3	3	0	0	3

**SEMESTER III (Elective IV & V)**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CC5008	Performance Modeling and Analysis of Manufacturing System	PE	3	3	0	0	3
2.	CC5005	Metrology and Non Destructive Testing	PE	3	3	0	0	3
3.	CC5006	Quality Management Techniques	PE	3	3	0	0	3
4.	CC5007	Design for Cellular Manufacturing Systems	PE	3	3	0	0	3
5.	ED5078	Composite Materials and Mechanics	PE	3	3	0	0	3
6.	ED5091	Design of Material Handling Equipments	PE	3	3	0	0	3
7.	CD5091	Industrial Robotics and Expert Systems	PE	3	3	0	0	3
8.	ED5075	Design for Internet of Things	PE	3	3	0	0	3

  
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**EMPLOYABILITY ENHANCEMENT COURSES (EEC)**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CC5212	Design Project	EEC	4	0	0	4	2
2.	CC5311	Project Work Phase I	EEC	12	0	0	12	6
3.	CC5411	Project Work Phase II	EEC	24	0	0	24	12

  
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REGULATIONS - 2013  
M.E. SOFTWARE ENGINEERING  
I TO IV SEMESTERS CURRICULA AND SYLLABI (FULL TIME)**

**SEMESTER I**

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	MA7155	Applied Probability and Statistics	3	1	0	4
2.	SE7101	Software Risk Management and Maintenance	3	0	0	3
3.	SE7102	Advances in Software Engineering	3	0	0	3
4.	SE7103	Formal Models of Software Systems	3	0	0	3
5.	CP7102	Advanced Data Structure and Algorithms	3	0	0	3
6.		Elective I	3	0	0	3
<b>PRACTICAL</b>						
7.	SE7111	Software Requirements and Design Laboratory	0	0	4	2
8.	SE7112	Advanced Data Structures Laboratory	0	0	4	2
<b>TOTAL</b>			<b>18</b>	<b>1</b>	<b>8</b>	<b>23</b>

**SEMESTER II**

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	SE7201	Software Project Planning and Management	3	0	0	3
2.	SE7202	Software Testing	3	0	0	3
3.	SE7203	Software Metrics and Quality Assurance	3	0	0	3
4.	IF7203	Data Warehousing and Data Mining	3	0	0	3
5.	SE7204	Big Data Analytics	3	0	0	3
6.		Elective II	3	0	0	3
<b>PRACTICAL</b>						
7.	SE7211	Software Testing Laboratory	0	0	4	2
8.	SE7212	Socially Relevant Mini Project	0	0	4	2
<b>TOTAL</b>			<b>18</b>	<b>0</b>	<b>8</b>	<b>22</b>

  
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**SEMESTER III**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
<b>THEORY</b>						
1.	SE7301	Software Design Patterns	3	0	0	3
2.		Elective III	3	0	0	3
3.		Elective IV	3	0	0	3
4.		Elective V	3	0	0	3
<b>PRACTICAL</b>						
4.	SE7311	Project Work (Phase I)	0	0	12	6
<b>TOTAL</b>			<b>12</b>	<b>0</b>	<b>12</b>	<b>18</b>

**SEMESTER IV**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
<b>PRACTICAL</b>						
1.	SE7411	Project Work (Phase II)	0	0	24	12
<b>TOTAL</b>			<b>0</b>	<b>0</b>	<b>24</b>	<b>12</b>

**TOTAL NO OF CREDITS:75**


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**LIST OF ELECTIVES**

**ELECTIVE I**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1.	IF7013	Energy Aware Computing	3	0	0	3
2.	IF7202	Cloud Computing	3	0	0	3
3.	NE7002	Mobile and Pervasive Computing	3	0	0	3
4.	SE7001	Distributed System	3	0	0	3
5.	CP7028	Enterprise Application Integration	3	0	0	3

**ELECTIVE II**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
6	SE7010	Software Architecture	3	0	0	3
7.	MU7011	Video Compression	3	0	0	3
8.	SE7002	Pattern Classification and Analysis	3	0	0	3
9.	CP7012	Computer Vision	3	0	0	3
10.	MU7008	User Interface Design	3	0	0	3

**ELECTIVE III**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
11.	IF7301	Soft Computing	3	0	0	3
12.	SE7003	Machine Learning	3	0	0	3
13.	CP7024	Information Retrieval Techniques	3	0	0	3
14.	SE7004	Software Agents	3	0	0	3


**ELECTIVE IV**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
15.	MP7001	XML and Web Services	3	0	0	3
16.	SE7005	Web Engineering and Management	3	0	0	3
17.	NE7011	Mobile Application Development	3	0	0	3
18.	NE7012	Social Network Analysis	3	0	0	3

**ELECTIVE V**

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
19.	SE7006	Software Reliability	3	0	0	3
20.	SE7007	Software Documentation	3	0	0	3
21.	SE7008	Software Refactoring	3	0	0	3
22.	CP7015	Model Checking and Program Verification	3	0	0	3
23.	CP7006	Parallel Programming Paradigms	3	0	0	3
24.	SE7009	Software Process Models	3	0	0	3

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**M.E. SOFTWARE ENGINEERING**  
**REGULATIONS – 2017**  
**CHOICE BASED CREDIT SYSTEM**  
**I - IV SEMESTERS CURRICULA AND SYLLABI**


**SEMESTER I**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	MA5160	Applied Probability and Statistics	FC	4	4	0	0	4
2.	CP5151	Advanced Data Structures and Algorithms	PC	4	4	0	0	4
3.	SE5101	Software Architecture	PC	3	3	0	0	3
4.	CP5154	Advanced Software Engineering	PC	3	3	0	0	3
5.	SE5102	Software Requirements Engineering	PC	3	3	0	0	3
<b>PRACTICALS</b>								
6.	CP5161	Data Structures Laboratory	PC	4	0	0	4	2
7.	CP5281	Term Paper Writing and Seminar	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>23</b>	<b>17</b>	<b>0</b>	<b>6</b>	<b>20</b>

**SEMESTER II**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	SE5201	Software Testing Methodologies and Quality Assurance	PC	5	3	0	2	4
2.	IF5251	Software Industrialization	PC	3	3	0	0	3
3.	SE5202	Software Reliability Metrics and Models	PC	3	3	0	0	3
4.	IF5191	Advanced Databases	PC	3	3	0	0	3
5.		Professional Elective I	PE	3	3	0	0	3
6.		Professional Elective II	PE	3	3	0	0	3
<b>PRACTICALS</b>								
7.	SE5211	Software Development Laboratory	PC	4	0	0	4	2
<b>TOTAL</b>				<b>24</b>	<b>18</b>	<b>0</b>	<b>6</b>	<b>21</b>

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**SEMESTER III**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.	SE5301	Integrated Software Project Management	PC	3	3	0	0	3
2.		Professional Elective III	PE	3	3	0	0	3
3.		Professional Elective - IV	PE	3	3	0	0	3
4.		Professional Elective -V	PE	3	3	0	0	3
<b>PRACTICALS</b>								
5.	SE5311	Project Work Phase - I	EEC	12	0	0	12	6
<b>TOTAL</b>				<b>24</b>	<b>12</b>	<b>0</b>	<b>12</b>	<b>18</b>

**SEMESTER IV**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>PRACTICALS</b>								
1.	SE5411	Project Work Phase - II	EEC	24	0	0	24	12
<b>TOTAL</b>					<b>0</b>	<b>0</b>	<b>24</b>	<b>12</b>

**TOTAL NO. OF CREDITS:71**

  
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**FOUNDATION COURSES (FC)**


SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA5160	Applied Probability and Statistics	FC	4	4	0	0	4

**PROFESSIONAL CORE (PC)**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CP5151	Advanced Data Structures and Algorithms	PC	4	4	0	0	4
2.	SE5101	Software Architecture	PC	3	3	0	0	3
3.	CP5154	Advanced Software Engineering	PC	3	3	0	0	3
4.	SE5102	Software Requirements Engineering	PC	3	3	0	0	3
5.	CP5161	Data Structures Laboratory	PC	4	0	0	4	2
6.	SE5201	Software Testing Methodologies and Quality Assurance	PC	5	3	0	2	4
7.	IF5251	Software Industrialization	PC	3	3	0	0	3
8.	SE5202	Software Reliability Metrics and Models	PC	3	3	0	0	3
9.	IF5191	Advanced Databases	PC	3	3	0	0	3
10.	SE5211	Software Development Laboratory	PC	4	0	0	4	2
11.	SE5301	Integrated Software Project Management	PC	3	3	0	0	3

**EMPLOYABILITY ENHANCEMENT COURSE (EEC)**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CP5281	Term Paper Writing and Seminar	EEC	2	0	0	2	1
2.	SE5311	Project Work Phase – I	EEC	12	0	0	12	6
3.	SE5411	Project Work Phase - II	EEC	24	0	0	24	12

  
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**PROFESSIONAL ELECTIVES (PE)  
SEMESTER II  
ELECTIVE I**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	SE5001	Agile Software Engineering	PE	3	3	0	0	3
2.	SE5002	Business Intelligence	PE	3	3	0	0	3
3.	CP5092	Cloud Computing Technologies	PE	3	3	0	0	3
4.	SE5003	Software Test Automation	PE	3	3	0	0	3
5.	CP5293	Big Data Analytics	PE	3	3	0	0	3

**SEMESTER II  
ELECTIVE II**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	SE5004	Knowledge Management	PE	3	3	0	0	3
2.	SE5005	Software Verification and Validation	PE	3	3	0	0	3
3.	CP5191	Machine Learning Techniques	PE	3	3	0	0	3
4.	SE5006	Virtualization Techniques and Applications	PE	3	3	0	0	3
5.	CP5292	Internet of Things	PE	3	3	0	0	3

**SEMESTER III  
ELECTIVE III**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	SE5007	Web Design and Management	PE	3	3	0	0	3
2.	SE5008	Social Network Mining and Analysis	PE	3	3	0	0	3
3.	SE5009	Test Driven Development	PE	3	3	0	0	3
4.	SE5010	Personal Software Process	PE	3	3	0	0	3
5.	SE5011	Software Security	PE	3	3	0	0	3

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**SEMESTER III  
ELECTIVE IV**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	SE5012	Enterprise Application Integration	PE	3	3	0	0	3
2.	SE5013	Managing Human Resource	PE	3	3	0	0	3
3.	SE5014	Principles of Supply Chain Management	PE	3	3	0	0	3
4.	SE5015	Software Agents	PE	3	3	0	0	3
5.	SE5016	User Interface Design and Evaluation	PE	3	3	0	0	3

**SEMESTER III  
ELECTIVE V**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	SE5091	Service Oriented Architecture and Design	PE	3	3	0	0	3
2.	MP5291	Real Time Systems	PE	3	3	0	0	3
3.	CP5291	Security Practices	PE	3	3	0	0	3
4.	CP5094	Information Retrieval Techniques	PE	3	3	0	0	3
5.	AP5191	Embedded System Design	PE	3	3	0	0	3

  
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**AFFILIATED INSTITUTIONS**  
**M.E.BIGDATA ANALYTICS**  
**REGULATIONS – 2017**  
**CHOICE BASED CREDIT SYSTEM**  
**SEMESTER I**

S.NO	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1	MA5160	Applied Probability and Statistics	FC	4	4	0	0	4
2	CP5151	Advanced Data Structures and Algorithms	PC	4	4	0	0	4
3	BD5101	Foundations of Data Science	PC	5	3	2	0	4
4	BD5102	Big Data Mining And Analytics	PC	3	3	0	0	3
5	CP5152	Advanced Computer Architecture	PC	3	3	0	0	3
6	BD5103	Distributed Computing	PC	3	3	0	0	3
<b>PRACTICALS</b>								
7	CP5161	Data Structures Laboratory	PC	4	0	0	4	2
8	BD5111	Big Data Computing Laboratory	PC	4	0	0	4	2
<b>TOTAL</b>				<b>30</b>	<b>20</b>	<b>2</b>	<b>8</b>	<b>25</b>

**SEMESTER II**

S.NO	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1	CP5191	Machine Learning Techniques	PC	3	3	0	0	3
2	CP5292	Internet of Things	PC	3	3	0	0	3
3	IF5191	Advanced Databases	PC	3	3	0	0	3
4	CP5092	Cloud Computing Technologies	PC	3	3	0	0	3
5	BD5201	Big Data Security	PC	3	3	0	0	3
6		Professional Elective I	PE	3	3	0	0	3
<b>PRACTICALS</b>								
7	IF5161	Databases Laboratory	PC	4	0	0	4	2
8	CP5281	Term Paper Writing and Seminar	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>24</b>	<b>18</b>	<b>0</b>	<b>6</b>	<b>21</b>

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**SEMESTER III**

S.NO	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1.		Professional Elective II	PE	3	3	0	0	3
2.		Professional Elective III	PE	3	3	0	0	3
3.		Professional Elective IV	PE	3	3	0	0	3
<b>PRACTICALS</b>								
4.	BD5311	Project Work Phase I	EEC	12	0	0	12	6
<b>TOTAL</b>				<b>25</b>	<b>12</b>	<b>1</b>	<b>12</b>	<b>19</b>


**SEMESTER IV**

S.NO	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
<b>PRACTICALS</b>								
1	BD5411	Project Work Phase II	EEC	24	0	0	24	12
<b>TOTAL</b>				<b>24</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>12</b>

**TOTAL NO. OF CREDITS: 73**

**FOUNDATION COURSES (FC)**

S.NO	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1	MA5160	Applied Probability and Statistics	FC	4	4	0	0	4

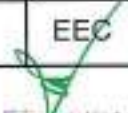
  
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**PROFESSIONAL CORE (PC)**

S.NO	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1	CP5151	Advanced Data Structures and Algorithms	PC	4	4	0	0	4
2	BD5101	Foundations of Data Science	PC	5	3	2	0	4
3	BD5102	Big Data Mining And Analytics	PC	3	3	0	0	3
4	CP5152	Advanced Computer Architecture	PC	3	3	0	0	3
5	BD5103	Distributed Computing	PC	3	3	0	0	3
6	CP5161	Data Structures Laboratory	PC	4	0	0	4	2
7	BD5111	Big Data Computing Lab	PC	4	0	0	4	2
8	CP5191	Machine Learning Techniques	PC	3	3	0	0	3
9	CP5292	Internet of Things	PC	3	3	0	0	3
10	IF5191	Advanced Databases	PC	3	3	0	0	3
11	CP5092	Cloud Computing Technologies	PC	3	3	0	0	3
12	BD5201	Big Data Security	PC	3	3	0	0	3
13	IF5161	Databases Laboratory	PC	4	0	0	4	2

**EMPLOYABILITY ENHANCEMENT COURSES (EEC)**

S.NO	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1	CP5281	Term Paper Writing and Seminar	EEC	2	0	0	2	1
2	BD5311	Project Work Phase I	EEC	12	0	0	12	6
3	BD5411	Project Work Phase II	EEC	24	0	0	24	12

  
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**PROFESSIONAL ELECTIVES**

S.NO	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
<b>PROFESSIONAL ELECTIVE I</b>								
1	BD5001	High Performance Computing for Big Data	PE	3	3	0	0	3
2	SE5091	Service Oriented Architecture and Design	PE	3	3	0	0	3
3	CP5094	Information Retrieval Techniques	PE	3	3	0	0	3
4	CP5009	Data Visualization Techniques	PE	3	3	0	0	3
5	SE5014	Principles of Supply Chain Management	PE	3	3	0	0	3
<b>PROFESSIONAL ELECTIVE II</b>								
6	IF5002	Deep Learning	PE	3	3	0	0	3
7	MU5251	Multimedia Communication Networks	PE	3	3	0	0	3
8	BD5002	Agile Software Development	PE	3	3	0	0	3
9	BD5003	Predictive Modelling	PE	3	3	0	0	3
10	IF5091	Video Analytics	PE	3	3	0	0	3
<b>PROFESSIONAL ELECTIVE III</b>								
11	BD5004	NOSQL Databases	PE	3	3	0	0	3
12	MP5007	Cognitive Computing	PE	3	3	0	0	3
13	CP5074	Social Network Analysis	PE	3	3	0	0	3
14	SE5006	Virtualization Techniques and Applications	PE	3	3	0	0	3
15	BD5005	Natural Language Processing	PE	3	3	0	0	3
<b>PROFESSIONAL ELECTIVE IV</b>								
16	SE5002	Business Intelligence	PE	3	3	0	0	3
17	BD5006	R Language	PE	3	3	0	0	3
18	BD5007	Web Analytics	PE	3	3	0	0	3
19	CP5075	Bio Informatics	PE	3	3	0	0	3
20	BD5008	Healthcare Data Analytics	PE	3	3	0	0	3

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