CURRICULUM – 2009
(C-09)

DIPLOMA IN
COMPUTER ENGINEERING

State Board of Technical Education & Training
Andhra Pradesh : : Hyderabad

CURRICULUM-2009
(C-09)

Salient features in proposed   curriculum-C-09

<u>Special features</u>:

1) The curriculum is restructured to have 2 ½ years (5 semesters) in house
training at the Institution and 6 months Industrial training in an Organization / Industry
relevant to the field of specialization. This is   mainly aimed   to improve   the practical skills in
the students to make them ready to cater the needs of Industry with hands on experience
and with a very good practical vision.

2)   An effort has been made to improve the communication skills and personality
development of   the students, by restructuring the English Language / communication subjects
and extending them to all the three years. i.e. I Year and III , ,IV, and V semesters.

The main intention behind this is to improve their communication / presentation skills and
to develop their personality to enable them to stand as an useful product in the global
market.

3) Computer Fundamentals & Programming in C is introduced   in the I year curriculum itself in
addition to the Information Technology Lab for getting started with the programming language.

   This enables   the student to have good acquaintance with computers ,internet, e-Mailing
from First year   onwards . It also   enables the student to keep pace with latest trends of the
present day technology.

4) Their knowledge and skills in computer Servicing and Maintenance changing the name of the
subject as Computer Hardware & Networking and by allocating more periods for the subject.

   Much emphasis has been given in imparting practical training in Computer Lab Subjects,
   so that the student will have hands on experience and confidence by the time   he / she
   completes   his / her diploma course.

   Imparting training in   Computer Hardware & Networking and Computer Animation will
   surely improve the potentiality of the students   in getting   good employment. It is also
   felt that this knowledge is also the need of the hour for any technician or Engineer.

5) Every effort has been made while restructuring the curriculum to mould the students
   to become   very good " Technicians " with more practical visualization.

      This has been done   by deleting   un necessary and extra information and
   regrouping the subjects to impart theoretical inputs to the students up to sufficient depth.
   This saving in time has been utilized in slightly improving on the practical inputs
   during in-house training itself.

6) Seminars also form a part of the curriculum in all the three years. This will surely improve the abilities of the students in communication / presentation skills.

7) Much emphasis has been given for practical subjects by dividing the combined practical subjects in the earlier curriculum in to individual subjects by allotment of separate subject codes. Also the examination time for all practical subjects is common and is fixed as 3 hrs duration . This allows the examiners (both internal and external) to pay much attention towards the examinee during practical / laboratory evaluation.

Branch specific features:

Computer Engineering

1. CM105 - Computer Fundamentals & Programming in C
   - The topics of Office Automation are deleted and placed in CM-110 as this requires more practical training.

.2. CM-106 -Engineering Drawing
   a. Projection of regular solids is added as it is necessary for technicians
   b. The other content and the total number of periods is left unchanged.
   c. Periods for the individual topics is restructured

3. CM- 107- Computer Fundamentals & Programming in C Lab;
   - Deleted MS-Office as they are included in CM-110 and Programming in C is added

4 CM-110-Information Technology Lab
   a. The lab is introduced in the first year instead of in 4th semester
   b. C-language is totally deleted
   c. Emphasis is given on MS-office applications
   d. Total periods is enhanced from 45 to 90
   e. Windows, internet etc is included

5. CM-302- Basic Electrical and Electronics Engineering
   - Special semi conductor devices and complicated features
   - Subject periods reduced from 90 to 75 periods

6.CM- 303 Digital Electronics and Computer Architecture
   -Block diagram of memory unit, ROM, Associative memory added
   - Address mapping techniques, paging and segmentation deleted

7. CM-304 : Data Structures Through C
   - Algorithm Analysis for time and space,
   -Applications of Queue ,
   -Conversions and Application of trees , insertion sort added
   -Transpose of sparse matrix and quick sort deleted.

8. CM-305   RDBMS
- RDBMS terminology , E.F.Codd 's rules , sub queries, joins, database triggers added.
- Rollback segment information deleted

9.CM-306   Data Structures Lab
- More exercise s in chapters 2 and 3 added
- Quick sort program deleted

10.CM-307 Digital Electronics Lab
No change

11. CM-308 Electronic Workshop Practice
No change

12. CM-309 RDBMS Lab
- More Exercises added

13.CM-401   Operating systems
- system call definitions added
- Allocation of frames , working set model, page fault frequency deleted
- some topics are rearranged

14.CM-402 Computer Hardware and Networking
- Networking concepts added from Computer Network Subject of C-05

15. CM-403 OOPS through C++
NO CHANGE

16.CM-404 Microprocessors
Subject is reorganized and more emphasis is given to ALP.
Importance to ALP & Interfacing

17. CM -405 - .NET Programming
New Subject introduced

18. CM-406 Computer Hardware and Networking Lab.
- Networking practicals included and more number of periods allotted.

19. CM-407 C++ Lab
- More Exercises added in chapter 1,2,3
- Mini project deleted

20. CM – 408 – Microprocessors Lab.
More Experiments are added to focus ALP

21. CM-409   .NET Programming Lab.
- New lab introduced as related theory subject introduced.

22. CM-601 Industrial Management and Entrepreneurship:

   Certain topics are deleted and some topics are reorganized as the number of periods allotted reduced from 90 to 75.

23. CM- 602 System Administration
            - Windows NT , NT file system ,system administration deleted
            - Windows 2003 server environment , introduction to Linux,
              Linux administration added

24. CM-603 Java Programming
            - OOP concepts deleted as covered in OOP through C++

25. CM-604   Web Designing
                Duplication of topics deleted and some topics rearranged
                Web designing principles are added
                XML Documentation, JSP are added.
                PHP also added

 26. CM-605(A) Software Engineering
        Periods were reduced from 90 to 75 and syllabus was rearranged accordingly.

27. CM-605(B) Mobile Computing
         -1G, 2G, 3G and 4G of wireless technologies are added.

28. CM-605(C) Advanced Database Systems
                NO CHANGE

29. CM-606   System Administration Lab
                -NT File system deleted, Linux Experiments added

30. CM-607   Java Programming lab
                - Programs on OOPs Concepts which are covered in C++ Lab are removed

31.CM-608 - Web Designing Lab
                PHP experiments added
                Simple case study is added.

 32.CM-609 Computer Animation Lab
                New Lab introduced

General features:

ENGLISH:

Greater emphasis on communicative language teaching resulting in interactive sessions in English ,both during theory and practical classes.

Introduction of practical sessions in III , IV and V semesters to develop communicative competence.

Practical sessions focus on personality development and team building skills .

Practical sessions aim at developing employability skills.

Co-operative learning techniques used during the process of learning aim at instilling learning skills and developing learner autonomy.

MATHEMATICS:

Bridging of Fundamental Mathematics Induced :

In the restructured Curriculum C-09, the Subject of Mathematics is designed in such a manner that it starts with a chapter on Bridging of fundamentals in mathematics incorporating 10 periods in the schedule with due Weightage of marks in sessionals as well as end exam for better understanding and to improve the problem solving techniques in mathematics as many of the diploma students lacking skills in above topics.

Three Dimensional Geometry Introduced:

Three dimensional Geometry with basic concepts of Co-ordinates, Planes were introduced with a weightage of 7 periods in the I Year to have better visualizations and imagination of three dimensional views which are required for proper understanding of Engineering Drawings and Designs etc.

Reduced the depth of problems and more focused on Concepts:

To improve the pass percentage, the depth of the problems was reduced and focused more in understanding the basic concepts of mathematics which are required for mathematics to be a supporting subject for having better idea and understanding of the engineering subject treatment.

Deleted Laplace transformations and Fourier Series Topics:

The total weightage for periods for the mathematics subject was reduced to 195 periods from 225 periods by deleting the Laplace Transformations and Fourier Series Topics as they were not necessary for engineering Diploma Students at this level.

Integration Completely Shifted to 3rd semester :

The Topic Integration which is being taught as the last Topic of I year ie. at the end of I year in Curriculum C-05 is completely shifted to III semester as it is being neglected by many of the students and making them to face problems in understanding the Engineering subjects which requires Integral Calculus for their theoretical basis and treatment . To this effect the total periods for I year Engineering Mathematics was reduced to 120 periods form 150 periods. The Total

Periods for 3rd semester Engineering Mathematics –II subject remains as it is, in the Previous Curriculum as 75 periods.

PHYSICS:

As per C 05 Curriculum 120 periods were earmarked for theory and 45 periods were allotted for Practical. In the proposed curriculum C09 the periods for both theory and practical in the Physics subject are suggested as 105 and 45 respectively. The theory periods are inclusive of 15 seminar/tutorial periods to be framed in the Time Table (Weekly) with one seminar period in two weeks.

1. UNITS AND DIMENSIONS: In this chapter, the topic rules of writing units is omitted as it is felt not necessary for the students of technician courses.

2. ELEMENTS OF VECTORS: In this chapter, the illustrations of parallelogram law of vectors is deleted for the benefit of the student s so that they can focus important fundamentals of that chapter.

3. KINEMATICS: In this chapter, the equations describing vertical motion are dropped as they are repeated from SSC syllabus

4. FRICTION: In this chapter, explanation to kinds of friction is removed as the knowledge of such depth is not essential for technician course students

5. WORK, POWER AND ENERGY: In this chapter the topic energy sources is dropped as the same can be taught and studied in their respective subjects of branches

6. SIMPLE HARMONIC MOTION: This chapter is totally unchanged as all topics highly important for the students so that the y can be benefited in understanding the applications in industries

7. HEAT AND THERMODYNAMICS: In this chapter the topics internal energy and applications of various processes are deleted as the topics are useful to only few diploma courses.

8. ACOUSTICS / SOUND: In this chapter the topics Acoustics of buildings is deleted as the topics are useful to only few diploma courses.

9. PROPERTIES OF MATTER: This chapter is newly introduced since the topics are highly helpful in developing the practical skill in their respective branches.

10. ELECTRICITY & MAGNETISM: This chapter is newly introduced in place of Electromagnetism as many topics of electromagnetism are repeated in SSC and the topics of electricity and magnetism, which are included , will create better visualization of their applications in their working places

11. MODERN PHYSICS: In this chapter the advanced topic Meissner effect is not needed for the technician course students and hence deleted. The

concepts of Critical angle and total internal reflection are incorporated for better understanding of optical fibers.

More emphasis is made on teaching fundamental principles of physics which are highly needed for the technician students for developing their practical skill to become successful technicians in future by restructuring the syllabus of physics subject.

Physics Practicals:

In view of the restructuring of theory subject Physics, the Practicals suggested under proposed curriculum C-09 are relevant and appropriate to cater to the needs of the student s of Diploma level courses. One demonstration experiment Cathode Ray oscilloscope is deleted as it is not included in theory. More over it is beneficial to only students of few courses in particular and not useful for many courses in general. The utility of the fundamentals of physics which are essential for technician courses students can be appreciated in doing the experiments in physics laboratory. A new experiment in magnetism is incorporated in place of Cathode Ray Tube, which is useful to have hands on experience in the applications of Magnetism .

All the practicals suggested are conformity with the principles of physics proposed in the C-09 Curriculum.

CHEMISTRY

- Basic topics like Atomic structure, Periodic Table, Chemical Bond and Oxidation-Reduction are included in fundamentals of Chemistry for recapitulation purpose and to make the students understand the Chemistry easily.

- Principles of Metallurgy is introduced in this C-09 Curriculum to give Industrial Orientation to the students.

- .Reverse Osmosis is included in Water Technology since it is a modern method for removal of impurities from water.

- Topics like scope and importance of environmental studies, energy resources land resources, forest resources, ecosystem, producers, consumers decomposers, and biodiversity from environmental studies of IV semester (C-05) are added to Chemistry subject as they are related to Chemistry and to test the students through Board exam instead of in-house exam, which was in practice earlier.

- Advanced Topics like Hybridization, Hydrogen Bond, Lead storage battery, which are not required at Diploma level and repetitive Topics like Arrehenius theory of acids and bases etc are deleted from the syllabus.

- C-05 Chemistry lab experiments are Industry oriented and relevant. Hence the same syllabus is proposed for C-09 Chemistry lab Curriculum.

1ST YEAR

Sl.No	Subject code	Subject Name	Page No
1	CM-101	English	
2	CM-102	Engineering Mathematics - I	
3	CM-103	Engineering Physics	
4	CM-104	Engineering Chemistry and Environmental Studies	
5	CM-105	Computer Fundamentals & Programming in C	
6	CM-106	Computer Fundamentals & Programming in C lab	
7	CM-107	Engineering Drawing	
8	CM-108	Physics Laboratory	
9	CM-109	Chemistry Laboratory	
10	CM-110	Information Technology Lab	

CURRICULUM (C-09) FOR DIPLOMA COURSES IN ANDHRA PRADESH

Preamble

The State Board of Technical Education and Training, Andhra Pradesh under the aegis of the Department of Technical Education, Andhra Pradesh generally reviews the Curricula once in every five years. However, recognizing the changing needs as stated by the user industries, the board has decided to bring forward the revision of curriculum by a year. Consequently, the Board with the assistance of the faculty made a thorough assessment of the curricular changes that have to be made. It was felt that there is an urgent need to improve hands-on experience among the students pursuing diploma courses. Further, the urgency of enhancing communication skills in English was also highlighted in the feedback and suggestions made by the user industries. Keeping these in view, a number of meetings and deliberations were held at district and state level, with experts from industry, academia and senior faculty of the department. The new Curricula for the different diploma courses have been designed with the active participation of the members of the faculty teaching in the Polytechnics of Andhra Pradesh. This will be implemented from the academic year 2009-10.

The primary objective of the curricular change is to produce best technicians is the country by correlating growing needs of the industries with the academic input.

Salient Features:

1. Duration of course is modified from 3 years of academic instruction to 2½ years of academic instruction and 6 months of industrial training

2. Every student will get the benefit of Exposure to industry, hands on training; understand the industrial environment and the behavioural pattern while working in an industry.

3. The Curriculum is prepared on Semester Pattern sandwiched with One semester of Industrial Training at 5ᵗʰ Semester level. However, First Year is maintained as Year-wise pattern.

4. The policy decisions taken at the State and Central level are implemented with regard to environmental science by including relevant topics in Chemistry. This is also in accordance with the Supreme Court guidelines issued in Sri Mehta's case.

5. Keeping in view the increased need of communication skills which is playing a major role in the success of Diploma Level students in the Industries, emphasis is given for learning and acquiring listening, speaking and writing skills in English. Further as emphasized in the meetings, teaching of the language has been spread over all the three years of the course and special emphasis is also on areas of employability skills.

6. Advanced topics not relevant at diploma level of education are deleted.

7. Modern topics relevant to the needs of the industry and global scenario suitable to be taught at Diploma level are incorporated in the curriculum.

8. AutoCAD specific to the branch has been given more emphasis in the curriculum. Preparing drawings using Computer has been given more importance using CAD softwares

9. Every student is exposed to the computer lab at the 1ˢᵗ year stage itself in order to familiarize him with skills required for keyboard/mouse operation, internet usage and e-mailing.

10. The number of teaching hours allotted to a particular topic/chapter has been rationalized keeping in view the past experience

11. Elective subjects have been introduced at the 6ᵗʰ semester stage to enable to study certain subjects of importance/specialization.

12. Upon reviewing the existing C-05 curriculum, it is found that the theory content is found to have more weightage than the Practical content. In the revised C-09 curriculum, more attention is given to the practical content of Laboratories and Workshops, thus strengthening the practical side. Industrial Training has been introduced for One full semester to impart Practical Experience during the course of study itself.

13. With increased emphasis for the student to acquire Practical skills, the course content in all the subjects is thoroughly reviewed. While the course content in certain subjects is reduced, in rest of the subjects the content has been enhanced as per the need of the hour.

14. All Practical subjects are independent of each other and the practice of grouping two or more practical subjects is dispensed with.

15. Curricula of Laboratory and Workshops have been thoroughly revised basing on the suggestions received from the industry, faculty, for better utilization of the equipment available at the Polytechnics. The experiments /exercises that are chosen for the practical sessions are identified to confirm to the field requirements of industry.

16. Industrial Training introduced in V semester is aimed at promoting working in groups/Team building skills through *'practice-oriented, project based activities'*. This helps the student in interacting with people in better interaction of students with Industries, R & D Institutions and other developmental/promotional agencies.

17. The Members of the working group are grateful to Sri L.Prem Chandra Reddy, I.A.S., Commissioner of Technical Education & Chairman, S.B.T.E.T. and Sri Somesh Kumar, I.A.S., for their guidance and valuable inputs in revising, modifying and updating the curriculum.

18. The Members acknowledge with thanks the cooperation and guidance provided by Sri. P.T. Prabhakar, Secretary, State Board of Technical Education and Training, A.P., and other officials of Directorate of Technical Education and the State Board of Technical Education, A.P, experts from industry, academia from the universities and higher learning institutions and all teaching fraternity from the Polytechnics who are directly and indirectly involved in preparation of the curricula.

RULES AND REGULATIONS FOR DIPLOMA COURSES
UNDER THE CURRICULUM – 2009   (C-09)

1.   DURATION AND PATTERN OF THE COURSES

All the Diploma programs run at various institutions are of either 3 years or 3½ years duration, with Industrial Training of 6 months / one year, sandwiched between two Semesters of Academic Instruction.

All the Diploma courses are run on year wise pattern in the First year, and the remaining two or two & half years are run in the semester pattern. For all conventional branches, the Industrial Training is placed in the fifth semester. For all other courses, the training will be in the fifth & sixth semesters, and seventh semester will be at the institution. In respect of few courses like Diploma in Electronics with specialization in CP/ CN/ IE/ TV/ BM/ Embedded systems, the training will be in the seventh semester.

2.   PROCEDURE FOR ADMISSION IN TO THE DIPLOMA COURSES:

Selection of candidates is governed by the Rules and regulations lay down in this regard from time to time.

i)   Candidates who wish to seek admission in any of the Diploma courses will have to appear for common entrance examination (CEEP) conducted by the State Board of Technical Education and Training, Andhra Pradesh, Hyderabad.

Only the candidates satisfying the following requirements will be eligible to appear for the Common Entrance Examination (CEEP).

a)   The candidates seeking admission should have appeared for the X class examination, conducted by the Board of Secondary Examination, Andhra Pradesh or equivalent examination thereto, at the time of making application to the Common Entrance Examination for Polytechnics (CEEP). In case candidates who apply pending results of their qualifying examinations, their selection shall be subject to production of proof of their passing the qualifying examination in one attempt or compartmentally at the time of interview for admission.

b)   Admissions are made based on the merit obtained in the Common Entrance Examination (CEEP) and the reservation rules stipulated by the Government of Andhra Pradesh from time to time.

c)   For admission into the following Diploma Courses for which entry qualification is 10+2, candidates need not appear for CEEP. A separate notification will be issued for admission into these courses.

1). D.H.M.C.T. 2). D.Pharmacy

3.   MEDIUM OF INSTRUCTION

The medium of instruction and examination shall be English.

4.   NUMBER OF WORKING DAYS PER SEMESTER / YEAR:

a).   The Academic year for all the Courses shall be from Fifteenth June of the year of admission to the 31st March of the succeeding year.

b).   The Working days in a week shall be from Monday to Saturday

c). There shall be 7 periods of 50 minutes duration on all working days.

d). The minimum number of working days for each semester / year shall be 90 / 180 days excluding examination days. If this prescribed minimum is not achieved due to any reason, special arrangements shall be made to conduct classes to cover up the curriculum.

5.   **ELIGIBILITY OF ATTENDENCE TO APPEAR FOR THE END EXAMINATION**

a).   A candidate shall be permitted to appear for the end examination in all subjects, if he or she has attended a minimum of 75% of working days during the year/Semester.

b).   Condonation of shortage of attendance in aggregate up to 10% (65% and above and below 75%) in each semester or 1st year may be granted on medical grounds.

c).   Candidates having less than 65% attendance shall be detained.

d).   Students whose shortage of attendance is not condoned in any semester / 1st year are not eligible to take their end examination of that class and their admissions shall stand cancelled. They may seek re-admission for that semester / 1st year when offered next.

e).   A stipulated fee shall be payable towards condonation of shortage of attendance.

6.   READMISSION

Readmission shall be granted to eligible candidates by the respective RJD's / Principals

1)   Within 15 days after commencement of class work in any semester
     (Except industrial Training)

2)   Within 30 days after commencement of class work in any year (including D.Pharrmacy course or first year course in Engineering and Non Engineering Diploma streams)

     Otherwise such cases shall not be considered for readmission for that semester / year and are advised to seek readmission in the next subsequent eligible academic year.

     The percentage of attendance of the readmitted candidates shall be calculated from the first day of begining of the regular class work for that year / Semester, as officially announced by CTE/SBTET but not form the day on which he/she has actually reported to the class work, after readmission is granted.

7. SCHEME OF EXAMINATION

THEORY EXAMINATION: Each Subject carries 80% marks with examination of 3 hours duration, along with 20% marks for internal evaluation. (Sessional marks). However, there are no minimum marks prescribed for sessionals.

PRACTICAL EXAMINATION: There shall be 40% Marks for regular practical work done, i.e. sessional marks for each practical subject with an end examination of 3 hours   duration carrying 60% marks. However, there are no minimum marks prescribed for   sessionals.

8. INTERNAL ASSESSMENT SCHEME

a)   Theory Subjects: Theory Subjects carry 20 % sessional marks.
     Internal examinations will be conducted for awarding sessional marks on the dates specified. Four unit tests will be conducted for I year students and two for semesters. Average marks obtained in all the tests will be considered for awarding the sessional marks.

b) Practicals: Student's performance in Laboratories / Workshop shall be assessed during the year of study for 40% marks in each practical subject. Allotment of marks should be discrete taking into consideration the students skills, accuracy, recording and performance of the task assigned to him / her. Each student has to write a record / log book for assessment purpose. In the subject of Drawing, which is also considered as a practical paper, the same rules hold good. Drawing exercises are to be filed in seriatum.

c) Internal assessment in Labs / workshops / Survey field etc., during the course of study shall be done and sessional marks awarded by Lecturer / Senior Lecturer / Workshop superintendent as the case may be.

d) For practical examinations, except in drawing, there shall be two examiners. External examiner shall be appointed by the Principal in consultation with respective head of the department preferably choosing a person from an Industry. Internal examiner shall be the person concerned with internal assessment as in (c) above. For drawing the end examination shall be held along with all theory papers.

e) Question Paper for Practicals: Question paper should cover all the experiments / exercise prescribed.

f) Records pertaining to internal assessment marks of both theory and practical subjects are to be maintained for official inspection.

g) In case of Industrial Training, the training assessment shall be done and marks be awarded in the following manner. A final decision in this regard would be taken before the end of Academic Year 2009-10.

Industrial assessment :   600 marks (in Three spells)
Maintenance of log book :   50 marks
Record Work   :   50 marks
Seminar / viva-voce   :   50 marks

TOTAL   :   750 marks

The assessment at the institute level will be done by a minimum of three faculty members including H.O.D. and be averaged.

9. **MINIMUM PASS MARKS**

THEORY EXAMINATION:

For passing a theory subject, a candidate has to secure a minimum of 35% in end examination and a combined minimum of 35% of both Sessional and end examination marks put together.

PRACTICAL EXAMINATION:

For passing a practical subject, a candidate has to secure, a minimum of 50% in end examination and a combined minimum of 50% of both sessional and practical examination marks put together. In case of D.C.C.P., the pass mark for typewriting and short hand is 45% in the end examination. There are no sessional marks for typewriting and Shorthand subjects of D.C.C.P course.

10. PROVISION FOR IMPROVEMENT

1. Improvement is allowed only after he / she has completed all the subjects from First Year to Final semester of the Diploma.
2. Improvement is allowed in any 4 (Four) subjects of the Diploma.
3. The student can avail of this improvement chance only once, that too within the succeeding two examinations after the completion of Diploma, with the condition that the duration including betterment examination shall not exceed <u>FIVE</u> years from the first admission.
4. No improvement is allowed in Practical / Lab subjects or Project work or

   Industrial Training assessment. However, improvement is allowed in drawing   subject.

5. If improvement is not achieved, the marks obtained in previous Examinations hold good.
6. Improvement is not allowed in respect to the candidates who are punished under Mal-practice in any Examination.
7. Examination fee for improvement shall be paid as per the notification issued by State Board of Technical Education and Training from time to time.
8. All the candidates who wish to appear for improvement of performance   shall deposit the original Marks Memos of all the years / Semesters and also original Diploma Certificate to the Board. If there is improvement in performance of the current examination, the revised Memorandum of marks and Original Diploma Certificate will be issued else the submitted originals will be returned.

11. RULES OF PROMOTION FROM 1ST YEAR TO 3,^{rd,} 4,th 5th , 6th and 7th SEMESTERS:

For Diploma Courses of 3 years duration

1. A candidate shall be permitted to appear for first year examination provided he / she puts in 75% attendance (which can be condoned on Medical grounds upto 10%) i.e. attendance after condonation on Medical grounds should not be less than 65% and pay the examination fee.

2. A candidate shall be promoted to 3rd semester if he/she puts the required percentage of attendance in the first year and pays the examination fee. A candidate who could not pay the first year examination fee has to pay the promotion fee as prescribed by State Board of Technical Education and Training from time to time before commencement of 3rd semester.

3. A candidate shall be promoted to 4th semester provided he/she puts the required percentage of attendance in the 3rd semester and pay the examination fee. A candidate who could not pay the 3rd semester exam fee, has to pay the promotion fee as prescribed by State Board of Technical Education and Training from time to time before commencement of 4th semester.

A candidate is eligible to appear for the 4th semester exam if he/she
i)   Puts the required percentage of attendance in the 4th semester
ii)   Should not have failed in more than Four backlog subjects of 1st year

4. A candidate shall be promoted to 5th semester (Industrial Training) provided he / she puts the required percentage of attendance in the 4th semester and pays the examination fee. A candidate, who could not pay the 4th semester examination fee, has to pay the promotion fee as prescribed by State Board of Technical Education and Training from time to time before commencement of 5th semester.

A candidate is eligible to appear for 5th semester Industrial Assessment, if he/she

i)   Puts the required percentage of attendance(90%) in 5th semester and
ii)   Should have obtained the eligibility to appear for 4th semester examination

5. A candidate shall be promoted to 6th semester provided he/she has successfully completed Industrial Training (Passed) and he / she puts the required percentage of attendance in the 5th semester and pay the industrial assessment fee. A candidate, who could not pay the 5th semester industrial assessment fee, has to pay the promotion fee as prescribed by State Board of Technical Education and Training from time to time before commencement of 6th semester.

A candidate is eligible to appear for 6th semester examination if he/she

i)   Puts the required percentage of attendance in 6th semester and
ii)   Should not have failed in more than six backlogs subjects of 1st year, 3rd & 4th semesters put together.
iii)   Should not have failed in more than Six backlog subjects of 3rd and 4th semesters put together for IVC students.

d) For Diploma Courses of 3 ½ Years duration:

 i) MET/ CH/ CHPP/ CHPC/ CHOT/ TT/ SM

1.   A candidate shall be permitted to appear for 1st year examination provided he / she puts in 75% attendance (which can be condoned on Medical grounds upto 10%) i.e. attendance after condonation on Medical grounds should not be less than 65% and pay   the examination fee.

2.   A candidate shall be promoted to 3rd semester if he/she puts the required percentage of attendance in the 1st year and pays the examination fee. A candidate who could not pay   the 1st year examination fee has to pay the promotion fee as prescribed by State Board of   Technical Education and Training from time to time before commencement of 3rd   semester.

3. A candidate shall be promoted to 4th semester provided he/she puts the required percentage of attendance in the 3rd semester and pay the examination fee. A candidate who could not pay the 3rd semester exam fee, has to pay the promotion fee as prescribed by State Board of Technical Education and Training from time to time before commencement of 4th semester.

A candidate is eligible to appear for the 4th semester exam if he/she

i)   Puts the required percentage of attendance in the 4th semester
ii)   Should not have failed in more than Four backlog subjects of 1st year.

4. A candidate shall be promoted to 5th semester provided he / she puts the required percentage of attendance in the 4th semester and pays the examination fee. A candidate, who could not pay the 4th semester examination fee, has to pay the promotion fee as prescribed by State Board of Technical Education and Training from time to time before commencement of 5th semester.

5. Promotion from 5th to 6th semester is automatic (i.e., from 1st spell of Industrial Training to 2nd spell) provided he/she puts the required percentage of attendance, which in this case would be   90 % attendance and attends for the VIVA-VOCE examination at the end of training.

A candidate shall be promoted to 7th semester of the course provided he/she has successfully completed both the spells of Industrial Training (Passed).

A candidate is eligible to appear for 7th semester examination if he/she

(i)   Puts the required percentage of attendance in the 7th semester and
ii)   Should not have failed in more than 6 backlog subjects of 1st year,3rd and 4th semesters put together.

iii)   Should not have failed in more than Six backlog subjects of 3rd and 4th semester put together for IVC students.

ii)   **DIPLOMA IN FOOTWEAR TECHNOLOGY:**

In respect of Diploma in Footwear Technology, the Industrial training is offered in two spells, the 1st spell of Industrial training after the First Year (I.e III Semester of the course) and the second spell of Industrial training after the V Semester (i.e VI Semester of the course). The promotion rules for this course are on par with the other sandwich Diploma courses except that there is no restriction on number of backlog subjects to get eligibility to appear for the 4th semester examination and
A candidate is eligible to appear for 5th semester examination if he / she
1. Puts the required percentage of attendance in the 5th semester and
2. Should not have failed in more than four subjects of 1st year.

OTHER DETAILS

a)   In case a candidate does not successfully complete the Industrial training, he / she will have to repeat the training at his / her own cost.

b)   The I spell of Industrial training shall commence 10 days after the completion of the last theory examination of 4th Semester.

c)   The Second spell of Industrial training shall commence within 10 days after the completion of I spell of Industrial training.

d)   Each Semester of Institutional study shall be a minimum of 90 working days. (With 6 working days in a week i.e. from Monday to Saturday, with 7 periods of 50 minutes, duration per day.

12.   **STUDENTS PERFORMANCE EVALUATION**
Successful candidates shall be awarded the Diploma under the following divisions of pass.

1.   First Class with Distinction shall be awarded to the candidates who secure an overall aggregate of 75% marks and above.
2.   First Class shall be awarded to candidates who secure overall aggregate of 60% marks and above and below 75% marks.
3.   Second Class shall be awarded to candidates who secure a pass with an overall aggregate of below 60%.

The Weightage of marks for various year/Semesters which are taken for computing overall aggregate shall be 25% of I year marks + 100% of 3rd and subsequent Semesters.

With respect to the intermediate vocational candidates who are admitted directly into diploma course at the 3rd semester (i.e., second year) level the aggregate of (100%) marks secured at the 3rd and subsequent semesters levels of study shall alone be taken into consideration for determining the over all percentage of marks secured by the candidates for award of class/division.

4.   Second Class shall be awarded to all students, who fail to complete the Diploma   in the regular three years and four subsequent examinations, from the first admission.

13.   **EXAMINATION FEE SCHEDULE:**

The examination fee should be as per the notification issued by State Board of Technical Education and Training from time to time.

14. STRUCTURE OF END EXAMINATION QUESTION PAPER

The question paper for theory examination is patterned in such a manner that the Weightage of periods/marks allotted for each of the topics for a particular subject be considered.
Examination paper is of 3/6/9 hour's duration.
a) Each theory paper consists of Section 'A' and Section 'B'. Section 'A' contains 10 short answer questions. All questions are to be answered and each carries 3 marks Max. Marks: 10 x 3 = 30.

Section B contains 8 essay type questions including Numerical questions, out of which 5 questions each carrying 10 marks are to be answered.
Max.Marks: 5 x 10 = 50.
Total Maximum Marks: 80

b) For Engineering Drawing Subject (107) consist of section 'A' and section 'B'. Section 'A' contains four (4) questions. All questions in section 'A' are to be answered and each carries 5 marks. Max. Marks: 4 x 5=20. Section 'B' contains six (6) questions. Out of which four (4) questions to be answered and each question carries 10 Marks. Max. Marks 4 x 10 = 40.

  Practical Examinations

For Workshop practice and Laboratory Examinations,
Each student has to pick up a question paper distributed by Lottery System.
Max. Marks for an experiment / exercise: 50%
Max. Marks for VIVA-VOCE: 10%
Total: 60%
In case of practical examinations with 50 marks, the marks will be worked out basing on the above ratio.
In case of any change in the pattern of question paper, the same shall be informed sufficiently in advance to the candidates.

15.   **ISSUE OF MEMORONDUM OF MARKS**
All candidates who appear for the end examination will be issued memorandum of marks without any payment of fee. However candidates who lose the original memorandum of marks have to pay the prescribed fee to the Secretary, State Board of Technical Education and Training, A.P. for each duplicate memo.

16.   **MAXIMUM PERIOD FOR COMPLETION OF DIPLOMA COURSES**
Maximum period for completion of the course is twice the duration of the course from the date of First admission (includes the period of detention and discontinuation of studies by student etc) failing which they will have to forfeit the claim for qualifying for the award of Diploma (They will not be permitted to appear for examinations after that date). This rule applies for all Diploma courses of 3 years and 3 ½ years of engineering and non-engineering courses.

17. **ELIGIBILITY FOR AWARD OF DIPLOMA**

A candidate is eligible for award of Diploma Certificate if he / she fulfils the following academic regulations.

i. He / She pursued a course of study for not less than 3 / 3 ½ academic years & not more than 6 / 7 academic years.

ii. He / she has completed all the subjects.
Students who fail to fulfill all the academic requirements for the award of the Diploma within 6 / 7 academic years from the year of admission shall forfeit their seat in the course & their seat shall stand cancelled.

18. **RECOUNTING, ISSUE OF XEROX COPY OF VALUED ANSWER SCRIPT & REVERIFICATION:**

(a) A candidate desirous of applying for Recounting/ issue of Xerox copy of valued answer scripts/ Reverification should submit the application to the Secretary, State Board of Technical Education and Training, A.P., Hyderabad – 500 063 within 15 days from the date of receipt of Tabulated Marks Statement by the Principal of concerned Polytechnic or the date specified.

Recounting shall be done for any <u>TWO</u> theory subjects per Year/Semester only, including drawing subjects. No request for recounting shall be entertained from any candidate who is reported to have resorted to Malpractice in that examination. The fee prescribed for Recounting should be paid by way of Demand Draft drawn on any Scheduled Bank payable at Hyderabad in favour of the Secretary, State Board of Technical Education and Training, A.P., Hyderabad. The verification of the totaling will be done by an Officer of the Board and will be intimated to the candidate by post only.

The following documents should be invariably be enclosed with the application failing which the application will not be considered.

(i) Marks secured as per Tabulated Marks Sheet certified by the Principal.
(ii) Demand draft towards the payment of fee
(iii) Self – addressed and stamped envelopes of 11" X 5" size.

The applications received after the prescribed date will not be accepted and any correspondence in this regard will not be entertained.

b) **FOR ISSUE OF XEROX COPIES OF VALUED ANSWER SCRIPTS**

1. A candidate desirous of applying for Xerox copy of valued answer script/ scripts should submit the application to the Secretary, State Board of Technical Education and Training, A.P., Hyderabad – 500 063 along with the required fee in the form of Demand Draft within <u>07 days</u> from the date of receipt of Tabulated Marks Statement by the Principal of concerned Polytechnic or the date specified in the covering letter which ever is earlier.

2. Xerox copies of valued answer scripts will be issued to all theory subjects including drawing subjects.

3. The following documents should invariably be enclosed with the application

(1) Marks secured as per Tabulated Marks Sheets certified by the Principal
(2) Self-addressed Stamped Envelope/Cloth-line cover of size 10'' x 14''.
(3) Fee in the form of Demand Draft

c) **FOR RE-VERIFICATION OF THE VALUED ANSWER SCRIPT**
1. A candidate desirous of applying for Re-verification of valued answer script should submit the application to the Secretary, State Board of Technical Education and Training, A.P., Hyderabad – 500 063 along with the required fee in the form of Demand Draft, within <u>15 days</u> from declaration of result.
2. Re-verification of valued answer script shall be done for all theory subjects including drawing subjects.
3. The following documents should invariably be enclosed with the application failing which the application will not be considered.
    (i)   Marks secured as per Tabulated Marks Sheets certified by the Principal.
    (ii) Fee in the form of Demand Draft.

19. **MAL PRACTICE CASES:**

    If any candidate resorts to any Mal Practice during examinations, he / she shall be booked and the Punishment shall be awarded as per rules and regulations framed by SBTET from time to time.

20. **DISCREPANCIES/ PLEAS:**

    Any Discrepancy /Pleas regarding results etc., shall be represented to the Board within one month from the date of issue of results. Thereafter, no such cases shall be entertained in any manner.

21. **ISSUE OF DUPLICATE DIPLOMA**

    If a candidate loses his/her original Diploma Certificate and desires a duplicate to be issued he/she should produce written evidence to this effect. He / she may obtain a duplicate from the Secretary, State Board of Technical Education and Training, A.P., on payment of prescribed fee and on production of an affidavit signed   before a First Class Magistrate (Judicial) and *non traceable certificate* from the Department of Police. In case of damage of original Diploma Certificate, he / she may obtain a duplicate certificate by surrendering the original damaged certificate on payment of prescribed fee to the State Board of Technical Education and Training.
    In case the candidate cannot collect the original Diploma within 1 year from the date of issue of the certificate, the candidate has to pay the penalty prescribed by the SBTET from time to time.

22. **PERMANENT IDENTIFICATION NUMBER (PIN)**

    A cumulative / academic record is to be maintained of the Marks secured in sessional work and end examination of each year for determining the eligibility for promotion etc., a Permanent Identification Number (PIN) will be allotted to each candidate so as to facilitate this work and avoid errors in tabulation of results.

23.   **ISSUE OF MIGRATION CERTIFICATE AND TRANSCRIPTS:**

   The Board on payment of prescribed fee will issue these certificates for the candidates who intend to prosecute Higher Studies in India or Abroad.

24.   **GENERAL**

   i.   The Board may change or amend the academic rules and regulations or syllabi at any time and the changes or amendments made shall be applicable to all the students, for whom it is intended, with effect from the dates notified by the competent authority.
   ii.   All legal matters pertaining to the State Board of Technical Education and Training are within the jurisdiction of Hyderabad.
   iii. In case of any ambiguity in the interpretation of the above rules, the decision of the Secretary, SBTET is final.
   iv.   The Board is actively contemplating introduction of Grading system instead of awarding marks, in C-09 scheme, from the academic year 2009-10. The details are being worked out. As soon as the Grading system is adopted, the rules pertaining to Scheme of Examination (Rule 7), Internal assessment scheme (Rule 8), Minimum pass marks (Rule 9), Rules of Promotion (Rule 11), Students performance evaluation (Rule 12), Issue of memorandum of marks (Rule 15), Rule 18 etc., shall also be modified.

DIPLOMA IN COMPUTER ENGINEERING
SCHEME OF INSTRUCTIONS AND EXAMINATION
CURRICULUM-2009
(FIRST YEAR)

Sub Code	Name of the Subject	Instruction Periods/Week		Total Periods Per Year	Scheme Of Examinations			
		Theory	Practicals		Duration (hrs)	Sessional Marks	End Exam Marks	Total Marks
THEORY SUBJECTS								
CM-101	English	2	-	60	3	20	80	100
CM-102	Engineering Mathematics - I	5	-	150	3	20	80	100
CM-103	Engineering Physics	4	-	120	3	20	80	100
CM-104	Engineering Chemistry and Environmental Studies	4	-	120	3	20	80	100
CM-105	Computer Fundamentals & Programming in C	5	-	150	3	20	80	100
PRACTICAL SUBJECTS								
CM-106	Computer Fundamentals & Programming in C lab	-	6	180	3	40	60	100
CM-107	Engineering Drawing	-	6	180	3	40	60	100
CM-108	Physics Laboratory	-	3	90	3	20	30	50
CM-109	Chemistry Laboratory	-			3	20	30	50
CM-110	Information Technology Lab	-	4	120	3	40	60	100
-	Group Task / Seminar	-	3	90	-	-	-	-
	Total	**20**	**22**	**1260**	**-**	**260**	**640**	**900**

DIPLOMA IN COMPUTER ENGINEERING
SCHEME OF INSTRUCTIONS AND EXAMINATION
CURRICULUM-2009
(III Semester)

Sub Code	Name of the Subject	Instruction Periods/Week		Total Periods Per Semester	Scheme Of Examinations			
		Theory	Practicals		Duration (hrs)	Sessional Marks	End Exam Marks	Total Marks
THEORY SUBJECTS								
CM-301	Engineering Mathematics –II	4	-	60	3	20	80	100
CM-302	Basic Electrical & Electronics Engg.	5	-	75	3	20	80	100
CM-303	Digital Electronics & Computer Architecture	6	-	90	3	20	80	100
CM-304	Data Structures through C	5	-	75	3	20	80	100
CM-305	RDBMS	4	-	60	3	20	80	100
PRACTICAL SUBJECTS								
CM-306	Data Structures Lab	-	4	60	3	40	60	100
CM-307	Digital Electronics Lab	-	3	45	3	40	60	100
CM-308	Electronic Workshop Practice	-	3	45	3	40	60	100
CM-309	RDBMS Lab		3	45	3	40	60	100
CM-310	English Communication lab level-1	-	3	45	3	20	30	50
	Seminars/Tutorials	-	2	30	-	-	-	-
	Total	24	18	630		280	670	950

DIPLOMA IN COMPUTER ENGINEERING
SCHEME OF INSTRUCTIONS AND EXAMINATION
CURRICULUM-2009
(IV Semester)

Sub Code	Name of the Subject	Instruction Periods/Week		Total Periods Per Semester	Scheme Of Examinations			
		Theory	Practicals		Duration (hrs)	Sessional Marks	End Exam Marks	Total Marks
THEORY SUBJECTS								
CM-401	Operating systems	4	-	60	3	20	80	100
CM-402	Computer Hardware & Networking	5	-	75	3	20	80	100
CM-403	OOP through C++	4	-	60	3	20	80	100
CM-404	Microprocessors	5	-	75	3	20	80	100
CM-405	.NET Programming	4	-	60	3	20	80	100
PRACTICAL SUBJECTS								
CM-406	Computer Hardware & Networking Lab	-	6	90	3	40	60	100
CM-407	C++ Lab	-	3	45	3	40	60	100
CM-408	Microprocessors Lab	-	3	45	3	40	60	100
CM-409	.NET Programming Lab	-	3	45	3	40	60	100
CM-410	English Communication Lab Level - II	-	3	45	3	20	30	50
	Group Task / Seminar	-	2	30	-	-	-	-
	Total	22	20	630	-	280	670	950

CM-501 INDUSTRIAL TRAINING
(Practical Training)

V SEMESTER

S.NO	Subject	Duration	Items	Max Marks	Remarks
1	Practical Training in the Industry	6 Months	1.First Assessment (at the end of 2nd month)	200	
			2. Second Assessment (at the end of 4th month)	200	
			3.Final Assessment (at the end of spell)	200	
			4. Log Book & Record	100	50 Marks Each
			5. Seminar	50	
TOTAL PER SEMESTER				750	

The industrial training shall carry 750 marks and pass marks is **50**%.A candidate failing to secure the minimum marks should complete it at his own expenses.

During Industrial training the candidate shall put in a minimum of 90%attendence.

DIPLOMA IN COMPUTER ENGINEERING
SCHEME OF INSTRUCTIONS AND EXAMINATION
CURRICULUM-2009
(VI Semester)

Sub Code	Name of the Subject	Instruction Periods/Week		Total Periods Per Semester	Scheme Of Examinations			
		Theory	Pract-icals		Duration (hrs)	Sessio-nal Marks	End Exam Marks	Total Marks
THEORY SUBJECTS								
CM-601	Industrial Management and Entrepreneurship	5	-	75	3	20	80	100
CM-602	System Administration	5	-	75	3	20	80	100
CM-603	Java Programming	5	-	75	3	20	80	100
CM-604	Web Designing	5	-	75	3	20	80	100
CM-605	**ELECTIVES** (A) Software Engineering (B) Mobile Computing (C) Advanced Database Systems	5	-	75	3	20	80	100
PRACTICAL SUBJECTS								
CM-606	System Administration lab	-	3	45	3	40	60	100
CM-607	Java lab	_	3	45	3	40	60	100
CM-608	Web Designing lab	-	3	45	3	40	60	100
CM-609	Computer Animation Lab	-	3	45	3	40	60	100
CM-610	English Communication skills Laboratory Level - III		2	30	3	20	30	5 0
	Group Task / Seminar	-	3	45	-	-	-	-
	Total	**25**	**17**	**630**	**-**	**280**	**670**	**950**

1ST YEAR

ENHANCING ENGLISH AND EMPLOYABILITY SKILLS

Subject Title   **:** **Enhancing English and Employability Skills**

Subject code   **: CM-101**

Periods / Week   **: 2**

Periods / Year   **: 60**

TIME SCHEDULE

S.No	Major Topics	No. of Periods	Weightage of marks	No. of Short questions	No. of Essay questions
1.	FUNCTIONAL ENGLISH	10	13	1	1
2.	SITUATIONAL GRAMMAR	19	31	7	1
3.	THE ART OF READING	18	33	1	3
4.	THE CRAFT OF WRITING	13	33	1	3
	TOTAL	**60**	**110**	**10**	**8**

INTRODUCTION:

Globalisation has made English language the need of the hour. Indian professionals are in great demand around the world. In this backdrop, English is felt as a bridge to make Polytechnic students employable soon after obtaining their Diploma Certificate.

In C-09 curriculum, the focus is on enhancing the students, communicative abilities as well as job-ready skills.

OBJECTIVES:

On completion of this course, the students should be able to

- Become communicatively competent
- Write and speak English confidently
- Read, listen and understand all kinds of communication
- Learn the modern methods of communication such as sending receiving emails
- Use English at social milieu or at work place

COURSE CONTENTS:

1. Functional English

- Need analysis
- Using a dictionary
- Introducing self / others
- Describing objects
- Vocabulary building
- Sounds and syllables
- Sentence structures

2. Situational Grammar

- Tense and Time
- Present, Past and Future Tenses
- Concord
- Yes/No, Wh-questions and Question Tags
- Voice
- Reported Speech
- Linkers
- Error Analysis

3. Art of Reading

- Note Taking
- Note Making and Summarising
- Preparing for Examination
- Enhancing Vocabulary through reading
- Reading for Pleasure
- Reading Strategies
- Drawing Inferences

4. Craft of Writing

- Mechanics of Writing
- Paragraph Writing
- Persuasive Writing
- Effective Correspondence
- E-mail
- Resume

ENGINEERING MATHEMATICS – I
(Common Subject)

Subject title	:	**Engineering Mathematics -I**	
Subject code	:	**CM- 102**	
Periods per week	:	**05**	
Total periods per Year	:	**150**	

TIME SCHEDULE

S.No.	Major Topics	No. of Periods	Weightage of Marks	Short Type	Essay Type
1	**Unit- I -** Bridging of fundamentals In mathematics	12	06	2	-
2	**Unit -II-Algebra** Matrices	15	10	-	1
3	Partial Fractions	05	03	1	-
4	**Unit-III-Trigonometry** Compound Angles	05	03	1	-
5.	Multiple and Sub-multiple angles	05	03	1	-
6.	Transformations	06	05	-	$\frac{1}{2}$
7	Inverse Trigonometric Functions	05	05	-	$\frac{1}{2}$
8	Trigonometric Equations	05	05	-	$\frac{1}{2}$
9.	Properties of Triangles and Solution of Triangles	08	05	-	$\frac{1}{2}$
10	Complex Numbers	06	03	1	-
11	**Unit- IV** **Co- ordinate Geometry** Straight Lines	02	03	1	-
12	Circles	05	03	1	-
13	Elements of Conics	01	00	-	
14	Parabola	05	05	-	$\frac{1}{2}$
15	Ellipse	05	05	-	$\frac{1}{2}$
16	Hyperbola	05	05	-	$\frac{1}{2}$
17	Three Dimensional Geometry	08	05	-	$\frac{1}{2}$
18	**Unit-V: Differential Calculus** Limits	05	03	1	-
19	Methods of Differentiation	20	13	1	1
20	**Unit-VI Applications of the Derivative** Geometrical Applications	06	05	-	$\frac{1}{2}$
21	Physical Applications	06	05	-	$\frac{1}{2}$
22	Maxima and Minima	06	05	-	$\frac{1}{2}$
23	Errors and Approximations	04	05	-	$\frac{1}{2}$
	Total	**150**	**110**	**10**	**8**

Objectives:

Unit-1. Bridging of fundamentals in Mathematics:

1.1   Explain the bracket operations such as [illegible] etc.

1.2   Explain the ratios and properties such as componendo, dividendo, Componendo and dividendo rules such as

[illegible]

Also explain the variation concept (direct and inverse) such as

[illegible] Solve simple problems.

1.3.   Explain Literal Values and Literal Coefficients. Solve simple problems such as

[illegible]

1.4 .   Explain the procedure of Handling Vulgar fractions such as

$$\frac{\dfrac{x}{2x-1} - \dfrac{2x-4}{x-2}}{1 - \dfrac{x-3}{2x-4}}, \quad \frac{\dfrac{4}{1} + \dfrac{2}{2}}{\dfrac{1}{x} \cdot \dfrac{3}{y}}$$

1.4.1   Explain the formulae for basic algebraic identities in the form of forward and backward applications like

$$(\text{[illegible]})$$

And also [illegible]

1.6   Explain the functional notation $y = f(x)$, $z = f(x,y)$ and $u = f(x,y,z)$ with simple illustrative examples and their evaluation. Also explain the definition of a function classically as $f : A \rightarrow B$, Domain ,Range , interval as subset of set of real numbers.

1.7   Explain the polynomials of Second, Third and fourth degree definitions, rational functions with arithmetic operations on them, Homogeneous functions, symmetric expressions and Σ notations with suitable examples in each case.

1.8   Explain surds and rationalizing factors with suitable simple examples.

1.9   Explain logarithms with basic properties.

1.10   Explain solving a quadratic equation by factorization and formula methods and solving fourth and third degree equations using remainder theorem with simple constructed examples.

1.11   State the definitions of [illegible].

1.12   State Binomial expansions of the type ([illegible])

1.13   Explain the exponential constant e, exponential function, exponential series, Logarithmic Series, and also define Hyperbolic and inverse Hyperbolic functions with useful identities.

1.14   Define the basic Trigonometric ratios, their properties and allied angles formulae.

1.15   Explain two dimensional co-ordinate system, distance and ratio formulae centroid and the meaning of the graph of a function with suitable examples.

Unit-II. **Algebra**

Matrices

2.1   Definition of a matrix, various types of matrices with examples, define the order of a matrix- define square matrix and 3rd order square matrix with examples.

2.2   Define sum, scalar multiplication and product of matrices, algebra of matrices (associative, distributive, commutative properties) with examples and counter examples.

2.3   Define the transpose of a matrix, symmetry and non -symmetry of matrices, resolving a square matrix in to a sum of a symmetric and non- symmetric matrices-Examples in all cases.

2.4   Define minor, cofactor of an element of a 3x3 square matrix as determinant of 2x2 square matrix with examples. Define and determine the adjoint of a square matrix give examples.

2.5   Define determinant of a 3x3 matrix- Laplacian expansion with examples. Define singular and non singular matrices.

2.6   Define the multiplicative inverse of a 3x3 matrix, relation between the Adjoint and inverse leading to the formula $A^{-1} = adj\ A/\ det\ A$.(proof not necessary) with examples.

2.7   System of 3 linear equations in 3 unknowns, matrix representation, solution by matrix inversion method and Cramer's rule-examples

2.8   Elementary row and column operations on a 3x3 matrix-examples, Gauss-Jordan method to solve a system of 3 linear equations in 3 unknowns with examples.

2.9   Row operations for evaluating the determinant of a 3x3 matrix with simple illustrative examples. Also state properties of determinants with illustrative examples.

3. Partial Fractions

3.1   Define rational, proper and improper fractions of functions.

3.2   Explain the Procedure of resolving rational fractions of the type mentioned below into partial fractions.

i) $\dfrac{f(x)}{(x+a)(x+b)(x+c)}$

ii) $\dfrac{f(x)}{(x+a)^2(x+b)(x+c)}$

iii) $\dfrac{f(x)}{(x^2+a)(x+b)}$

iv) $\dfrac{f(x)}{(x+a\ )(x^2+b)^2}$

Unit-III Trigonometry

4.0 Compound Angles

4.1   Define compound angles, State the formulas of *Sin(A±B), Cos(A±B), tan(A±B) and cot(A±B),* simple examples, derive the values of *sin15⁰ cos15⁰, sin75⁰, cos75⁰, tan 15⁰, tan75⁰* etc.

4.2   Derive identities like *sin(A+B) sin(A-B) = sin² A –sin² B* etc.

Solve simple problems on compound angles.

5.0 Multiple and Sub multiple Angles

5.1   Derive the formulae of multiple angles *2A, 3A* etc and sub multiple angle *A/2* in terms of angle *A* of trigonometric functions.
5.2   Derive useful allied formulas like $sinA=\sqrt{(1-cos2A)/2}$ etc
5.3   Provide examples on the above formulae

6.0 Transformations

6.1   Derive the formulae on transforming sum or difference of two trigonometric ratios in to a product and vice versa- examples on these formulae.
6.2   Apply these formulae to sum or difference or product of three or more terms and solve problems.

7.0 Inverse Trigonometric Functions

7.1   Understand the concept of the inverse of a trigonometric function by selecting an appropriate domain and range. Define inverses of six trigonometric functions along with their domains and ranges.
7.2   To derive relations between inverse trigonometric functions so that given $A= sin^{-1}x$, to Express angle *A* in terms of other inverse trigonometric functions- with examples.
7.3   State various properties of inverse trigonometric functions and identities like $sin^{-1}x+cos^{-1}x$ = $\pi/2$ etc Derive formulae like $tan^{-1}x + tan^{-1}y = tan^{-1}((x+y)/(1-xy))etc.,$ and solve simple problems.

8.0 Trigonometric Equations

8.1   Explain what is meant by the solution of trigonometric equations. To find the general solutions of *sin x=k, cos x =k* and *tan x=k* with appropriate examples.
8.2   To solve models of the type $a\ sin^2 x + b\ sin x +c=0$, $a\ cos x + b\ sin x=c$ *etc.*, and problems using simple transformations.

9.0 Properties and Solutions of Triangles

9.1   To state sine rule, cosine rule, tangent rule and projection rule.
9.2   Give the formulas for *sin A/2, cos A/2, tan A/2* and *cot A/2* in terms of semi-perimeter and sides *a,b,c* and solve problems.
9.3   Give various formulae for the area of a triangle. Solve problems on the above formulae.
9.4   Explain what is meant by solving a triangle; solve a triangle given (i) three sides, (ii) two sides and an included angles, (iii) two sides and an opposite angle-case of two solutions and (iv) one side and two angles.

10. 0 Complex numbers:

10.1   Give the definition of a complex number, its modulus and Conjugate of a complex number and their properties.
10.2   Define the arithmetic operations on Complex numbers with examples.
10.3   Define amplitude of a complex number and give the modulus-amplitude (polar) form ,Exponential (Euler)form of a complex number - illustrative examples on all the above.

10.4 State DeMoivre's Theorem (proof not necessary) and its applications to complex numbers eg. Finding the roots, powers, simplifications of a complex number with illustrative examples.

Unit-IV Coordinate Geometry

11.0 Locus, Translation of axes and Straight lines

11.1 Explain the concepts of locus of a point, shifting of origin(translation of axes) with illustrative examples.
11.2 Provide equations of a straight line in various forms, explain the slope, angle between two lines, point of intersection of lines, perpendicular distance from a point to a line, distance between two parallel lines, provide examples.

12.0 Circles
12.1 Define a circle, provide circle equation given (i) center and radius, (ii) given two ends of a diameter with examples.
12.2 State the general equation of a circle and explain the procedure to find the centre, radius from it with examples.
12.3 Problems on finding the equation of circle passing through three given points.
12.4 Define the tangent and normal at a point on the circle and problems relating to finding their equations (Derivation of general Equations not necessary.). Define the pole and polar of a circle and find the pole of a line and polar of a point w.r.t. a circle.(Derivation of general Equations not necessary)-Simple examples only.

13.0 Elements of Conics

13.1. Define a conic, explain the terms focus, directrix, eccentricity, axes and latus rectum of a conic.
13.2 Find the Equation of a Conic, given its focus, eccentricity and directrix.

14.0 Parabola
14.1 Derive the standard equation of a parabola with vertex at origin and one of the coordinate axes as its axis (four forms) and also the standard forms with translation of axes (shifting of origin, vertex at *(h,k)* and axis parallel to one of the coordinate axes).
14.2 Given the equation of parabola, explain how to reduce it to standard form and find its vertex, focus, directrix, axis, latus rectum etc.-illustrative examples.
14.3 To find the equation of a parabola given any two of focus, vertex and directrix-examples
14.4 To find the equation of a parabola passing through 3 given points.
14.5 Applications of parabola to practical problems.

15.0 Ellipse

15.1 Derive the standard equation of an ellipse , Types of ellipse with (i) center at origin, coordinate axes as axes and (ii) center at *(h,k)* and axes parallel to coordinate axes.
15.2. Find the foci,centere, vertices, axes, directrices, latera recta for an ellipse in standard form and Their length and prove that sum of focal distances from any point on the ellipse is equal to length of major axis-solve problems.
15.3 To find the equation of an ellipse (i) given focus, eccentricity and equation of directrix and (ii) in standard form and passing through two given points.
15.4 Applications of ellipse to practical problems-simple cases.

16.0 Hyperbola

16.1   Derive the standard equation of hyperbola, explain different forms, define rectangular and conjugate hyperbola.
16.2   Mention the properties of hyperbola with examples.
16.3   To find the equation of a hyperbola given its (i) focus, directrix and eccentricity, (ii) asymptotes.
16.4   To find the centre, foci, vertices, axes, directrices, latera recta and the length of latus rectum given equation of a hyperbola in standard form.

17.0 Three Dimensional Geometry

17.1   Explain the three dimensional coordinate system.
17.2   Explain the distance between two points with problems.
17.3   Explain the ratio formula with examples.
17.4   State the formulae to find the centroid of a triangle and the tetrahedron with simple examples.
17.5   Define the direction cosines and direction ratios of a line, angle between two lines with Illustrative examples.
17.6   State the general equation of a plane, its intercept form, plane passing through a given point and perpendicular to a line whose direction ratios are given-angle between two planes -simple illustrative examples and problems

Unit-V Differential Calculus

18.0 Limit and Continuity

18.1   Explain the concept of limit and meaning of $\lim_{x \to a} f(x) = l$ and State the properties of limits .

18.2   Mention the Standard limits with illustrative examples applying the above and

also evaluate the limits of the type $\lim \frac{}{}$, $\lim \frac{}{}$.

18.3   Explain the concept of continuity of a function at a point and in an interval. Some examples whether a given function is continuous or not can be mentioned.

19.0 Methods of differentiation

19.1   State the concept of derivative of a function $y = f(x)$ –definition, first principle as $\lim_{h \to 0} \frac{f(x+h)-f(x)}{h}$ and also use the appropriate standard notations to denote the derivative of a function. Mention the significance of derivative in scientific and engineering applications.
19.2   Find the derivatives of elementary functions like x^n, $a^x, e^x, Logx$,*Cosx, Sinx, Tanx, Secx,Cosecx* and *Cotx* using the first principles and also find the derivatives of simple functions from the first principle .

19.3   State the rules of differentiation of *Sum, Difference Scalar multiplication, Product and Quotient* of functions with illustrative and simple examples .

19.4   Explain the method of differentiation of a function of a function (Chain rule) with illustrative examples such as

      i) $2t^2 + 3/\sqrt{t}$

      ii) $x^2 \sin^2 x$

      iii) $x/\sqrt{x^2+1}$

      iv) $\log [\sin (\cos x)]$.

19.5   Find the derivatives of Inverse Trigonometric functions and examples using the Trigonometric   transformations.

19.6   Explain the method of differentiation of a function with respect to another function and also Differentiation of Parametric functions with illustrative examples.

19.7   Explain the procedure of differentiating of hyperbolic and implicit functions with examples.

19.8. Explain the need of taking logarithms for differentiating some functions with illustrative examples like $[f(x)]^{g(x)}$.

19.9. Explain the concept of successive differentiation –derivatives of second   and higher order-examples.

19.10 Explain the concept of functions of several variables, partial derivatives and difference between the ordinary and partial derivatives with simple illustrative examples.

19.11 Explain the definition of Homogenous function of degree n and Statement of Euler's Theorem
for Homogeneous functions with applications to simple problems.

Unit-VI Applications of the Derivative

20.0 Geometrical Applications of Derivatives

20.1   State the geometrical meaning of the derivative as the slope of the tangent to the curve $y=f(x)$ at any point on the curve.

20.2. To find the tangent and normal to the curve $y=f(x)$ at any point on the curve using the slope found using the derivative.

20.3. Define the lengths of tangent, normal, sub-tangent and sub normal at any point on the curve
$y=f(x)$ – Provide formulae and examples.

20.4   Explain the concept of angle between two curves and procedure for finding the angle between two given curves with illustrative examples.

21.0 Physical Applications of Derivatives

21.1   Explain the derivative as a rate of change in distance-time relations to find the velocity and acceleration of a moving particle with examples.

21.2   Explain the derivative as a rate measurer in the problems where the quantities like volumes areas vary with respect time- illustrative examples.

22.0 Derivatives to find extreme values

22.1   Define the concept of increasing and decreasing functions. Explain the conditions to find points where the given function is increasing or decreasing with illustrative examples.

22.2   Explain the procedure to find the extreme values (maxima or minima) of a function of single variable-simple problems yielding maxima and minima.

22.3   Solve problems on maxima and minima in applications like finding areas, volumes etc.

23.0. Derivatives to find Errors and Approximations

23.1   Use the definition of derivative to find the approximate values of a function of single variable and to find the errors in dependent or independent variables as the case may be-appropriate applications.

23.2   Provide formulae for relative error and percentage error in evaluating the dependent variable given the corresponding errors in independent variable. Provide simple examples with functions of one variable.

COURSE CONTENT

UNIT – I

1.   **Bridging of fundamentals in mathematics**:
Bracket operations-examples-Ratio and Proportion, Variation-examples-Literal values-examples- Literal coefficients-examples-Identities-examples with forward and backward applications-Polynomials-examples-Rational functions-examples- Homogenous expressions-examples-Symmetrical expressions-examples-Functional   notation-Exponential, logarithmic, hyperbolic functions and their series—Elementary combinatorial concepts -examples -Binomial expansion- examples -Vulgar fractions – examples- Elementary theory of equations-examples-Surds- examples-Logarithms-examples-Trigonometric ratios-examples-Basic concepts of coordinate geometry-examples.

UNIT-II
2.Matrices:

Matrices of 3rd order: Definition of a matrix-types of matrices-examples-algebra of matrices-Transpose of a matrix-Symmetric, skew symmetric matrices-Minor, cofactor of an element-Determinant of a square matrix-Laplace's expansion-singular and non singular matrices-Adjoint and multiplicative inverse of a square matrix- examples-System of linear equations in 3 variables-Solutions by Cramers's rule,   Matrix inversion method-examples-Elementary row and column operations on matrices and determinants-Gauss-Jordan method to solve a system of equations. **.**

3. Partial Fractions : Procedure for resolving rational functions of the types mentioned below in to into partial fractions.

i) $\dfrac{f(x)}{(x+a)(x+b)(x+c)}$

ii) $\dfrac{f(x)}{(x+a)^2(x+b)(x+c)}$

iii) $\dfrac{f(x)}{(x^2+a)(x+b)}$

iv) $\dfrac{f(x)}{(x+a)(x^2+b)^2}$

UNIT –III

Trigonometry

4   Compound angles-Formulas of *Sin(A±B), cos(A±B), tan(A±B),cot(A±B),* and related identities with problems.

5   Multiple and sub multiple angles-trigonometric ratios of multiple angles *2A,3A* and submultiple angle *A/2* - problems.

6   Transformations of products into sums or differences and vice versa-simple problems

7   Inverse trigonometric functions-definition, domains and ranges-basic properties- problems.

8   Trigonometric equations- concept of a solution, principal value and general solution of trigonometric equations : *sin x =k , cos x= k, tan x =k.* – Solutions of simple quadratic equations, equations involving multiple angles and usage of transformations- problems.

9   Properties and solutions of triangles- relation between sides and angles of a triangle- sine rule, cosine rule, tangent rule and projection rule-area of a triangle- solving a triangle-problems.

10   Complex Numbers : Definition of a complex number, Modulus and conjugate of a complex number, Arithmetic operations on complex numbers, Modulus- Amplitue (polar) form , Exponential form(Euler) form of a complex number- Problems.DeMoivre's Theorem and its applications in complex numbers- Simple problems.

UNIT-IV

Coordinate geometry

11   Concepts of locus, change of axes- various forms of straight lines – angle between lines, perpendicular distance from a point, distance between parallel lines-examples.

12   Circle-definition-Circle equation given center and radius- circle equation with given diameter-general equation-finding center, radius-tangent, normal, pole and polar of a circle.

13   Definition of a conic- focus, directrix and eccentricity-finding the equation of a conic given focus, directrix and eccentricity

14   Parabola- Standard forms- finding focus, vertex, directrix etc. of a parabola-simple applications-

15   Ellipse- Standard forms- finding foci, vertices, directrices etc. of an ellipse-properties of ellipse- simple application problems.

16   Hyperbola- Standard forms- finding foci, vertices, directrices etc. of a hyperbola-properties of hyperbola- simple problems

17   Three dimensional geometry: Coordinate system-distance between two points-ratio formula-direction cosines and ratios of a line- angle between two lines-centroid of a triangle and tetrahedron-simple equation of a plane-general form-angle between planes.

UNIT-V

Differential Calculus

18   Concept of Limit- Definition- Properties of Limits and Standard Limits - Simple

Problems-Continuity of a function at a point- Simple Examples only.

19 Concept of Derivative- Definition(first Principle)- different notations-Derivatives of elementary functions- problems. Derivatives of Sum, Product,Quotient,Scalar multiplication of functions- problems. Chain rule, derivatives of Inverse Trigonometric functions, Derivative of a function with respect to another function, Derivative of parametric equations, Derivative of hyperbolic, Implicit functions Functions, Logarthmic Differentiation –problems in each case.Successive differentiation- examples- .Partial differentiation, Euler's Theorem-simple problems.

UNIT-VI

Applications of the Derivative:

20 Geometrical meaning of the derivative,equations of Tangentand normal to acurve at any point. The lengths of Tangent, Normal, Subtangent and Subnormal to the curve at any point .Angle between the curves- problems.

21 Physical applications of the derivative –velocity, acceleration, derivative as a rate Measure –Problems.

22 Applications of the derivative to find the extreme values – Increasing and decreasing functions, finding the maxima and minima of simple functions -problems leading to applications of maxima and minima.

23 Applications of derivative in finding errors and approximations of functions and simple problems.

REFERENCE:

(1) **Text book of Engineering Mathematics –I** by G.Srinagesh, and others –FALCON publishers
(2) **Text book of Engineering Mathematics –I** by Dr.J.Sairam and others –   UNI-TECH SERIES.
(3) **A Text book of intermediate Mathematics –I & II** by Telugu Academy.
(4) **Differential Calculus by ManicavachagomPillai**
(5) **Elementary Algebra by Hall & Knight.**
(6) **Text book of Engineering Mathematics –I** by Radiant publishers.
(7) **Trigonometry** By S.L Loney

ENGINEERING PHYSICS

Subject Title : **Engineering Physics**
Subject Code : **CM -103**
Periods per week : **04**
Total periods per year : **120**

TIME SCHEDULE

S.No	Major Topics	No. of Periods	Weightage of Marks	Short Answer Type	Essay Type
1.	Units and Dimensions	08	03	1	-
2.	Elements of Vectors	10	13	1	1
3.	Kinematics	13	13	1	1
4.	Friction	08	03	1	-
5.	Work, Power and Energy	10	10	-	1
6.	Simple Harmonic Motion	11	13	1	1
7.	Heat & Thermodynamics	13	13	1	1
8.	Sound	11	13	1	1
9.	Properties of matter	14	13	1	1
10	Electricity & magnetism	14	13	1	1
11.	Modern Physics	08	03	1	
	Total:	120	110	10	8

OBJECTIVES

1.0   UNITS AND DIMENSIONS

1.1   Introduction to units
1.2   Define Physical quantity, fundamental physical quantities and derived physical quantities
1.3   Define unit
1.4   Define fundamental units and derived units
1.5   State SI units with symbols
1.6   State Multiples and submultiples in SI system
1.7   Rules of writing S.I. units
1.8   State advantages of SI units
1.9   Define Dimensions and Dimensional formulae
1.10   Derive dimensional formulae of physical quantities
1.11   List dimensional constants and dimensionless quantities
1.12   State the principle of Homogeneity of Dimensions

1.13   Explain the applications of Dimensional Analysis with examples
1.14   State the limitations of dimensional analysis
1.15   Solve problems

2.0   ELEMENTS OF VECTORS

2.1   Introduction to Vectors
2.2   Define Scalar and Vector quantities
2.3   Give examples for scalar and vector quantities
2.4   Represent vectors graphically
2.5   Types of Vectors (Proper Vector, Null Vector, Unit Vector, Equal Vectors, Negative Vector, Like Vectors, Co-Initial Vectors, Co-planar Vectors and Position Vector).
2.6   Explain addition and subtraction of vectors
2.7   Represent a vector in space using unit vectors (I, j, k)
2.8   Resolution of vectors
2.9   Resultant of the vectors by component method
2.10   State parallelogram law of vectors and illustrations
2.11   Derive formula for resultant (Magnitude and direction)
2.12   State and Explain triangle law of vectors
2.13   State and Explain polygon law of vectors
2.14   Define Dot product of two vectors with examples (Work done, Gravitational P.E)
2.15   Mention the properties of Dot product
2.16   Define Cross products of two vectors with example (Torque ,Linear velocity)
2.17   Mention the properties of Cross product.
2.18   Solve problems

3.0   KINEMATICS

3.1   Recapitulation of equations of motion in a straight line
3.2   Define acceleration due to gravity
3.3   Derive expressions for Maximum Height, time of ascent, time of descent, time of flight and velocity on reaching the point of projection
3.4   Derivation for height of a tower when a body projected vertically upwards from the top
3.5   Define projectile motion with examples
3.6   Explain Horizontal projection
3.7   Derivation for the path of a horizontal projectile
3.8   Explain oblique projection
3.9   Derivation for the path of a oblique projectile
3.10   Derive formulae for maximum height, time of flight and Horizontal Range of a projectile, maximum range in oblique projection
3.11   Derive formula for magnitude and direction of resultant velocity in oblique projection
3.12   Solve problems

4.0   FRICTION

4.1   Introduction to friction
4.2   Examples of friction in daily life
4.3   Definition of friction
4.4   Types of friction

4.5	Concept of Normal reaction
4.6	State laws of static friction
4.7	State laws of kinetic friction
4.8	Define coefficients of friction
4.9	Angle of friction w.r.t. rough horizontal surface
4.10	Derivations for displacement and time taken to come to rest over a rough horizontal surface and work done by frictional force
4.11	Define Angle of repose
4.12	Explain Motion of a body on a rough inclined planes
4.13	Derive expressions for acceleration of a body on a rough inclined plane (UP &DOWN)
4.14	Derive expressions for acceleration of a body on a smooth inclined plane (UP &DOWN)
4.15	List the Advantages and Disadvantages of friction
4.16	Mention the methods of minimizing friction
4.17	Solve problems

5.0.   WORK, POWER AND ENERGY

5.1	Define work
5.2	State SI units, dimensional formula for work
5.3	Explain the concept of power
5.4	Define power
5.5	State SI units, dimensional formula for power
5.6	Define energy
5.7	State SI units, dimensional formula for energy
5.8	Define potential energy
5.9	Derive the expression for Potential energy, with examples
5.10	Define kinetic energy
5.11	Derive the expression for kinetic energy, with examples
5.12	Work Energy theorem
5.13	Relation between Kinetic energy and momentum
5.14	State the law of conservation of energy and verify in the case of freely falling body
5.15	Law of conservation of energy in the case of simple pendulum-theory only
5.16	Define conventional and non conventional energy sources with examples
5.17	Solve problems

6.0   SIMPLE HARMONIC MOTION

6.1	Define S. H. M
6.2	State the conditions of S. H. M
6.3	Give examples of S. H. M
6.4	Derive the equation for S H M as projection of particle executing uniform circular motion
6.5	Derive expression for displacement
6.6	Derive expression for velocity
6.7	Derive expression for acceleration
6.8	Derive expression for period and frequency of S H M
6.9	Define phase of S H M
6.10	Derive expression for period of simple pendulum

6.11   Experiment for determination of acceleration due to gravity using simple
        pendulum.
6.12   Seconds pendulum
6.13   Solve problems

7.0   HEAT AND THERMODYNAMICS

7.1   Introduction to expansion of gases
7.2   Explain Boyle' s law
7.3   Experimental verification of Boyle's law
7.4   Explain absolute scale of temperature
7.5   State Charles laws
7.6   Derive ideal gas equation
7.7   Define gas constant and Universal gas constant
7.8   Explain why universal gas constant is same for all gases
7.9   State SI unit and value of universal gas constant
7.10   State the gas equation in terms of density
7.11   Differences between r and R
7.12   Concept of internal energy
7.13   Definition of external work
7.14   Calculate external work done by a gas
7.15   Explain Isothermal process and Adiabatic process
7.16   State laws of thermodynamics
7.17   Define specific heats & molar specific heats of a gas
7.18   Derive relation C_p-C_v = R
7.19   Solve problems

8.0   SOUND

8.1   Introduction to sound
8.2   Distinguish between musical sound and noise
8.3   Explain noise pollution and state SI unit for noise
8.4   Explain causes of noise pollution
8.5   Explain effects of noise pollution
8.6   Explain methods of minimizing noise pollution
8.7   Explain the phenomenon of beats
8.8   Explain the applications of beats
8.9   Explain Doppler effect
8.10   Derive formula for apparent frequency – (i) Source in Motion and observer at rest (ii) Observer
        in motion and source at rest
8.11   Applications of Doppler effect
8.12   Explain reverberation and reverberation time
8.13   Write Sabine's formula
8.14   Explain echoes
8.15   Solve problems

9.0   PROPERTIES OF MATTER

9.1   Introduction to Elasticity
9.2   Definitions of Stress and strain, their units and dimensional formulae
9.3   Statement of Hooke's law
9.4   Types of Stress
9.5   Types of strain
9.6   Types of moduli of elasticity
9.7   Definition of Surface Tension and examples
9.8   Explanation to Surface Tension with reference to molecular theory
9.9   Definitions of angle of contact and capillarity
9.10   State formula for Surface Tension based on capillarity
9.11   Experimental determination of surface tension by capillarity method
9.12   Concept of Viscosity, definition and examples
9.13   Newton's formula for Viscous force and definition of coefficient of Viscosity.
9.14   Effect of temperature on viscosity of liquids and gases
9.15   State Poiseulle's equation for coefficient of viscosity
9.16   Experimental determination of coefficient of viscosity
9.17   Solve problems

10.0   ELECTRICITY AND MAGNETISM

10.1   Introduction to Electricity
10.2   Ohm's law and explanation
10.3   Definitions of specific resistance, conductance and their units
10.4   Statements of Kichoff's laws and explanation
10.5   Wheatstone's bridge
10.6   Meter bridge
10.7   Experimental determination of specific resistance using Meter Bridge
10.8   Introduction to magnetism
10.9   Coulomb's inverse square law of magnetism
10.10 Defition of magnetic field and magnetic lines of force
10.11 Magnetic induction field strength-units and dimensions
10.12 Moment of couple on a bar magnet placed in a uniform magnetic field
10.13 Derivation for Magnetic induction field strength at a point on the axial line
10.14 Derivation for Magnetic induction field strength at a point on the equatorial line
10.15 Solve problems

11.0   MODERN PHYSICS

11.1   Explain Photo-electric effect
11.2   Einstein 's photoelectric equation
11.3   State laws of photoelectric effect
11.4   Working of photoelectric cell
11.5   Applications of photoelectric effect
11.6   Recapitulation of refraction of light and its laws
11.7   Critical angle
11.8   Total Internal Reflection
11.9   Explain the principle and working of Optical Fiber

11.10 Mention types of optical fibbers
11.11 List the applications of Optical Fiber
11.12 Definition of super conductor and superconductivity\
11.13 Examples of superconducting materials
11.14 Properties of Superconductors
11.15 Applications of superconductors

COURSE CONTENTS

1. UNITS AND DIMENSIONS:

Introduction – Physical quantity – Fundamental and Derived quantities – Fundamental and Derived units- SI units –Multiples and Sub multiples – Rules for writing S.I. units-Advantages of SI units – Dimensions and Dimensional formulae- Dimensional constants and Dimensionless quantities-Principle of Homogeneity- Advantages and limitations of Dimensional analysis- - Problems.

2. ELEMENTS OF VECTORS:

Scalars and Vectors –Types of vectors- Addition of vectors- Representation of vectors- Resolution of vectors - Parallelogram, Triangle and Polygon laws of vectors– Dot and Cross products of vectors-Problems

3. KINEMATICS:

Introduction- Concept of acceleration due to gravity- Equations of motion for a freely falling body and for a body thrown up vertically- Projectiles- Horizontal and Oblique projections- Expressions for maximum height, time of flight, range and resultant velocity- problems

4. FRICTION:

Introduction to friction- Causes- Types of friction- Laws of friction- Angle of repose-Angle of friction- - Motion of a body over a horizontal surface- smooth inclined plane- rough inclined plane- Advantages and disadvantages of friction- Methods of reducing friction – Problems

5. WORK, POWER AND ENERGY:

Work, Power and Energy- Definitions and explanation- potential energy-kinetic energy-Derivations of Potential and Kinetic energies-K.E and Momentum relation - Work-Energy theorem- Conservation law of energy- Conventional and Non conventional energy sources-Problems

6. SIMPLE HARMONIC MOTION:

Introduction- Conditions of SHM- Definition- Examples- Expressions for displacement, velocity, acceleration, Time period, frequency and phase in SHM- Time period of a simple pendulum-Experimental determination of acceleration due to gravity-seconds pendulum- Problems

7. **HEAT AND THERMODYNAMICS:**

Expansion of Gases- Boyle's law-Experiment of Boyle's law- Absolute scale of temperature- Charles laws- Ideal gas equation- Universal gas constant-Differences between r and R- Internal energy- External work done by a gas- Isothermal and adiabatic processes- Laws of thermodynamics- Two specific heats of a gas- Relation between Cp and Cv- Problems

8. **SOUND:**

Sound- Nature of sound- Musical sound and noise- Noise pollution – Causes & effects- Methods of reducing noise pollution- Beats- Doppler effect- Echo- Reverberation-Reverberation time-Sabine 's formula- Problems

9. **PROPERTIES OF MATTER:**

Introduction to Elasticity- Stress and Strain- Hooke's law- Types of Stress and Strain- Types of moduli of elasticity- Introduction to Surface Tension- Definition and examples- Molecular theory- Angle of contact and capillarity- Experimental determination of surface tension by capillary method- Effects of temperature and impurities- Introduction to Viscosity- Definition and examples- Newton's formula for viscosity- Experimental determination of viscosity by Poiseuille's method- Effect of temperature- Problems

10. **ELECTRICITY & MAGNETISM:**

Ohm's law and explanation- Specific resistance- Kirchoff's laws- Wheatstone's bridge- Meter bridge- Coulomb's inverse square law - magnetic field- magnetic lines of force-Magnetic induction field strength- magnetic induction field strength at a point on the axial line - magnetic induction field strength at a point on the equatorial l line –problems.

11. **MODERN PHYSICS;**

Photoelectric effect –Einstein's photoelectric equation-laws of photoelectric effect - photoelectric cell –Applications of photo electric effect-critical angle – Total internal reflection- fiber optics- -principle and working of an optical fiber-types of optical fibers - Applications of optical fibers- concepts of superconductivity - applications

Reference Books
1.   Intermediate Physics Volume 1 and 2   Telugu academy.
2.   Intermediate Physics Volume 1 and 2   Deepthi Publications
3.   Unified Physics Volume 1,2,3 and 4   Dr. S.L. Gupta and Sanjeev Gupta.
4.   Text book of Physics Volume 1 and 2   Resnik and Halliday
5.   Text book of applied physics   Dhanpath Roy
6.   Fiber optics   D.A. Hill
7.   Engineering Physics   M. Raghavendra

ENGG. CHEMISTRY & ENVIRONMENTAL STUDIES
(Common Subject)

Subject Title   :   **Engg. Chemistry & Environmental studies**

Subject Code   :   **CM-104**
Periods per week   :   **04**
Total periods per year   :   **120**

TIME SCHEDULE

S.No	Major Topic	No. of Periods	Weightage of Marks	No. of Short Questions	No. of Essay Questions
I.	**ENGINEERING CHEMISTRY**				
1.	FUNDAMENTALS OF CHEMISTRY	18	16	2	1
2.	SOLUTIONS	10	08	1	1/2
3.	ACIDS AND BASES	10	08	1	1/2
4.	PRINCIPLES OF METALLURGY	10	10	-	1
5.	ELECTROCHEMISTRY	12	13	1	1
6.	CORROSION	09	10	-	1
7.	WATER TECHNOLOGY	13	13	1	1
8.	POLYMERS	12	13	1	1
9.	FUELS	08	03	1	-
II.	**ENVIRONMENTAL STUDIES**	18	16	2	1
	Total	120	110	10	08

OBJECTIVES: **After the completion of the study of these units the student should be able to comprehend the following**

I. ENGINEERINGCHEMISTRY

1.0 Fundamentals of Chemistry
     Atomic Structure:
1.1   Fundamental particles of an atom
1.2   Understand the concept of atomic number and mass number
1.3   Postulates of BOHR'S atomic theory and its limitations
1.4   Briefly explain Quantum numbers
1.5   Define and explain Aufbau principle, Hund's rule and Pauli's exclusion principle.
1.6   Define Orbital
1.7   Draw the shapes of s, p and d Orbitals
1.8   Distinguish between Orbit and Orbital

1.9   Understand electronic configuration of elements (up to element atomic number 30)

        Periodic Table
1.10   State modern periodic law
1.11   Salient features of modern periodic Table (Periods & Groups)

        Chemical bonding
1.12   Introduction
1.13   Postulates of Electronic theory of valency
1.14   Types of Chemical bonds
1.15   Define ionic bond and explain ionic bond formation in NaCl and MgO
1.16   Properties of Ionic compounds
1.17   Define covalent bond and explain Covalent bond in H_2, O_2 and N_2 using Lewis
        dot method.
1.18   Properties of Covalent compounds
1.19   Explain Metallic bond

        Oxidation-Reduction:
1.20   Definition of Oxidation and Reduction
1.21   Definition of Oxidation Number and its calculations
1.22   Difference between Oxidation Number and Valency

2.0   Solutions
2.1   Define Solution, solute and solvent
2.2   Types of solutions
2.3   Define mole and understand Mole concept
2.4   Define and explain Molarity
2.5   Define and explain Normality
2.6   Define and explain equivalent weight using acids, bases and salts
2.7   Numerical problems on Mole, Molarity and Normality

3.0   Acids and bases
3.1   Explain Arrhenius theory of Acids and Bases and its limitations
3.1   Explain Bronsted – Lowry theory of acids bases and its limitations
3.2   Explain Lewis theory of acids and bases and its limitations
3.3   Explain Ionic product of water
3.4   Define pH and explain Sorenson scale
3.5   Numerical problems on pH (Strong Acids and Bases)
3.6   Define buffer solution with examples
3.7   Applications of buffer solutions

4. 0   Principles of Metallurgy
4.1   Characteristics of Metals
4.2   Distinction between Metals and Non Metals
4.3   Definitions of Metallurgy, Mineral, Ore, Gangue, Flux and Slag
4.4   Methods of concentration of ore – Hand picking, Levigation, Froth Floatation
4.5   Extraction of crude metal – Roasting, Calcination, Smelting
4.6   Purification of Metals – Electrolytic Refining

4.7   Define an Alloy
4.8   Composition and uses of following Alloys: Brass, German silver, Nichrome

5.0   Electrochemistry
5.1   Define conductor Insulator, Electrolyte and Non – electrolyte
5.2   Explain Arrhenius theory of electrolytic dissociation
5.3   Define and explain electrolysis by taking example fused NaCl
5.4   Explain Faraday's laws of electrolysis
5.5   Define chemical equivalent and electrochemical equivalent
5.6   Numerical problems based on Faraday's laws of electrolysis
5.7   Define Galvanic cell and explain its construction
5.8   Distinguish between electrolytic cell and galvanic cell
5.9   Understand the standard electrode potentials
5.10 Understand electrochemical series and its significance
5.11 Understand emf of a cell
5.12 Numerical problems on emf of cell

6.1   Corrosion
6.1   Define corrosion
6.2   Factors influencing the rate of corrosion
6.3   Understand the concept of electrochemical theory of corrosion
6.4   Describe the formation of a) composition cells b) stress cells c) concentration cells
6.5   Understand rusting of iron
6.6   Explain the mechanism of rusting of iron
6.7   Explain the methods of prevention of corrosion a) protective coatings b) cathodic
       protection (Sacrificial anode process and Impressed – voltage process)

7. 0   Water Technology
7.1   Sources of water
7.2   Define soft and hard water
7.3   Understand temporary and permanent hardness and the compounds causing
       hardness (with Formulae)
7.4   State the disadvantages of using hard water in industries
7.5   Define Degree of hardness, units of hardness (ppm)
7.6   Explain the methods of softening of hard water: a) permutit process b) ion-
       Exchange process
7.7   Know the essential qualities of drinking water
7.8   Describe the method of municipal treatment of water for drinking purpose.
7.9   Explain Osmosis and Reverse Osmosis. Advantages of Reverse Osmosis

8.0   Polymers
8.1   Basic concepts of polymerisation
8.2   Describe the methods of polymerisation a) addition polymerisation of Ethylene
       b) condensation polymerisation of phenol and formaldehyde
       (Only flow chart i.e. without chemical equations)
8.3   Define the term plastic
8.4   Classification of plastics with examples
8.5   Distinguish between thermo and thermosetting plastics

8.6   Characteristics of plastics
8.7   Advantages of plastics over traditional materials
8.8   Disadvantages of using plastics.
8.9   Methods of preparation and uses of the following plastics: 1. Polythene 2. PVC
       3.Teflon 4. Polystyrene 5. Urea formaldehyde
8.10   Know the term natural rubber
8.11   State the structural formula of Natural rubber
8.12   Explain the processing of Natural rubber from Latex
8.13   Characteristics of natural rubber
8.14   Explain the process of Vulcanization
8.15   Characteristics of Vulcanized rubber
8.16   State the term Elastomer
8.17   Describe the preparation and uses of the following synthetic rubbers
       a) Buna-s b) Neoprene rubber

9.0   Fuels
9.1   Define the term fuel
9.2   Classification of fuels based on physical state – solid , liquid and gaseous fuels,
       and based on occurrence- primary and secondary fuels
9.3   Understand characteristics of good fuel
9.4   Extraction and Refining of Petroleum
9.5   State the composition and uses of gaseous fuels: a) water gas b) producer
       gas c) natural gas d) coal gas e) Bio gas f) acetylene

II. ENVIRONMENTAL STUDIES

1.1   Define terms environment and environmental studies. explain the scope and
       importance of environmental studies
1.2   Understand the terms – lithosphere, hydrosphere, atmosphere, biosphere, biotic
       component, energy component, pollutant, pollution, contaminant receptor - sink,
       particulates, dissolved oxygen, Threshold limit value, BOD, COD
1.3   Define   air pollution
1.4   Classification of air pollutants- based on origin and state of matter
1.5   State and explain the causes of air pollution
1.6   Explain the use and over exploitation of forest resources and deforestation
1.7   Explain the effects of air pollution on human beings, plants and animals
1.8   Explain the green house effect- ozone layer depletion and acid rain
1.9   Understand the methods of control of air pollution
1.10   Define water pollution
1.11   Explain the causes of water pollution
1.12   Explain the effects of water pollution on living and non living things
1.13   Understand the methods of control of water pollution
1.14   knows growing energy needs renewable and non-renewable energy sources.
       Understand the use of alternate energy sources
1.15   Define an Ecosystem
1.16   Define producers, consumers and decomposers with examples.
1.17   Define biodiversity and threats to biodiversity

COURSE CONTENTS

I ENGINEERING CHEMISTRY

1. **Fundamentals of Chemistry**
    Atomic Structure: Introduction - Fundamental particles – Bohr's theory –
    Quantum numbers - Aufbau principle - Hand's rule - Pauli's exclusion Principle-
    Orbitals, shapes of s, p and d orbitals - Electronic configurations of elements

    Periodic Table: Modern Periodic Law, salient features of Modern Periodic Table

    Chemical Bonding: Introduction – types of chemical bonds – Ionic and covalent
    bond with examples – Properties of Ionic and Covalent compounds – Metallic
    bond

    Oxidation-Reduction: Concepts of Oxidation-Reduction, Oxidation Number
    -calculations, differences between Oxidation Number and Valency

2. **Solutions**
    Introduction-concentration methods – Mole concept, Molarity, Normality,

    Equivalent weights, Numerical problems on Mole, Molarity and Normality

3. **Acids and Bases**
    Introduction – theories of acids and bases and limitations – Arrhenius theory-
    Bronsted –Lowry theory – Lewis acid base theory – Ionic product of water - P^H and
    related numerical problems – buffer solutions –Applications.

4. **Principles of Metallurgy**
    Characteristics of Metals and distinctions between Metals and Non Metals,
    Metallurgy,
    ore, Gangue, Flux, Slag - Concentration of Ore –Hand picking, Levigation, Froth
    floatation – Extraction of crude Metal – Roasting, Calcination, Smelting – Alloys –
    Composition and uses of Brass, German silver and Nichrome

5. **Electrochemistry**
    Conductors, insulators, electrolytes - Arrhenius theory of electrolytic dissociation –
    electrolysis – Faraday's laws of electrolysis- numerical problems – Galvanic cell –
    standard electrode potential – electro chemical series –emf and numerical problems on
    emf of a cell

6. **Water technology**
    Introduction –soft and hard water – causes of hardness – types of hardness –
    disadvantages of hard water – degree of hardness (ppm) – softening methods – permutit
    process – ion exchange process – numerical problems related to degree of hardness –
    drinking water – municipal treatment of water for drinking purpose – Osmosis, Reverse
    Osmosis - advantages of Reverse osmosis

7. **Corrosion**

Introduction - factors influencing corrosion - electrochemical theory of corrosion

- composition, stress and concentration cells– rusting of iron and its mechanism – prevention of corrosion by coating methods, cathodic protection

8. **Polymers**

Introduction – polymerization – types of polymerization – addition, condensation with examples – plastics – types of plastics – advantages of plastics over traditional materials – Disadvantages of using plastics – preparation and uses of the following plastics: 1. Polytehene 2. PVC 3. Teflon 4. Polystyrene 5. Urea formaldehyde – Rubber – Natural rubber – processing from latex –Vulcanization – Elastomers – Buna-s, Neoprene rubber and their uses.

Fuels

Definition and classification of fuels – characteristics of good fuel - Extraction and Refining of petroleum - composition and uses of gaseous fuels.

II. ENVIRONMENTAL STUDIES

Introduction – environment –scope and importance of environmental studies important terms – air pollution - causes-Effects – forest resources : uses and over exploitation, deforestation, acid rain, green house effect –ozone depletion – control of air pollution – Water pollution – causes – effects – control measures, renewable and non renewable energy sources – Concept of ecosystem, producers, consumers and decomposers – Biodiversity, definition and threats to Biodiversity.

Reference books

1. Intermediate Chemistry Vol 1& 2   Telugu Academy

2. Intermediate Chemistry Vol 1& 2   Vikram Publishers

3. Intermediate Chemistry Vol 1 & 2   Vignan Publishers & Deepthi publishers

4. Engineering Chemistry   Jain and Jain

5. Engineering Chemistry   O.P.Agarwal, Hi-Tech.

6. Engineering Chemistry   M.S.N.Raju, etc, Hi-Tech.

7. Applied Chemistry   V.Subrahmanyam

8. Engineering Chemistry   Sharma

9. Environmental chemistry   A.K. De

10.Engg. Chemistry & Env. Studies   Dr. G. Venkatanarayana

COMPUTER FUNDAMENTALS AND PROGRMMING IN C

Subject : **Computer Fundamentals and Programming in C**
Subject Code : **CM - 105**
Periods per Week : **5**
Periods per Year : **150**

TIME SCHEDULE

S.No	Major Topics	Periods	Weightage of marks	Short Questions	Essay Questions
1	Fundamentals of Computer	25	16	2	1
2	Features of DOS& Windows	25	13	1	1
3	Features of Internet	20	13	1	1
4	Concept of Programming Methodology	05	3	1	
5	Programming Constructs	20	23	1	2
6	Arrays and Strings	20	18	1	1½
7	Modular Programming	15	10		1
8	Pointers	10	8	1	½
9	Structures, Unions	5	3	1	
10	Pre processor Directives and Files	5	3	1	
	Total	**150**	**110**	**10**	**08**

Objectives:
On completion of the study of the subject the student should be able to comprehend the following .

1.0. Understand the fundamentals of Computer
    1.1   Draw the block diagram of a Computer.
    1.2   Explain the interaction between the CPU, Memory, Input / Output devices.
    1.3   Describe the function of CPU and major functional parts of CPU
    1.4   Describe the function of memory.
    1.5   Describe the function of input/output devices.
    1.6   State the relevance of speed and word length for CPU Performance.
    1.7   Recognize the current family of CPUs used in Computers.
    1.8   State the use of storage devices used in a Computer.
    1.9   List types of memory used in a Computer.
    1.10 State the importance of cache memory.
    1.11 Generations of computers.
    1.12 Classification of computers - based on size, processor.
    1.13 Know importance of binary number system for use in Digital Computers.
    1.14 List the various number systems used in digital Computer.
    1.15 Convert decimal number into binary number.
    1.16 Convert binary number into decimal number.
    1.17 Convert binary number into hexadecimal number.

1.18 Convert hexadecimal number into binary number.
1.19 Understand the ASCII coding scheme.
1.20 Understand the EBCDIC coding scheme.

2.0   DOS & Windows Operating Systems
2.1   Describe the need for an operating system.
2.2   List the various operating systems used presently.
2.3   DOS Prompt, Types of commands, Internal & External Commands.
2.4   Directories and files, wild cards, autoexec.bat, config.sys,
2.5   List the features of Windows desktop.
2.6   List the components of a Window.
2.7   State the function of each component of a Window.
2.8   Explain the Method of starting a program using start button
2.9   Understand maximize, minimize, restore down and close buttons.
2.10   State the meaning of a file.
2.11   State the meaning of a folder.
2.12   Explain the Method of viewing the contents of hard disk drive using
         Explore option.
2.13   Explain the Method of finding a file using search option.
2.14   Explain formatting a floppy disk using explore option
2.15   Describe installing new software using control panel
2.16   Describe uninstalling software using control panel
2.17   Explain installing a new hardware using control panel
2.18   Explain uninstalling a hardware using control panel
2.19   Narrate finding out drive space using system tool option of
         accessories group
2.20   Explain the procedure of disk defragmentation using System tools
2.21   Narrate installing a printer using control panel
2.22   Explain the procedure for changing resolution, colour, appearance,
         and screensaver options of the display
2.23   Narrate the process of changing the system date and time

3.0   Fundamentals of Internet
3.1   Explain meaning of a computer network.
3.2   Describe the concept of a local area network.
3.3   Explain the concept of the wide area network
3.4   Compare Internet & Intranet
3.5   Describe the relevance of an internet service provider.
3.6   Explain the role of a modem in accessing the Internet.
3.7   Explain the installation procedure of a MODEM using control panel
3.8   Explain the purpose of web browser software.
3.9   Explain the structure of a Universal Resource Locator (URL).
3.10 Describe the purpose of World Wide Web, FTP, telnet and E-mail
3.11 Explain the process of sending and receiving E-mail
3.12 Understand different Connection methods
3.13 Describe address format and IP address
3.14 Describe DNS
3.15 Understand the role of search engines with examples.
3.16 Differences between search engines and directory.

3.17 Know about Social Network sites.
3.18 Understand Internet Security.

4.0 Understand Programming Methodology.

4.1 State the different steps involved in problem solving.

4.2 State the steps involved in algorithm development.
4.3 Differentiate algorithm and flowchart.
4.4 Develop algorithms for simple problems.
4.5 Draw the symbols used in flowcharts.
4.6 Draw flowcharts for simple problems.

5.0 Programming Constructs in C
5.1 Understand Sequential structure.
5.1 .1 Know about C.
5.1.2   Know the character set.
5.1.3   Keywords, Identifiers, Constants and Variables.
5.1.4   Classify data types and explain them with examples.
5.1.5   Know different arithmetic operators.
5.1.6   Define an expression and show how to evaluate it.
5.1.7   Mention about assignment statement.
5.1.8   Explain an increment and decrement operators.
5.1.9   Know shortcut assignment operators.
5.1.10 Know about nested assignments.
5.1.11 Explain I/P and O/P functions printf and scanf.
5.1.12 Know various type conversion techniques and discuss them.
5.1.13 Know about Preprocessor Directives and Macros
5.2 Understand selective structure.
5.2.1   Know various relational operators with their precedence.
5.2.2   List various logical operators and their Precedence.
5.2.3   Know how to evaluate a logical expression.
5.2.5   Explain various conditional statements.
5.2.5   Stress on conditional operator
5.2.6   Know bit wise operators
5.2.7   Stress on multiway conditional statements.
5.2.8   Know the switch statement.
5.3 Understand repetitive structure.
5.3.1   Explain Various Loop Statements.
5.3.2   Define nesting and implement it.
5.3.3   Differentiate break and continue statements.
5.3.4   Mention about null statement and comma operator.

6.0 Understand Arrays and Strings
6.1 Know about arrays
6.1.1   Define Array
6.1.2   Declaration and Initialization of One Dimensional Array.
6.1.3   Accessing the elements in the Array.

6.1.4   Reordering an array in ascending order.
6.1.5   Declaration and Initialization of Two Dimensional Arrays.
6.1.6   Programs on Matrices.

6.2 Know about Strings
6.2.1   Define String
6.2.2   Declaration and Initialization of a String.
6.2.3   Explain about various String functions.
6.2.4   Programs on Strings.

7.0 Understand modular programming
7.1   Define a function.
7.2   Stress on return statement.
7.3   Types of functions
7.4   Write programs using function call techniques.
7.5   Stress on function Proto types in programming.
7.6   Differentiate Local and External Variables.
7.7   Know how to pass array elements as arguments.
7.8   Know about Call by value and Call by reference.
7.9   Know about Storage Classes.
7.10   Define Recursion and Explain with examples.

8.0 Understand basics of Pointers.
8.1   Differentiate address and de-referencing operators.
8.2   Declaration and Initialization of Pointers.
8.3   Stress on Pointer Arithmetic.
8.4   Know precedence of address and de-referencing operators.
8.5   Discuss on pointer comparison and pointer conversion.
8.6   Know Relationship between Arrays and Pointers.
8.7   Accessing array elements using pointers
8.8   Pointers as Function Arguments
8.9   Discuss pointer Arrays with examples.
8.10   Know various dynamic memory management functions and
          illustrate with examples to use these functions.

9.0 Understand basics of Structures and Unions.
9.1   Define a structure.
9.2   Know about structure variable.
9.3   Know structure initialization.
9.4   Know how to access structure members.
9.5   Illustrate concept of structure assignment.
9.6   Explain how to find size of a structure.
9.7   Discuss nested structure concept.
9.8   Summarize concept of pointer to structure.
9.9   Structure as function arguments and structures as function values.
9.10   Arrays of structures, structures containing arrays, arrays of
          structures containing arrays.
9.11   Illustrate concept of structures containing pointers.

9.12   Explain Self referential structures with examples.

9.13   Define the Union and illustrate use of a union.

10.0 Understand File processing techniques and preprocessor directives

10.1 Know various file processing facilities in C and explain them in detail.

10.2 Write program to create a data file and random access to data.

10.3 Know preprocessor directives

COURSE CONTENTS

1. Organization of a Digital Computer

Block diagram of a digital computer, functional parameters of CPU, Clock speed and word length, Functional blocks of a CPU: ALU and Control unit, types of memory RAM, ROM, purpose of cache memory, Binary Number system, Decimal, Binary, hexadecimal and octal codes, Conversion from one number system to another number system, ASCII, BCD and EBCDIC code for characters, concept of a byte and word.

2. Advanced Windows Features

Formatting disks, install/uninstall new software/hardware, using system tools-drive and disk defragmentation; control panel features-installing printer, changing display, keyboard, mouse, date/time settings.

3. Fundamentals of Internet

Basics of a computer network, local area network and wide area network, Basics of E-mail. Exposure to Web browsers. Structure of Universal Resource Locator. Type of web sites .com, .gov etc., functions of an Internet service provider, role of a modem in accessing the Internet, Connection Methods, IP address, DNS and search engines

4. Concept of Programming methodology

Steps involved in solving a problem- Concept of Structured program – Flow chart-Algorithm.

5. Programming constructs

Sequential structure: Various types of data – Arithmetic operators - Expressions-Assignment statement - Assignment operators - printf, scanf – Type conversion techniques – Macro define –

Selective Structure: Relational operators - Logical operators - Logical expressions - Conditional operator – bit wise operators -Conditional statements - Multi way condition statement - Switch statement

Repetitive structures: Iterative loops – Nesting - break, continue statements –null statement – comma operator.

6. Arrays and Strings

Array - Array declaration - Access to array elements - Initialization of Array elements and - Arrays as arguments, String – Declaration of Strings – various String Functions.

7. Modular programming:
Function: return statement – function prototypes - local and external variables – Automatic and static variables, Recursion.

8. Pointers:
Pointer - Address and de-referencing operators - Declaration, Assignment & Initialization of a pointer - Pointer Arithmetic - Pointer comparison, conversion parameter passing by reference – Relation between arrays and pointer – String manipulation using pointer - Pointer arrays - Pointer to function- Dynamic memory management functions.

9. Structures, Unions

Structures initialization, access concept - Size of a structure - Pointers to structure – Relationship between structure and function - Structures function arguments and function values - Relation between structure and arrays –Structure containing pointers –self Referential structure – Unions

10 File processing and Pre processor directives
File processing facility - Pre processor directives

REFERENCE BOOKS

1. Information Technology   - Curtin.

2. Computer Science Theory & Application   - E. Balaguruswamy, B. Sushila

3. Programming in ANSI C   -   Balagurusamy - TMH

4. Programming in C   - K.R. Venugopal & H.S. Vimala

5. Programming With 'C'   - Ghosh (PHI)

Computer Fundamentals and Programming in C Lab

Subject Title   : **Computer Fundamentals and Programming in C Lab**
Subject Code   : **CM - 106**
Periods per Week   : **6**
Periods per Year   : **180**

1.0   DOS

     1.1   Practice on Internal & External commands.
     1.2   Create and use   Batch Files.
     1.3   Know the usage of Edlin Editor.

2.0   Windows

     1.1   Start the windows Operating system.
     1.2   Start a program using the program option of the start menu.
     1.3   Minimize, maximize, and close a window.
     1.4   Resize and move a window.
     1.5   Open multiple windows and switch between windows.
     1.6   Locate a file using the Search option of the Start menu.
     1.7   Operate the calculator in the accessories.
     1.8   Open notepad, paint and WordPad   programs.
     1.9   Practice locating Files stored on the hard disk drive.
     1.10   Know the various options in "My Computer "icon.

3.0   Install and Uninstall the software and hardware.

     2.1   Install new software using control panel.
     2.2   Uninstall software using control panel.
     2.3   Install a new hardware using control panel.
     2.4   Uninstall a hardware using control panel.
     2.5   Install a modem using control panel.
     2.6   Install a printer using control panel.

4.0   Usage of system tools.

     3.1   Find out drive space
     3.2   Carryout Disk Defragmentation
     3.3   Change resolution, color, appearance, screen server options of Display
     3.4   Change the system date and time.

5.0   C Programming

5.1   Acquaintance with editing, compiling and executing programs
5.2   Exercise on printf and scanf functions
5.3   Exercises on Selective Structures
5.4   Exercises on Repetitive Structures
5.5   Exercises on arrays and Strings.
5.6   Exercises on functions.
5.6   Exercises on recursion
5.7   Exercises on global variables.
5.9   Exercises on C preprocessor Directives.
5.10   Exercises on Pointers
5.10   Exercise on structures unions and files.

ENGINEERING DRAWING

Subject Title : **Engineering Drawing**
Subject Code : **CM– 107**
Periods/Week : **06**
Periods Per Year : **180**

TIME SCHEDULE

S. No	Major Topics	Periods	Weightage of marks	Short Answer Questions	Essay type Questions
1	Importance of Engineering Drawing	03	-	-	-
2	Drawing instruments				
3	Free hand lettering & Numbering	06	5	1	-
4	Dimensioning Practice	12	5	1	-
5	Geometrical construction	24	10		1
6	Projection of points, Lines, Planes and solids	30	10		1
7	Orthographic Projection	30	15	1	1
8	Sectional views	18	10		1
9	Auxiliary views	06	5	1	
10	Pictorial drawing	30	10		1
11	Development of surfaces	21	10		1
	Total	**180**	**80**	**04**	**06**

OBJECTIVES

On completion of the study of this subject the student should be able to

1.0 Understand the Importance of Engineering Drawing
1.1 State the importance of drawing as an engineering communication medium.
1.2 State the necessity of I.S. Code of practice for Engineering Drawing.
1.3 Appreciate the linkages between Engineering drawing and other subjects of study in Diploma course.

2.0 Use Engineering Drawing Instruments
2.1 Select the correct instruments and draw lines of different orientation.
2.2 Select the correct instruments and draw small and large Circles.
2.3 Select the correct instruments for measuring distances on the drawing.
2.4 Use correct grade of pencil for different types of lines, thickness and given function.
2.5 Select and use appropriate scales for a given application.

2.6   Identify different drawing sheet sizes as per I.S. and Standard Layouts.
2.7   Prepare Title block as per I.S. Specifications.
2.8   Identify the steps to be taken to keep the drawing clean and tidy.

3.0   Write Free Hand Lettering and Numbers
3.1 Write titles using sloping lettering and numerals as per B.I.S (Bureau of Indian standards)
3.2 Write titles using vertical lettering and numerals as per B.I.S.
3.3 Select suitable sizes of lettering for different layouts and applications.
3.4 Make the use of lettering stencils.

4.0   Understand Dimensioning Practice
4.1 State the need of dimensioning the drawing according to accepted standard.
4.2 Define "Dimensioning".
4.3 Identify notations of Dimensioning used in dimensioned drawing.
4.4 Identify the system of placement of dimensions in the given dimensioned drawing.
4.5 Dimension a given drawing using standard notations and desired system of dimensioning.
4.6 Dimension standard features applying necessary rules.
4.7 Arrange dimensions in a desired method given in a drawing.
4.8 Identify the departures if any made in the given dimensioned drawing with reference to SP-46-1988, and dimension the same correctly.

5.0   Apply Principles Of Geometric Constructions
5.1 Divide a given line into desired number of equal parts internally.
5.2 Draw tangent lines and arcs.
5.3 Construct a Hexagon from the given data.
5.4 Define ellipse, parabola hyperbola, involute, cycloid, and helix.
5.5 Construct ellipse by concentric circles method and using a paper trammel.
5.6 Construct parabola, rectangular hyperbola involute, cycloid and helix from the given data.
5.7 State the applications of the above constructions in Engineering practice.

6.0   Apply Principles of Projection of points, lines & planes
6.1 Explain the projection of a point with respect to reference planes (HP & VP)
6.2 Explain the projections of straight lines with respect to two reference planes.
6.3 Explain the projections of perpendicular planes.

7.0   Apply principles of Orthographic Projection
7.1 Explain the principles of Orthographic projection with simple sketches.
7.2 Prepare an Engineering Drawing of a given simple Engineering part in first angle projection.
7.3 Draw the orthographic view of an object, given its pictorial drawing.

7.4 Sketch the minimum number of views needed to represent a given object fully.

7.5 identify the object, from a number of orthographic views given.

7.6 Supply the missing view when given two other views of an object.

8.0 Appreciate the need of Sectional Views

8.1 Explain the need to draw sectional views.

8.2 Select the section plane for a given component to reveal maximum information.

8.3 Draw sectional view for the component in 8.2.

8.4 Apply conventional practices and identify the parts, which should not be shown in section while drawing sectional views.

8.5 Make conventional representation of Engineering materials as per latest B.I.S. Code.

8.6 Apply principles of hatching.

8.7 Draw simple sections (full, half, revolved and removed part) for a range of simple Engineering objects.

8.8 Draw the component from a given set of sectional views.

9.0 Understand the need for Auxiliary Views

9.1 State the need of Auxiliary views for a given Engineering Drawing.

9.2 Sketch the auxiliary views of a given Engineering component to indicate the true shape and size of component.

9.3 Draw the auxiliary views of a given Engineering drawing.

10.0 Prepare Pictorial Drawings

10.1 State the need for commonly used type of pictorial drawings.

10.2 Given the objects, draw their orthographic views.

10.3 State the need of isometric scale and isometric projection.

10.4 Prepare Isometric projections for the given orthographic drawings.

10.5 Prepare oblique drawing cavalier, cabinet of simple Engineering objects from the given data.

10.6 Identify the correct pictorial views from a set of Orthographic drawings.

11.0 Prepare Development Drawings

11.1 State the need for preparing development drawing.

11.2 Prepare development of simple Engineering objects using parallel line and radial line method.

11.3 Prepare development of Surface of Engineering components like trays, funnel, 90^0 elbow & rectangular duct.

COURSE CONTENTS

NOTE
1. **I.S. / B.S Latest Specification should invariably be followed in all the topics.**
2. **A-3 Size Drawing Sheets are to be used for all Drawing Practice Exercises.**

Understand the importance of Engineering Drawing

Explanation of the scope and objectives of the subject of Engineering Drawing its importance as a graphic communication
Need for preparing drawing as per standards – SP-46 –1988
Mention of I.S.O and B.I.S-Role of drawing in -engineering education
Link between Engineering drawing and other subjects of study.

Engineering drawing Instruments

Classifications: Basic Tools, tools for drawing straight lines,
tools for curved lines,
tools for measuring distances and special tools like mini drafter & drafting machine
Mentioning of names under each classification and their brief description -Scales:
Recommended scales reduced & enlarged
Lines: Types of lines, selection of line thickness - Selection of Pencils
Sheet Sizes: A0, A1, A2, A3, A4, A5, Layout of drawing sheets in respect of A0, A1, A3 sizes,
Sizes of the Title block and its contents - Care and maintenance of Drawing Sheet,
To draw "Lay out of sheet " – and as per SP-46-1988 to a suitable scale.
Simple Exercises on the use of Drawing Instruments.
Importance of Title Block.
Drawing Plate 1: (Consisting of about two exercises)
To draw geometric shapes (standard) using drawing instruments -To draw layout of sheet and title block.

Free hand lettering & numbering

Importance of lettering – Types of lettering
Guide Lines for Lettering
Recommended sizes of letters & numbers –
Advantages of single stroke or simple style of lettering –
Use of lettering stencils
Drawing plate 2: (Consisting of about 5 to 6 exercises)
To print the table of Types of lines as per latest ISI Standards.
To print the table of "Recommended sizes of letters and numerals" – as per Standards.
Selection of suitable size of letters and numbers and draw the given titles, phrases using both vertical and sloping styles.

Dimensioning practice

Purpose of engineering Drawing, need of I.S.I code in dimensioning –Shape description of an Engineering object -Definition of Dimensioning size description -Location of features, surface finish, fully dimensioned Drawing -Notations or tools of dimensioning, dimension line extension line, leader line, arrows, symbols, number and notes, rules to be observed in the use of above tools -Placing dimensions: Aligned system and unidirectional system (SP-46-1988)-Arrangement of dimensions Chain, parallel, combined progressive, and dimensioning by co-ordinate methods-The rules for dimensioning standard, features "Circles (holes) arcs, angles, tapers, chamfers, and dimension of narrow spaces.

Drawing Plate 3: (Consisting of above 12 to 15 exercises)
> Dimensioning a given drawing using the above tools, rules and systems of dimensioning.
> Dimensioning practice in various methods of dimensioning stated above.
> Dimensioning, given common features listed.
> Exercise in identifying the departures made in a given dimensioned drawing from I.S.I. Code of practice.

Geometric Construction

Division of a line: to divide a straight line into given number of equal parts internally examples in Engineering application.

Construction of tangent lines: to draw tangent lines touching circles internally and externally.

Construction of tangent arcs
i) To draw tangent arc of given radius to touch two lines inclined at given angle (acute, right and obtuse angles).
ii)Tangent arc of given radius touching a circle or an arc and a given line.
iii)Tangent arcs of radius R, touching two given circles internally and externally.

Hexagon: Inscribing a Hexagon in a circle of given dia and circumscribing a given circle, using
i) Set squares.
ii) Compass – given a side to construct a Hexagon using set squares or compass.

Conical Curves: Explanation of Ellipse, Parabola, Hyperbola, as sections of a double cone and a loci of a moving point, Eccentricity of above curves – Their Engg. Application viz. Bolts and Nuts, Projectiles, reflectors P.V. Diagram of a Hyperbolic process, Construction of Ellipse using.
i)   Concentric circles method.
ii) Paper trammel, method.
iii) Construction of parabola by rectangular method.
iv) Construction of Rectangular Hyperbola when given the position of a point on the curve.

General Curves: Involute, Cycloid and Helix, explanations as locus of a moving point, their Engineering application, viz, Gear tooth profile, screw threads, springs etc. Their construction:

> **Drawing Plate: 4 (Consisting of about 12 to 15 exercises)**
> Exercises mentioned above at the rate of at least one problem on each "construction".

Projection of points, lines and planes.

       Projecting a point on two planes of projection
       Projecting a point on three planes of projection
       Projection of straight line.
             (a) Parallel to one or both the planes.
             (b) Contained by one or both the planes.
             (c) Perpendicular to one of the planes.
             (d) inclined to one plane and parallel to other planes.
       Projection of perpendicular planes
             (a) Plane perpendicular to both HP and VP
             (b) Plane perpendicular to HP and parallel to VP and Vice versa.
             (c) Plane perpendicular to HP and inclined to VP and vice versa.
       Projection of Regular solids in simple positions

7.0   Orthographic Projections

Meaning of Orthographic Projection -Using a viewing Box and a model – Number of views obtained on the six faces of the box, - Neat sketches of only 3 views for describing object -Concept of front view, top views, and sides view sketching these views for a number of Engg. Objects -Explanation of "First angle projection". – Positioning of three views in First angle projection - Projection of points as a means of locating the corners of the surfaces of an object – Use of miter line in drawing a third view when other two views are given -Method of representing hidden lines -Selection of minimum number of views to describe an object fully.

Drawing Plate 5: (Consisting of about 10 to 12 Number of exercises)
Given an engineering object(s) to sketch the three views.
Given the pictorial view of simple objects to sketch the three views in
First and third angle projections.
Given the object (pictorial Drawing) and 3 views identifying the surface
on the views with reference to the object.
Given two views and a simple object – Draw the mission of third view.

       Drawing Plate 6: (Consisting of about 6 to 8 exercises)

Given the engineering objects (Pictorial views) Drawing the three views
in First angle projection.
Identifying the object, when given a number of objects and the
orthographic views (matching exercises).

8.0   Sectional views

Need for drawing sectional views – what is a sectional view - Location of cutting plane – Purpose of cutting plane line – Selection of cutting plane to give maximum information (vertical and offset planes) -Meaning of Full, half revolved and removed, local or partial sections - Hatching – adjacent components (two or more) large areas, a part in different parallel planes-Conventional practices to represent sections of ribs, shafts, bolts, nuts, screws, rivets, spokes, webs, keys, cotters, thin sections etc., as per B.I.S. specifications – Conventional representation of materials as per B.I.S. Standards.

Drawing Plate 7: (Consists of about 8 to 10 exercises)
Preparing conventional representation of a materials as per latest/ B.I.S.
Code.
Given the object (pictorial or orthographic view), and cutting plane line to
draw sectional view.
Given the object to select the correct cutting plane line and then to draw
the sectional view.

To identify the object when given number of objects and number of
sectional views (Matching exercise.)

9.0   Auxiliary views

Need for drawing auxiliary views -Explanation of the basic principles of
drawing an auxiliary views explanation of reference plane and auxiliary plane -
Partial auxiliary view.
Drawing plate No.8: (Consisting of about 8 exercises)
Given a set of objects, state whether an auxiliary view is needed – if
required sketch the same.
Given the object and its auxiliary view (partial or full, to sketch the
auxiliary plane on the pictorial view)

10.0   Pictorial Drawings

Brief description of different types of pictorial drawing viz., Isometric, oblique,

and perspective – Use of these - Isometric drawings: Iso axis, angle between

them, meaning of visual distortion in dimensions - Need for an isometric scale, difference
between Isometric scale, and ordinary scale difference between Isometric drawing (or
view, and Isometric Projection) and orthographic drawing - Isometric and non-Isometric
lines -Isometric drawing of

common features like rectangles, circular - shapes, non-isometric lines, Use of

box and offset construction -Oblique drawings: Their use -Cavalier and cabinet drawings –
Oblique drawing of common features like rectangular, circular and inclined, surfaces -
Selection of the face of the object to be included in the front view.

Draw plate 9: (Consists of about 10 to 12 exercises)

Given the Orthographic views to draw isometric views,

Construction of isometric scale.
Given the Orthographic views to draw isometric Projections.
Given the Orthographic views to draw cavalier   Drawings.
Given the Orthographic views to draw cabinet   Drawings.

11.0   Development of Surfaces

Need for preparing development of surface with reference to sheet metal
Work -Concept of true length of a line with reference to its Orthographic
projection when the line is (i) parallel to the plane of projection (ii) When it is inclined to
one principal and parallel to the other -Development of simple Engineering common solids
like Cubes, prisms, Cylinders, Cones, Pyramid (sketches only) -Types of Development:
Parallel line and radial line development -Procedure of drawing development, drawings of
trays funnels, 90^0 elbow pipes and rectangular ducts.
Drawing plate No. 10: (Consists of about 10 exercises)
Development drawings by " Parallel – line " method such as prisms and
Cylinders (Truncated).
Development drawing by "Radial – line " method such as cones and pyramids
(Truncated)
Development drawings of a tray: funnel 90^0 elbow and rectangular duct.

REFERENCE BOOKS

First Year Engineering Drawing – B.R. Gupta.

Engineering Drawing by N.D.Bhatt.

"A First Year Engineering Drawing" – A.C. Parkinson (Metric Edition).

T.S.M. & S.S.M on " Technical Drawing" prepared by T.T.T.I., Madras.

SP-46-1998 – Bureau of Indian Standards.

Introduction to Engineering Drawing R.C.Mouli – V.Rama Rao –
 M. Venkateswarlu.

PHYSICS LAB
(Common to All Courses)

Subject title   :   **Physics LAB**
Subject code   :   **CM-108**
Periods / week   :   **03**
Total periods / Year   :   **45**

List of Experiments   **No. of Periods**

1.	Vernier calipers	3
2.	Screw gauge	3
3.	Parallelogram law of forces and Triangle law of forces (verification)	3
4.	Simple pendulum	3
5.	Velocity of sound in air (Resonance method)	3
6.	Focal length and focal power of convex lens (separate and combination)	3
7.	Refractive index of solid using traveling microscope	3
8.	Surface tension of liquid using traveling microscope	3
9.	Coefficient of viscosity by capillary method	3
10.	Boyle's law verification	3
11.	Meter bridge	3
12.	Mapping of magnetic lines of force	3
	Revision	6
	Test	3

	Total	45

SPECIFIC OBJECTIVES OF PHYSICS LABORATORY

1. **VERNIER CALIPERS** - To determine the volumes of a cylinder and a sphere

2. **SCREW GAUGE** – To determine the thickness of a glass plate and area of cross section of a wire

3. **PARALLELOGRAM LAW AND TRIANGLE LAW VERIFICATION –** To verify laws and determination of unknown weight of an object

4. **SIMPLE PENDULUM –** To determine the value of acceleration due to gravity using law of length and to draw l-T and l- T^2 curves.

5 **VELOCITY OF SOUND IN AIR** – To determine velocity of sound in air at room temperature and to calculate its value at 0^0 C using two tuning forks.

6. **FOCAL LENGTH AND FOCAL POWER OF CONVEX LENSES –** To find focal length and focal power of a single convex lens and combination of convex lenses respectively using U-V method and draw U-V and 1/U – 1/V curves for single convex lens experiment only.

7. **REFRACTIVE INDEX OF A SOLID** – To determine the refractive index of material of a glass slab using traveling microscope.

8 **SURFACE TENSION OF A LIQUID** – To determine the surface tension of water using traveling microscope (Capillary method.)

9 **VISCOSITY OF A LIQUID** – To determine viscosity of water by using capillary method

10 **BOYLE'S LAW VERIFICATION** – To experimentally verify Boyle's law employing a Quill tube.

11 **METER BRIDGE** – To find specific resistance of the material of a wire

12 **MAPPING OF MAGNETIC LINES OF FORCE** – To locate the positions of neutral points using N-S and N-N method with the help of magnetic compass

CHEMISTRY LAB

Subject Title   :   **Chemistry LAB (COMMON TO ALL)**
Subject Code   :   **CM- 109**
No of periods   :   **03**
Total periods   :   **45**

List of Experiments

1.   Introduction to volumetric analysis

2.   Preparation of Standard Na_2CO_3 solution
3.   Estimation of HCl solution   using Std. Na_2CO_3 solution

4.   Estimation of NaOH using Std. HCl   solution

5.   Estimation of Mohr's Salt using Std. $KMnO_4$ solution

6.   Determination of acidity of water sample

7.   Determination of alkalinity of water sample

8.   Determination of total hardness of water using Std. EDTA solution

9.   Estimation of Chlorides present in water sample

10.   Estimation of Dissolved Oxygen (D.O) in water sample

DEMONSTRATION EXPERIMENTS

11.   Determination of pH using pH meter

12.   Determination of conductivity of water

13.   Determination of turbidity of water

14.   High volume air sampler

15.   Estimation of total solids present in water sample
Revision

INFORMATION TECHNOLOGY LAB

Subject Title   :   **Information Technology Lab**
Subject Code   :   **CM-110**
Periods/Week   :   **04**
Periods per Semester   :   **120**

SPECIFIC OBJECTIVES

On completion of this subject the student would be able to

- Identify the various components of a Computer system

- Differentiate between hardware and software

- State the functions of each component of a computer a system

- State the configuration of a computer system

- Identify the various peripherals

- Know how to open an application program

- Know how to create a folder in a specified location

- Open MS-word and Identify the components on the screen

- Create a document using MS-word and save it

- Create a table using MS-Word and save it

- Create mailing letters using mail merge tool of MS-word

- Open MS-Excel and identify the components on the screen

- Create a Worksheet in MS-Excel and save it

- Generate a Chart using the data in Excel-worksheet

- Automate calculations in a worksheet using formula

- Sort and filter data in a worksheet

- Create a simple Power point presentation for a small topic

- Backup required files and folders to a CD-ROM

- Introduction to the internet technology and imparting training to use searching of required sites and using e-Mails etc..

COURSE CONTENT:

1. Study of a computer system
2. Familiarise with basic MS-WINDOWS facilities like opening programs, searching, creating folders, copying and shifting data , etc.
3. Create a formatted word document using MS-Word
4. Familiarise with spell checker facility of MS-Word
5. Print the Word document using page setup and Print facilities
6. Create a soft copy of a given table using MS-Word
7. Create mailing letters for a given information using MS-Word
8. Create a soft copy of the given statistical data using MS-Excel
9. Generate Appropriate Chart for the statistical data using MS-Excel
10. Generate the soft copy of a worksheet using formula facility of MS-Excel
11. Create a soft copy of a simple database using Excel. Run sort and filter facilities for the database
12. Create a power point presentation for a simple technical topic using MS-PowerPoint
13. Create a backup CD for a data using NERO or similar CD writing software
14. Create an user account on the Internet and e-mail and sending a document to from a given e-mail address. To another e-Mail ID as attachment.
15. Using different search engines finding required sites to collect information on engineering related topics including down loading the contents.

III SEMESTER

Subject wise modification table for restructuring of the syllabus.

Branch…**Computer Engineering**

Sub-Code as per C-05	75	Sub-Code as per C-09	CM-301
Name of the subject as per C-05	Engineering Mathematics-II	Name of the subject as per C-09	Engineering Mathematics-II
No. of periods allotted as per C-05	75	No. of periods allotted as per C-09	60

S.no	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	**Integration- Methods of Integration**	**00**	**Added**	**+18**	**18**	**Shifted from I year**
4	**Definite Integrals and its Applications**	**14**		**00**	**14**	
5	**Numerical Integration**	**00**	**Added**	**+03**	**03**	**Useful in numerical calculations/Engineering applications**
6	**Differential Equations**	**25**		**00**	**25**	
7	**Laplace transforms**	**18**	**Deleted**	**-18**	**00**	**Not necessary for students at this level**
8	**Fourier series**	**18**	**Deleted**	**-18**	**00**	
	T O T A L	**75**		**-15**	**60**	

ENGINEERING MATHEMATICS – II
(Common Subject)

Subject title   : **Engineering Mathematics -II**
Subject code   : **CM-301**
Periods per week   : **04**
Periods / Semester : **60**

TIME SCHEDULE

S.No.	Major Topics	Periods	Weightage of Marks	Short Type	Essay Type
1	**Unit –I** Integration Methods of Integration	18	35	5	2
2	**Unit-II** Definite Integrals and Applications	14	26	2	2
3	Numerical Integration	03	05	-	½
4	**Unit-III** Differential Equations	25	44	3	$3\frac{1}{2}$
	Total	**60**	**110**	**10**	**8**

Objectives:
Unit-I
Methods of Integration:
1.0 Understand the concept of Indefinite integral:

1.1 Explain that ,where c is arbitrary

constant.
1.2.State the indefinite integral of standard functions and properties of Integrals with
    examples.
1.3. Integrate simple functions using the rule for $\int (u + v)\ dx$ and $\int ku\ dx$ where k
        is constant and u, v are functions of x.
1.4. Evaluate arbitrary constant and determine particular integrals in problems of
      the following type:
        i)   Find the equation of the curve passing through (1, 1) and
             whose slope at any point (x , y) is $2x^2 + 1/\sqrt{x}$.
        ii)   If the velocity at time 't' is given by
             $V = \sqrt{t} + 3$ find the displacement "S" at time $t = k$ given that
             S = 0 when t = 0.
1.5. Explain various methods of integration with examples.
1.6. Integrate simple functions by decomposition of the integrand
1.7 Integrate simple functions of the following type by substitution.
        i) $\int f(ax + b)\ dx$ where $f(x)\ dx$ is in standard form.
        ii) $\int [f(x)]^n\ f'(x)\ dx$
        iii) $\int f'(x)/[f(x)]\ dx$

iv) $\int f\{g(x)\}\, g\,'(x)\, dx$

1.8. Explain finding the Integrals of *tan x, cot x, sec x* and *cosec x* using the
     above.

1.9. Evaluate the integrals of the form $\int Sin^m\theta\ Cos^n\theta.\, d\theta$ where m and n are
     positive integers

1.10. Evaluate Integrals of powers of *tan x* and *sec x*.

1.11. Evaluate the integrals of the form $\int e^x\, [f(x) + f\,'(x)]\, dx.$

1.12 Evaluate the Standard Integrals of the functions of the type

i) $\dfrac{1}{a^2+x^2}, \dfrac{1}{a^2-x^2}, \dfrac{1}{x^2-a^2}$

ii) $\dfrac{1}{\sqrt{a^2+x^2}}, \dfrac{1}{\sqrt{a^2-x^2}}, \dfrac{1}{\sqrt{x^2-a^2}}$

iii) $\sqrt{x^2-a^2}, \sqrt{x^2+a^2}, \sqrt{a^2-x^2}$

1.13. Evaluate the Integrals of the

   type

1.14. Evaluate integrals using integration by parts with examples State the
     Bernoulli's rule for evaluating the integrals of the form $\int u\,v\,d.$

Unit-II
2.0 Definite Integrals and its applications

2.1 Understand the concept of definite integrals and Define the definite
     integral over an interval.

2.2 State various properties of definite integrals.

2.3 Evaluate some problems on definite integrals using the above properties.

2.4. Identify a definite integral as a limit of sum by considering an area.

2.5. State the fundamental theorem of integral calculus.

2.6. Find the areas under plane curves and area enclosed between two curves using
     integration.

2.7 Obtain the volumes of solids of revolution.

2.8. Obtain the mean value and root mean square value of the functions in any
     given interval.

3. 0Numerical Integration

3.1 Explain the Trapezoidal rule, Simpson's 1/3 rules for approximation of
     Integrals and provide some examples.

Unit -III

4.0 Differential Equations

4.1. Definition of a Differential equation – order, degree and solution of a
     differential equations – formation of differential equations - solutions of
     ordinary differential equations of the first order and first degree of the type:

   i.   Variables Separable.

   ii   Homogeneous Equations and equations reducible to homogeneous
            form.

   iii.   Exact Differential Equations

   iv.   Linear differential equation of the form dy/dx + Py = Q,

where P and Q are functions of x or constants.

  v.   Bernoulli's Equation (Reducible to linear form.)

4.2   Solution of second order differential equation of the type f(D)y=0

4.3   Solution of nth order differential equation of the type
       $f(D)\ y = X$ where $f(D)$ is a polynomial of nth order and X is a function of the form functions $k, e^{ax}, Sinax, Cosax, e^{ax} V, x^{m} Sinax$ or $Cosax$, where V is a function of x.

COURSE CONTENTS
Unit-I
1. Methods of Integration.
1.   Integration regarded as reverse of differentiation – Indefinite integral and constant of   integration – standard forms.   Integration by decomposition of the integrand into simple rational, algebric functions-Integration by substitution or change of variable. Integrals of the form $sin^{m}\theta.\ cos^{n}\ \theta$. where m and n are positive integers. Integrals of tan x, cot x, sec x, cosec x and powers of tan x, sec x by substitution.
       Integrals of:

$$i)\ \frac{1}{a^2+x^2}, \frac{1}{a^2-x^2}, \frac{1}{x^2-a^2}$$

$$ii)\ \frac{1}{\sqrt{a^2+x^2}}, \frac{1}{\sqrt{a^2-x^2}}, \frac{1}{\sqrt{x^2-a^2}}$$

$$iii)\ \sqrt{x^2-a^2}, \sqrt{x^2+a^2}, \sqrt{a^2-x^2}$$

       Integration by parts including Bernoulli's rule.

Unit-II
2. Definite Integral and its applications:
   Definite integral – Properties of definite integrals, evaluation of simple definite integrals. Definite integral as the limit of a sum. Area under plane curves – Area enclosed between two curves. Volumes of solids of revolution. Mean value and RMS value of a function in a given interval.

3. Numerical Integration:

       Trapezoidal rule, Simpson's 1/3 rules for approximation of Integrals.

Unit -III
4. Differential Equations:
Definition of a differential equation-order and degree of a differential equation-formation of differential equations-solution of differential equation of the type first order, first degree, variable-separable, homogeneous and Equations reducible to Homogeneous, exact, linear differential equation of the form dy/dx + Py = Q, Bernoullis equation, nth order linear differential equation with constant coefficients both homogeneous and non homogeneous and finding the Particular Integrals for the functions $k, e^{ax}, Sinax, Cosax, e^{ax} V, x^{m} Sinax$ or $Cosax,$ where V is a function of $x.$

Subject wise modification table for restructuring of the syllabus.

Branch………… COMPUTER…………………………………ENGINEERING

Sub-Code as per C-05	CM-302	Sub-Code as per C-09	CM-302
Name of the subject as per C-05	Basic Electrical & Electronics Engg	Name of the subject as per C-09	Basic Electrical & Electronics Engg
No. of periods allotted as per C-05	90	No. of periods allotted as per C-09	75

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	Electric Current, Ohm's law, Resistance, etc.	15	-	-02	13	Due to restructuring
2	Kirchoffs laws , Star, Delta Transformation	15	-	-	15	-
3	Electromagnetic Induction, AC Fundamentals	15	-	-	15	-
4	Electronic passive components	10	-	-1	09	Due to restructuring
5	Semiconductor materials, Junction diode & transistors	20	-	-02	18	Due to restructuring
6	Special Semiconductor devices	10	Whole chapter deleted	-10	00	To adjust to 75 periods and the topic more related to EE/EC
7	Stabilizers & UPS	05	-	--	05	-
	T O T A L	90		-15	75	

BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

Subject Title : **Basic Electrical And Electronics Engineering**
Subject Code No. : **CM – 302**
Periods per Week : **05**
Periods per Semester : **75**

TIME SCHEDULE

Sno	Major topics	Periods	Weightage of marks	Short Questions	Essay Questions
1	Electric Current-Ohm's law Resistance etc	13	13	1	1
2	Kirchoff's Laws-Star-DeltaTransformation	15	16	2	1
3	Electromagnetic Induction, A.C. Fundamentals	15	16	2	1
4	Electronic passive components	09	13	1	1
5	Semiconductor materials , Junction diode & transistors	18	39	3	3
6	Stabilizers and UPS	05	13	1	1
	Total	**75**	**110**	**10**	**08**

OBJECTIVES

1.0   Comprehend basic Principles of Electricity

1.1   Distinguish between conductor, insulator and semi-conductor with respect to valence electron.

1.2   Infer Ohm's Law and state it.

1.3   Give the concept of Resistance and define the terms specific resistance and conductivity.

$R = \rho l/a$

1.4   Solve simple problems based upon the formulae.

1.5   Explain the effects of temperature on resistance and define temperature co-efficient of resistance.

1.6   Explain the variations of temperature co-efficient of resistance.

1.7   Develop the formula for resistance at any temperature

$R_t = R_0(1+\propto_0 t)$

1.8   Solve simple problems based on the above formulae.

1.9 Explain equivalent resistance of a network, develop the expressions for equivalent resistance with simple series and parallel connections.

1.10 Solve problems on the above.

1.11 Give the idea of division of current in parallel circuits.

1.12 Solve numerical problems on the above.

2.0 Understand Kirchoff's laws and star delta transformations.

2.1 Differentiate between active and passive circuits.

2.2 Explain junction ,branch and loop in circuits.

2.3 State limitations of Ohm's law.

2.4 State Kirchoff's current law and voltage law.

2.5 Solve problems on Kirchoff's laws.

2.6 Explain star and delta circuits

2.7 Explain the concept of circuit transformation and equivalent circuits

2.8 Develop transformation formulae for star- delta transformations

2.9 Solve problems on the above.

3.0 Electro Magnetic Induction & A.C fundamentals

3.1 Understand Electro Magnetic Induction

3.1.1 State Faraday's laws of electro - magnetic induction.

3.1.2 Explain dynamically and statically induced E.M.F.

3.1.3 State Lenz's law and explain Fleming's right hand rule.

3.1.4 Develop the concept of self and mutual inductance.

3.1.5 State the formulas for self and mutual inductance.

3.1.6 State co-efficient of coupling.

3.1.7 Explain the concept of energy stored in a magnetic field.

3.2 A.C. fundamentals, circuits, Production of A.C.

3.2.1 Define Cycle, frequency Time Period, RMS Value, form factor, Peak factor for Sinusoidal A.C. quantity.

3.2.2 Explains phase & phase difference.

3.2.3 Explain addition of A.C. quantities.

3.2.4 Problems on the above

3.2.5 Explain the case of pure resistance across AC.

3.2.6 Explain the case of pure inductance across AC.

3.2.7 Explain the case of pure Capacitance across AC.

3.2.8 Explain R-L Series Circuit.

3.2.9 Simple Problems on the above.

3.2.10 Explain R-C Series Circuit.

3.2.11 Simple Problems on the above.

3.2.12 Explain R-L-C Series Circuit.

3.2.13 Simple Problems on the above.

3.2.14 Resonance is series circuit.

3.2.15 Definition of Q factor.

3.2.16 Solve problems on the above.

4.0 Know the different types of Electronic passive components.

4.1 Classify different electronic passive components.

4.2 Define resistance and resistivity of the material

4.3 List the resistors on the basis of materials used for their construction

4.4 State PTC and NTC resistors and their applications.

4.5 Use the color code for the resistors .

4.6 Distinguish between a Potentiometer and Rheostat connection of a variable resistor. Uses of Rheostat and Potentiometer.

4.7 Define the capacitance of a capacitor, its units and permitivity.

4.8 Classify the different capacitors on the basis of dielectric materials.

4.9 Give the specifications of a capacitor.

4.10 Mention the Typical capacitance ranges of the above capacitors.

4.11 State the color code for tabular ceramic and disk ceramic capacitors.

4.12 List the applications of different capacitors.

4.13 Give the specification of AF Choke and RF choke and mention their applications.

4.14 List different types of transformers used in electronic Engineering.

4.15 State the specifications and mention the applications of the above transformers.

5.0 Understand the properties of semi-conductor materials and junction diode and Bipolar transistors.

5.1 Distinguish between conductor, semi-conductor and insulator on basis of Electrical properties.

5.2 Describe the atomic structure of germanium and silicon semi-conductor materials.

5.3 Distinguish between intrinsic and Extrinsic semi conductor materials.

5.4 Describe the formation of P- type and N-type materials.

5.5 Explain with sketches the behavior of P-type and N-type materials.

5.6 Explain the formation of PN junction diode.

5.7 Describe the operation of PN junction with forward, reverse biases, no bias.

5.8 Draw the volt-ampere characteristic of PN junction diode.

5.9 Give the forward/reverse resistance of a diode from the characteristic.

5.10 State the effect of temperature on the forward and reverse characteristic of silicon and germanium diode.,

5.11 List the important specifications of a junction diode.

5.12 Give the basic constructional features of a transistor.

5.13 Explain the principles of transistors.

5.14 Sketch the I.S.I symbol for PNP and NPN.

5.15 List the configurations of transistors.

5.16 Draw the i/p and o/p characterstics of transistors in CB and CE mode

3. Deduce the relation between ALPHA & BETA.

Derive the expressions for the collector current in CB & CE configuration in terms of I_e, I_c, I_b.

5.18 Draw an approximate equilent circuit for a transistor in CE , CB

configurations.

4.   Give and compare the expressions for Voltage gain , current
gain , power gain , Input & Output impedence and leakage current
in CB, CC & CE configurations.

5.20   State the applications of transistors.

6.0   Understand the working principle of stabilizers and UPS.

6.1   Need for stabilizers.

6.2   Types of stabilizers.

6.3   Specification and rating of stabilizers.

6.4   Working principle of stabilizer with block diagram.

6.5   Need for UPS.

6.6   Different types of UPS.

6.7   Working principle of UPS with block diagram.

6.8   Explain each block.

6.9   Specification and ratings of UPS.

6.10   Maintenance of stabilizers & UPS including batteries.

6.11   Spike busters and suppressors.

6.12   Explain maintenance free batteries.

COURSE CONTENTS

1.Electric Current – Ohm's Law – Resistance:
Conductor, Insulator and semi-Conductor and their atomic patterns, Idea of Electric
Potential,Ohm's Law ,Resistance   ,Specific resistance ,Conductivity ,Problems on
the above, Effect of temperature on resistance,Problems on the above,
Definition of temperature co-efficient of resistance,Values of temperature co-efficient
at different   temperature ,Variation of resistivity with temperature,

Resistance in series, parallel and series – parallel, combination,Division of current in parallel circuits ,Problems on the above .

5. Kirchoff's Laws – Star – Delta Transformation
Explanation of active and passive circuits, Junction ,branch and loop in circuits, Limitations of application of Ohm's law, Kirchoff's laws,Current law,Voltage law, Application to D.C., Networks ,Star-Delta-Transformation,a) Star – Delta configurations
b) Equivalent circuits concept, Concept of transformation, Transformation from Star to Delta,Delta to Star, e)Problems on the above.

3.Electro Magnetic Induction & AC Fundamentals .
Faraday's laws of electro – magnetic induction,Dynamically and statically induced E.M.F., Lenz's Law – Fleming's right hand rule, Self and mutual inductance – expression,Co-efficient of coupling,Inductance in series and parallel,Energy stored in a magnetic field – Formula ,Energy stored per unit volume ,Lifting power of magnet
Problems on the above ,Definition of Cycle, frequency, Period, RMS value form factor, Peak ,factor further Sinusoidal AC quantity,Phase & Phase difference,Addition of AC quantities,A.C. across pure resistance, inductance & Capacitance,R-L, R-C, R-L-C Series Circuits, Series' Resonance and Q factor,Solving Parallel AC Circuits by,a)Vector Method,b)   Admittance
Method,c)   "J" notation,Parallel Resonance,

4. Components :   Types of Resistors – Their ratings – Uses – Types of potentiometers- Their applications- Types of capacitors – Their ratings – Uses – Types of coils – Chokes – Transformers – Switches & relays – Commonly used cables and wires.

5. Semiconductor physics :   Electrical   properties   of   semiconductor materials. Semiconductor physics of germanium & silicon atom. Formation and behaviour of P-N junction with no external potentials, with forward and reverse potentials, metal semiconductor diodes.,Transistors.

6. Special Semiconductors: Simple theory and characteristics of ZENER diode, FET, Tunnel diode, SCR, Gunn diode, Semiconductor lasers- Displays.

7.Stabilzers And UPS : Need for stabilizers , types of stabilizers ,specification and rating of stabilizers, Working principle of stabilizer with block diagram, need for UPS, Working principle of UPS with Block diagram.

REFERENCE BOOKS

1. Electrical Technology Vol.I   --   B.L.Theraja

2. Electrical Technology   --   Hughes

3. Electrical Vol.I   --   J.B.Gupta

4. Basic Electrical Engineering   --   Mittle, TMH

5. Basic Electrical Engineering   Vol.1 --   Dhogal, TMH

Subject wise modification table for restructuring of the syllabus.

Branch……COMPUTER ENGINEERING

Sub-Code as per C-05	CM-303 & CM-305	Sub-Code as per C-09	CM-303
Name of the subject as per C-05	COMPUTER ARCHITECTURE AND DIGITAL ELECTRONICS	Name of the subject as per C-09	Digital Electronics & Computer Architecture
No. of periods allotted as per C-05	75 + 75 = 150	No. of periods allotted as per C-09	90

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	Logic Gates & Boolean Algebra	20	-	-5	15	Due to Restructuring
2	Logic Families & Flipflops	20	TTL /CMOS/ECL Logic Families are deleted	-10	10	Not related to Computer Branch
3	Counters & Registers	20	-	-5	15	Due to Restructuring
4	Combinational Circuits	5			5	No Change
5	Semiconductor Memories	10	All topics are deleted	-10	0	Added in Hardware & Networking Subject
6	CPU Organization	15	-	-5	10	Due to Restructuring

7	Information representation and Arithmetic operations	20	-	0	20	No Change
8	Memory Organization	15	-	-8	7	Due to restructuring
9	I/O Organization	15	-	-7	8	Due to restructuring
10	Pipeline & Vector Processing	10	-	-10	00	Not required at diploma level
	T O T A L	75+75 = 150		-60	90	

DIGITAL ELECTRONICS & COMPUTER ARCHITECTURE

Subject Title   : **Digital Electronics & Computer Architecture**
Subject Code   : **CM – 303**
Periods per Week   : **06**
Periods per Semester   : **90**

TIME SCHEDULE

SNO	MAJOR TOPICS	PERIODS	WEIGHTAGE OF MARKS	SHORT QUESTIONS	ESSAY QUESTIONS
1	Logic Gates & Boolean Algebra	15	16	2	1
2	Logic Families and Flip-Flops	10	13	1	1
3	Counters and registers	15	18	1	1 1/2
4	Combinational circuits	5	8	1	1/2
5	CPU Organization	10	13	1	1
6	Information representation , Arithmetic Operations	20	21	2	1 1/2
7	Memory Organization	07	8	1	1/2
8	I/O Organization	08	13	1	1
	Total	**90**	**110**	**10**	**08**

OBJECTIVES

1.0   Comprehend Boolean algebra and working of different logic gates.

   1.1   Define AND, OR, NOT operators with truth tables.

   1.2   Explain the working of EX-OR and EX-NOR gates with truth tables.
   1.3   Explain the working of NAND and NOR gates using truth tables.
   1.4   Develop AND, OR, NOT, EX-OR gates using NAND gates only, NOR gates only.
   1.5   State the different postulates in Boolean algebra.
   1.6   State De-Morgan's theorems.
   1.7   Apply De-Morgan's theorems and other postulates of Boolean algebra to simplify the given Boolean expression.
   1.8   Write Boolean expression for given truth table.
   1.9   Use K – map to simplify Boolean expression (up to 4 variables).

1.10 Comprehend the working of arithmetic circuit.

1.11 State the functions of Half Adder.

1.12 Draw Half-Adder circuit using an exclusive OR and an AND gate.

1.13 Show that two Half-Adder and an OR gate constitute a Full-Adder.

1.14 Realize a Half–Adder using only NAND gates or only NOR gates.

1.15 Draw a 4-bit parallel adder using full adders.

1.16 Explain the working of the above circuit.

1.17 Draw a 4-bit parallel adder/ 2's complement subtractor circuit.

1.18 Explain the working of the above circuit.

1.19 Explain the working of a serial adder with a block diagram.

1.20 Compare the advantage and disadvantages of a serial adder with a parallel adder.

1.21 Explain the operation of a digital comparator circuit for two 4 bit words.

2.0 Logic Families and Flip Flops

2.1 Know the details of different logic families.

2.2 Define positive and negative logic levels.

2.3 List for TTL, CMOS and ECL families specifications such as logic levels propagation delay, noise margin, fan in, fan out & power dissipation.

2.4 State the basic principle of operation of a Flip-flop.

2.5 Explain the working of a NAND/NOR gate latch.

2.6 Explain with block diagram, waveforms and truth tables the working of RS, RST, T, D and JK Flip-flop.

2.7 Discus the concept of edge and level triggering flip-flops.

2.8 Distinguish between synchronous and asynchronous inputs of a flip- flop and state their functions.

2.9 State the need for a Master-Slave flip-flop.

2.10 Explain the working of a Master-Slave flip-flop using suitable diagram and truth table.

2.11 List the details of common TTL/CMOS flip-flop ICs.

2.12 State the principle of operation of monostable multi vibrator and Schmitt trigger circuit.

3.0 Comprehend the function of counters and Registers and their working.

3.1 Distinguish between asynchronous and synchronous counters.

3.2 Draw the circuit of a module-8 ripple counter.

3.3 Explain the counting sequence with waveforms and truth tables in the above circuit.

3.4 Draw the circuit of a Decade counter.

3.5 Explain the counting sequence with waveforms and truth table in the above circuits.

3.6 Explain the draw backs of ripple counters.

3.7 Draw the circuit of a 4-bit synchronous counter.

3.8 Explain the operation above circuit.

3.9 Explain the operation of a up/down counter, using flip flops.

3.10 Discuss the need for a programmable counter using flip flops.

3.11 Explain the operation of a programmable counter using flip flops.

3.12 Draw a 4-bit ring counter circuit.

3.13 Explain the operation of the above counter.
3.14 State the applications of counter.
3.15 Explain the transfer of data between register.
3.16 Explain the working of serial in – serial out and serial in – parallel out register.
3.17 Explain the working of shift left, shift right registers.
3.18 Explain the working of universal shift register. (Example 74194 or equivalent)
3.19 State the use of shift register as memory.

4.0 Understand the combinational circuits
4.1   Illustrate the applications of a multiplexer with a circuit diagram.
4.2   Describe the operation of a 4 to 10 line decoder.
4.3   Illustrate the application of a demultiplexer with a circuit diagram.
4.4   Mention some applications of multiplexers and demultiplexers.

5.0 Understand the Processor Organization
5.1 Draw the functional block diagram of Digital computer and explain the function of each unit.
5.2 Draw the block diagram of simple accumulator based CPU.
5.3 Explain the function of each unit.
5.4 Draw the block diagram of Memory Unit (RAM), ROM.
5.5 Define the terms micro operation, macro operation, instruction cycle, fetch cycle and execution cycle.
5.6 Define stored program concept.
5.7 Describe the sequential execution of a program stored in memory by the CPU.

6.0 Comprehend the process of Information representation and Arithmetic Operation
6.1 Explain the basic types of information representation in a computer.
6.2 Define floating point representation and fixed point representation of numbers.
6.3 Illustrate the same with example.
6.4 Distinguish between above two representations.
6.5 Define Operand, Opcode and address.
6.6 Explain zero address, one address, two address and three address instructions with simple examples.
6.7 Discuss different addressing modes.
6.8 Explain the fixed point addition and subtraction, multiplication and division operations with flowcharts.
6.9 Explain floating point addition, subtraction, multiplication and division operations with flowcharts.

7.0   Appreciate organization of Computer Memory system.
7.1   Distinguish between main and auxiliary memory.
7.2   Explain the need for memory hierarchy in a computer.
7.3   State the significance of various memory devices characteristics: access time, access rate, alterability , permanence of storage, cycle

time.

    7.4   Explain Associative Memory
    7.5   Know the principle of virtual memory organization in a computer system.
    7.6   Explain virtual address and physical address organization.
    7.7   Explain the principle and advantage of cache memory organization.
    7.8   Explain the principle of memory interleaving in a computer.

8.0   Know the input and output organization of a computer.
    8.1   List the various peripheral devices that can be connected to a computer.

    8.2   Explain the need for an interface.
    8.3   List out three modes of date transfer.
    8.4   Explain synchronous and asynchronous data transfer.
    8.5   Explain hand shaking (scheme) procedure of data transfer.
    8.6   Explain programmed I/O method of data transfer.
    5.7   Explain interrupted initiated I/O.
    8.8   Explain DMA controlled transfer.
    8.9   Explain priority interrupt, polling, and daisy chaining priority.
    8.10   Explain about a bus system.
    8.11   Name a few bus systems.

COURSE CONTENTS

1. Logical Gates and Boolean algebra : AND, OR, NAND, NOT, NOR & EX-OR gates. Logical definitions – Symbols – truth tables. Boolean theorems, Boolean simplifications of Boolean expressions, Using De-Morgan's theorems, Formation and implementation of Logic expressions, Karnaugh's mapping, Applications involving developing of combinational logic circuits. Half-Adder, Full-adder, Subtractor series – Parallel Binary adder – Parallel adder/subtractor circuits.

2. FLIP FLOP: Different logic families, Basic principles of Flip Flop operation (with help of wave form & truth tables) of RS,T,D,JK and Master Slave JK flip flop concept of Edge Triggering and Level Triggering , Synchronous and Asynchronous device and their use using commercial TTL and CMOS Ics .

3. Counters: Basic Asynchronous, Synchronous Binary and Decade counter and the Ripple counter, their use Decade counter, Up and Down counters, Ring counter.

4. Registers : Shift registers, Serial, Parallel register, Serial-in Parallel out, Parallel-in –serial out devices, Universal shift registers, Applications, Decoders, - Multiplexers, Demultiplexers and Encoders.

5   CPU Organisation

Functional block diagram of a simple accumulator based CPU – Block diagram of Memory Unit and ROM – Micro operation – Macro operation basic instruction – Stored Program concept.

6   Information Representation and arithmetic Operations
Fixed point and floating point representation of numbers – Operand, opcode and address – Instruction formats and instruction types – Addressing modes. Fixed point and floating point addition, subtraction, Multiplication and Division.

7   Memory Organization
Memory hierarchy in a computer – Various memory devices – Characteristics of various memory devices – Associative memory – virtual memory organization – Cache memory – Memory interleaving.

8   Input and Output Organization
Interface – methods of data transfer – Programmed I/O, DMA and priority interrupt, computer with I/O processor – Bus organization.

REFERENCE BOOKS

1. Digital principles and applications   --   Malvino and leach

2. Digital Electronics   --   Bignell   - Thomson

3. Modern Digital Electronics   --   R.P. Jain

4. Computer System Architecture   --   Morris Mano.

5. Structured Computer Organization   --   Andrews Tennenbaum.

6. Computer Organization   --   Govindarajulu (TMH).

7. Computer Organization & Architecture-- William Stallings

Subject wise modification table for restructuring of the syllabus.

Branch:-   COMPUTER ENGINEERING

Sub-Code as per C-05	CM-402	Sub-Code as per C-09	CM-304
Name of the subject as per C-05	Data Structures Through C	Name of the subject as per C-09	Data Structures Through C
No. of periods allotted as per C-05	90	No. of periods allotted as per C-09	75

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	Introduction to Data Structures	05	Algorithm analysis for time and Space	-	05	Must know analysis before actual methods learning
2	Linear Data Structures	30	Application of Queues / Transpose of sparse matrix	-	30	Must know the applications of queue
3	Non linear Data Structures	35	Conversion & application of trees added	-15	20	Must know the applications of trees when learning the trees
4	Sorting	15	Elaboration of each topics is given, Insertion sorting / Program on quick sort	-	15	Not required at diploma level
5	Searching	05	Elaboration of each topics is given	-	05	-
	T O T A L	90		-15	75	

DATA STRUCTURES THROUGH   C

Subject Title : Data Structures through C
Subject Code : CM – 304
Periods per Week : 05
Periods per Semester : 75

TIME SCHEDULE

Sno	Major topics	Periods	Weightage of marks	Short questions	Essay questions
1	Introduction to Data structures	05	06	2	--
2	Linear Data structures	30	52	4	4
3	Non Linear Data structures	20	26	2	2
4	Sorting	15	18	1	$1^{1/}{}_{2}$
5	Searching	05	08	1	½
	Total	**75**	**110**	**10**	**08**

OBJECTIVES

1.0   Introduction to Data Structures

1.1   Define **data structure** and classify them

1.2   Know about linear data structures

1.3   Know about nonlinear data structures

1.4   Know about data types and abstract data types
1.5   Algorithm analysis for time and space requirements

2.0 Linear Data structures

2.1 Comprehend Linked list

2.1.1   State the advantages of linked lists

2.1.2   State the purpose of dummy header
2.1.3   Create a singly linked list
2.1.4   Perform insertion and deletion operation on a singly linked list
2.1.5   Know how to sort a singly linked list
2.1.6   Know how to search and replace an element in a linked list
2.1.7   Know to reverse a singly linked list

2.1.8   Create a singly circular linked list
2.1.9   Create a doubly linked list
2.1.10 Insert and delete elements in a doubly linked list
2.1.11 Create a doubly linked circular list

2.2 Understand Queues and Stacks

2.2.1 Know the various operations of a stack

2.2.2 Discuss applications of stacks

2.2.3 Implementation of stacks

2.2.3 Convert infix to postfix expression
2.2.4 Evaluate postfix expression
2.2.5 Know various the operations on queues
2.2.6 Discuss application of queues
2.2.7 Know array implementation of queue
2.2.8 Know linked list implementation of a queue
2.2.9 Implement circular queues
2.2.10 Know about priority queues
2.2.11 Know how to represent a sparse matrix in memory

3.0 Know the Tree structures

3.1 Know Tree definitions and concepts
3.2 Explain the linear representation and linked list representation of a Binary tree
3.3 Know how to create & display a tree
3.4 Perform traversal operation on trees
3.5 Construct a tree using inorder and preorder traversal
3.6 Construct a tree using inorder and postorder traversal
3.7 Conversion of general trees to binary trees
3.8 Perform operations on a binary tree
3.9 Know the Applications of trees

6. Understand various Sorting techniques

4.1 Definition of sorting, Methods of sorting
4.2 Know why sorting is needed
4.3 Know the method of selection sort
4.4 Know the algorithm for selection sort and its complexity
4.5 Discuss the program for selection sort
4.6 Know the method of insertion sort
4.7 Know the algorithm for insertion sort and its complexity
4.8 Discuss the program for insertion sort
4.9 Know the method of bubble sort
4.10 Know the algorithm for bubble sort and its complexity
4.11 Discuss the program for bubble sort

    4.12 Know the method of quick sort
    4.13 Know the method of merge sort
    4.14 Discuss the program to implement merge sort on two sorted lists

7.   Understand different Searching Techniques

    5.1 Definition of Searching, Types of Searching
    5.2 Know why searching is needed
    5.3 Know the method of Linear Search
    5.4 Know the algorithm for Linear Search and its complexity
    5.5 Discuss the program for Linear Search
    5.6 Know the method of Binary Search
    5.7 Know the algorithm for Binary Search and its complexity
    5.8 Discuss the program for Binary Search

COURSE CONTENTS

1. Introduction to data structures
Data structures – Linear & non linear, data types and abstract data types, algorithm analysis for time and space requirements.

8.   Linear data structures
Linked Lists – Singly linked lists – Create, insert, delete, sort, search and replace an element in a linked list – Reverse, Create singly circular linked list. Doubly linked list – Create, insert, delete elements in doubly linked list - Create doubly linked circular list.

Queues and stacks
Implementation of stacks, application of stacks, converting infix to postfix expression and evaluation – Applications & Implementation of queues, Circular queues, Priority queue. Sparse matrix Representation

9.   Non Linear Data Structures

Trees
Trees –Binary trees – Linear representation – Linked list representation, tree traversals, Tree Conversion & Applications

4.   Sorting
Introduction to different sorting techniques – selection, insertion, bubble, quick & merge.

10.   Searching

   Introduction to different searching techniques – sequential and binary.

REFERENCE BOOKS

1.   Data Structures: A Pseudocode Approach with C - Gilberg / Forouzan

2.   Data Structures using 'C'   - Tanenbaum langsam and
                                                                              Augonstein (PHI).

3.   Data structures through C   - Yashwanth Kanetkar

4. An Introduction to data structures with applications   - Tremblay & Sorenson

Subject wise modification table for restructuring of the syllabus.

Branch……COMPUTER ENGINEERING

Sub-Code as per C-05	CM-503	Sub-Code as per C-09	CM-305
Name of the subject as per C-05	RDBMS	Name of the subject as per C-09	RDBMS
No. of periods allotted as per C-05	90	No. of periods allotted as per C-09	60

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
01	Concept of DBMS & RDBMS	20	Added RDBMS terminology and E.F.Codd's rules for RDBMS	-5	15	Topics missing in C-05
02	Concept of SQL	15	Added sub queries and joins	-5	10	-- do --
03	Management of Schema Objects	20	Deleted rollback segment information	-10	10	Not required at diploma level
04	PL./SQL	20	Added database triggers	-5	15	Topic missing in specific objectives
05	Advanced PL/SQL	15	Deleted PL/SQL failures and compilation	-5	10	Covered in 4th unit
	T O T A L	90		-30	60	

RELATIONAL DATABASE MANAGEMENT SYSTEMS

Subject Title : Relational Database Management Systems
Subject Code : CM - 305
Periods per week : 04
Periods per Semester : 60

TIME SCHEDULE

S.No	Major Topics	Periods	Weightage Of Marks	Short Questions	Essay Questions
1.	Concept of DBMS & RDBMS	15	29	3	2
2.	Concept of SQL	10	21	2	1 1/2
3.	Management of schema Objects	10	21	2	1 1/2
4.	PL/SQL	15	26	2	2
5.	Advanced PL/SQL	10	13	1	1
	Total	**60**	**110**	**10**	**8**

OBJECTIVES

1.0   To understand the concept of DBMS & RDBMS
   1.1   Understand the purpose of database systems
   1.2   Explain what is meant by data base abstraction
   1.3   List and explain data models
   1.4   Understand instances and schemes
   1.5   Comprehend the data independence.
   1.6   Explain data definition language
   1.7   Explain data manipulation languages
   1.8   Explain data base manager
   1.9   Explain data base administrator and users
   1.10   Describe the overall system structure
   1.11   Explain entity and entity sets
   1.12   Explain relationship and relationship sets
   1.13   Explain mapping constraints
   1.14   Reduce the ER diagrams to tables
   1.15   Explain generalization, specialization and aggregation
   1.16   Understand Normalization– 1st NF, 2nd NF, 3rd NF and BCNF
   1.17   Explain RDBMS Terminology
   1.18   Explain E.F.CODD's rules for RDBMS

2.0   Understand the concept of SQL

2.1   Explain the benefits of SQL

2.2   Understand the embedded SQL, Lexical conventions, oracle tools support for SQL

2.3   Name the objects and parts, and refer them

2.4   Refer the object in remote data bases

2.5   Explain literals, text and integers

2.6   List and explain the different data types like character, number long, date, raw and long raw etc.

2.7   Understand pseudo-columns

2.8   Understand the comments within SQL Statement

2.9   List and explain the functions like single row, character, conversion and group functions

2.10   Give and explain the various date and number format models

2.11   List and explain the various commands of SQL like data definition language commands, data manipulation language commands, transaction control commands.

2.12   Explain Sub queries

2.13   Explain Joins – Types of Joins

3.0   Understand the management of schema objects

3.1   Explain the guidelines for managing schema objects

3.2   Explain the management of space usage of data base table etc

3.3   Explain the procedure of creating, altering and dropping tables

3.4   Explain the management of sequences like creating altering dropping etc

3.5   Explain the various synonyms management like creating, dropping etc

3.6   Understand the various steps of managing indexes

3.7   Comprehend the various steps of managing clusters   like creating, cluster table, cluster indexes, alter cluster, storage allocation for cluster, hash clusters and clustered tables etc

3.8   Explain the creation of views from multiple tables, types of views and advantages of views.

3.9   Analyse tables, indexes and clusters.

3.10   Explain the management of integrity constraints

4.0   PL/SQL

4.1   List and explain the architecture and features of PL/SQL.

4.2   List and explain the data types, data conversions, declarations, naming conventions and built in functions.

4.3   Explain the PL/SQL tables and user defined records.

4.4   Explain and work out the control structure.

4.5   Explain the advantages and features of Exceptions.

4.6   Explain the propagation and re-raising of Exceptions.

4.7   Describe the advantages of sub programs.

4.8   List and explain the various statements and declarations for

procedures and functions.

4.9   List and explain the various parameters, parameter modes, parameter default values etc.,

4.10 Explain PL/SQL global, local and system variables.

4.11 Explain recursion.

4.12 Explain cursor attributes and cursor management.

4.13 Explain database triggers

4.14 Create and use stored programs.

5.0   Advanced PL/SQL.

5.1   Explain the concept of stored sub programs.

5.2   List and explain the advantages of packages.

5.3   List and explain the specifications of packaging.

5.4   Explain overloading and calling packaged sub programs.

5.5   Explain package state and dependency and standards.

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COURSE CONTENTS

1. Concept of DBMS

Purpose of Database systems – data Abstraction – Data Models – Instances and schemes – Data independence – Data Definition Language- Data manipulation Language – Data base manager – Data base Administrator - Database users – Overall system structure.

Entities and entity sets – Relationships and Relationship sets – mapping constraints – Entity – Relationship Diagram – Reducing E- R Diagrams to tables – Generalization and specialization – Aggregation.

Structure of Relation Data bases – Formal Query Languages – Commercial Query Languages – Modifying the Data base.

2. Concept of SQL

Benefits of SQL – Embedded SQL – Lexical conversions – ORACLE tools support for SQL.

Naming object and parts – Referring objects and parts – Referring to object in remote databases- Literals – Text –Integer – Number – Data types – Character data types – Number data type – Long data type – Data type Raw and long raw data types – Nulls –Pseudo columns – comments within SQL statements – comments on schema objects.

Operators – Unary and Binary operators – Precedence- Arithmetic operators – character operators – comparison operators – logical operators- se operators – other operators – functions – single row functions – number functions – character functions – row functions – number values – data functions – conversion functions – other functions- date format models .

SQL commands, data definition language commands data manipulation language commands. Transaction control commands.

Subqueries - Joins

3. Schema objects

Guidelines for Managing schema objects – managing the space usage of data blocks – setting storage parameters – under standing space use of datatypes – managing tables –creating tables – alter tables – dropping tables – managing sequences – creating sequence – altering sequences- initialization parameters affecting – sequences – dropping sequences – managing synonyms – creating synonyms – dropping synonyms – managing indexes – guidelines for managing indexes – calculating space for indexes – creating indexes – indexed tables, and cluster indexes – guidelines for managing clusters, calculating space required by clusters – creating clusters, clustered tables, and cluster indexes – for – clustered tables and cluster indexes – Altering clusters– Dropping clusters, clustered tables, and cluster indexes – managing hash cluster and clustered tables miscellaneous management for schema objects – creating views – renaming schema objects aritype tables, indexes and clusters – truncating tables and clusters – managing integrity constrains.

11.   Elements of PL/SQL

a) Main features – architecture – advantage of PL/SQL – fundamentals – character set – Lexical units – Data types – data type conversion – declarations – naming conventions – scope and visibility – assignments – expressions and comparisons – built – in functions – PL/SQL tables – user defined records.

b) Conditional control IF statement – sequential control GOTO and NULL statements.

c) SQL support – national language support – Remote Access – cursor management – transaction processing – database triggers.
d) Advantages of exceptions – predefined exceptions – user defined exceptions – how exceptions propagate – raising an exception – useful techniques.
e) Advantages of subprograms – procedures – Functions RETURN statement – forward declarations – actual versus formal parameters – positional and named notation parameter modes – parameter default values – overloading recursion – stored subprograms.
f) Database triggers

12. Advanced PL/SQL

a) Advantages of packages – the package specification – the package body – overloading – calling packaged subprograms – package state and dependency – package standard.

REFERENCE BOOKS

1. Understanding ORACLE   - James T. Peary & Joseph G. Laseer.

2. RDBMS with ORACLE   - Rolland.

3. ORACLE series books of ORACLE Press   – TMH.

13.   Starting out with Oracle – Covering Databases -- John Day & CraigVan
        SQL, PL/SQL, Developer Tools & DBA   Slyke, Dreamtech
                                                                        Press

5. Relational Database Management Systems -   ISRD Group, TMH

Subject wise modification table for restructuring of the syllabus.

Branch:- COMPUTER ENGINEERING

Sub-Code as per C-05	CM-406	Sub-Code as per C-09	CM-306
Name of the subject as per C-05	Data Structures Lab	Name of the subject as per C-09	Data Structures Lab
No. of periods allotted as per C-05	90	No. of periods allotted as per C-09	60

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	Introduction to Data Structures	05	-	-	05	-
2	Linear Data Structures	30	More programs are added	-05	25	Covered in the theory hence has to be implemented in the lab
3	Non linear Data Structures	35	Traversal operations added	-20	15	Covered in the theory hence has to be implemented in the lab
4	Sorting	15	Each sorting made separate exercise	-5	10	-
5	Searching	05	Each sorting made separate exercise	-	05	-
	T O T A L	90		-30	60	

DATA STRUCTURES LAB

Subject Title   **: Data Structures Lab**
Subject Code   **: CM – 306**
Periods per Week   **: 04**
Periods per Semester: 60

LIST OF EXCERCISES

1. Exercises on creation, insertion, deletions & display of elements in a singly linked lists

14. Write a program to implement a singly circular linked list

3. Exercises on creation, insertion, deletions & display of elements in a doubly linked lists

4. Write a program to Implement a stack

5. Write a program to implement a queue

6. Write a program to create a sparse matrix

7. Write a program to create a binary tree & its traversal operations

8. Exercise on Selection sort

9. Exercise on insertion sort

10. Exercise on bubble sort

11. Implement a program for merge sort on two sorted lists of elements

12. Exercises on linear search

13. Exercise on binary search

Subject wise modification table for restructuring of the syllabus.

Branch………… COMPUTER……………………………………ENGINEERING

Sub-Code as per C-05	CM-308	Sub-Code as per C-09	CM-307
Name of the subject as per C-05	Digital Electronics Lab	Name of the subject as per C-09	**Digital Electronics Lab**
No. of periods allotted as per C-05	45	No. of periods allotted as per C-09	45

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	Logic Gates, Flip-Flops & Registers	25	-	00	25	No Change
2	Combinational Circuits & Memories	20	-	00	20	-
	T O T A L	45		00	45	

DIGITAL ELECTRONICS LAB

Subject Title   : **Digital Electronics Lab**
Subject Code   : **CM – 307**
Periods per Week   : **03**
Periods per Semester : **45**

LIST OF EXPERIMENTS

1.   Verification of truth tables of basic logic gates
        (AND,OR,NOT,EX-OR,EX-NOR)

2.   Verification of truth tables of Universal gates (NAND & NOR)

3.   Realization of basic gates (AND, OR,NOT) using NAND only, NOR only.

4.   Verification of Demorgan's laws.

5.   Construct the circuits of Half-Adder and Full-Adder and verify their
        function.

6.   Verify the truth tables of RS, JK,T, D Flip Flops.

7.   Construct and verify the truth table for asynchronous binary, decade
        counters using JK flip-flop.

8.   Construct and verify for the synchronous binary and decade counter
        using JK   flip-flop.

9.   Verification of truth table for any one Universal shift register.

10.   To study the functioning of encoder, decoder, multiplexer and
demultiplexer.

11.   Setup a circuit of a single decimal 4-bit BCD and vice-versa using gates.

12.   Setup a circuit for displaying hexadecimal code on a 7 segment.

13.To verify truth table and to study the operation of tri-state output buffer.

Subject wise modification table for restructuring of the syllabus.

Branch………… COMPUTER…………………………………ENGINEERING

Sub-Code as per C-05	CM-306	Sub-Code as per C-09	CM-308
Name of the subject as per C-05	Electronic Workshop Practice	Name of the subject as per C-09	Electronic Workshop Practice
No. of periods allotted as per C-05	45	No. of periods allotted as per C-09	45

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	Soldering	10	No change	-	10	No change in syllabus
2	Study and use of Electronic Equipment	10	Do	-	10	-Do-
3	Testing of Components	10	Do	-	10	-Do-
4	Familiarization of PCB materials & fabrication	15	Do	-	15	-Do-
	T O T A L	45		-	45	

ELECTRONIC WORKSHOP PRACTICE

Subject Title   **:**   **Electronic Workshop Practice**

Subject Code   **:**   **CM – 308**

Periods per Week   **:**   **03**

Periods per Semester   **:**   **45**

LIST OF EXPERIMENTS

15.   **Soldering**

1.1   Familiarization and use of various soldering tools, Components & different cables.

1.2   Assembly and disassembly using soldering irons.

1.3   Use of different types of soldering irons.

1.4   Use of solder squeezer on electronic PCBS.

1.5   Use of instant soldering gun.

1.6   Soldering simple electronic circuit with discrete components and Ics.

1.7   Soldering on printed circuit boards using passive and active components.

1.8   Soldering DIP switches and fuse carries on PCBS.

2.0   **Study And Use Of Electronic Equipment**

2.1   Familiarize with the symbols of Electronic circuit components by drawing.

2.2   Measurement of AC/DC Voltages and currents using voltmeters and current metes.

2.3   Measurement of voltages, currents and resistance using analog and digital millimeters and continuity test.

2.4   Study and use of AF/RF signal generators.

2.5   Study and use of C.R.O. single trace & double trace for measuring frequency and amplitude.

2.6   Study and use of various regulated power supply units.

3.0   **Testing Of Electronic Components**

3.1 Measure the value of resistor using ohm meter / multi meter and compare with the color code value.

3.2 Test and measure the value of capacitor using R.L.C. meter and compare with the marked / color code value.

3.3 Test the given transformer and measure D.C. resistance & Voltages by using multi meter.

3.4 Test the given loud speaker and measure the voice coil resistance using multi meter.

3.5 Test the working of different types of switches, relays, connectors and cables.

3.6 Identification of leads and testing of different diodes and transistors.

3.7 Arrange the Public Address system and test the performance.

4.0 Familiarization Of PCB Materials And Fabrication Of PCB.

4.1 Draw the PCB layout and a component layout for a simple electronic circuits like H.W.R./F.W.R./single stage amplifier.

4.2 Prepare a PCB for a simple circuit.

4.3 Assembly and testing of the above circuit.

Subject wise modification table for restructuring of the syllabus.

Branch……COMPUTER ENGINEERING

Sub-Code as per C-05	CM-507	Sub-Code as per C-09	CM-309
Name of the subject as per C-05	RDBMS & VB Lab	Name of the subject as per C-09	RDBMS Lab
No. of periods allotted as per C-05	90 (45 + 45)	No. of periods allotted as per C-09	45

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
01	Concept of DBMS & RDBMS	--	--	--	--	It is made as separate subject in the C-09
02	Concept of SQL	15	--	--	15	-- do --
03	Management of Schema Objects	10	---	--	10	-- do --
04	PL./SQL	10	--	--	10	-- do --
05	Advanced PL/SQL	10	--	--	10	-- do --
	T O T A L	45		00	45	

RDBMS LAB

Subject Title   :   **RDBMS LAB**
Subject Cod e   :   **CM- 309**
Periods per week   :   **03**
Periods per Semester   :   **45**

1   Know installation of Oracle
2   Exercise on creating tables
3   Exercise on inserting records
4   Exercise on updating records
5   Exercise on modifying the structure of the table
6   Exercise on Select command
7   Exercise on querying the table using clauses like WHERE, ORDER, IN, AND, OR, NOT
8   Exercise on creating and deleting of indexes
9   Exercise on various group functions
10   Exercise on Number functions, character functions, conversion functions and date functions
11   Exercise on set operators
12   Exercise on sub queries
13   Exercise on Joins
14   Exercise on various date and number format models
15   Exercise on Sequences
16   Exercise on synonyms
17   Exercise on views
18   Exercise on creating tables with integrity constraints
19   Write programs using PL/SQL control statements
20   Exercise on PL/SQL cursors
21   Exercise on PL/SQL exception handling
22   Exercise on Procedures
23   Exercise on Functions
24   Exercise on Recursion
25   Exercise on Triggers
26   Exercise on Packages
27   Exercise on Database Backup.

Subject wise modification table for restructuring of the syllabus
Branch…… **Computer Engineering**

Sub-Code as per C-05	---------	Sub-Code as per C-09	**CM-310**
Name of the subject as per C-05	--------	Name of the subject as per C-09	**English Communication Skills Level- I**
No. of periods allotted as per C-05	----------	No. of periods allotted as per C-09	**45**

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	**Unit I** Listening Activity; *Listening for information Speaking Activity; *Greeting & leave taking	---	---	---	9	Is need based
2	**Unit II** Listening Activity; *Listening for details *Listening for drawing inferences; Speaking Activity *Making complaints – Formal and Informal	----	---	---	9	Is need based
3	**Unit III** Listening for details Speaking activity: making suggestions	--	--	--	9	Is need based
4	**Unit IV** Listening Activity ; Looking for Specific information Speaking Activity ; *Stating opinions	--	--	--	9	Is need based
5	**Unit V** Listening Activity ; *Preparing CV Speaking Activity ; *Introducing oneself ;*Facing Viva-Voce	--	--	--	9	Is need based
	TOTAL				**45**	

ENGLISH COMMUNICATION SKILLS LABORATORY–LEVEL I

Subject Title : **English Communication Skills Laboratory –Level I**
Subject Code : **CM-310**
Periods/Week : **03**
Periods per semester : **45**

Introduction:

The course will cater to the need of improving communicative competence. The course would give the students practice in listening and speaking.

TIME SCHEDULE

Unit No	Major Topics	No. of Periods	Weightage of Marks **
1	**Unit I** Listening Activity; *Listening for information Speaking Activity; *Greeting & leave taking	9	10
2	**Unit II** Listening Activity; *Listening for details *Listening for drawing inferences; Speaking Activity *Making complaints – Formal and Informal	9	10
3	**Unit III** Listening for details Speaking activity: making suggestions	9	10
4	**Unit IV** Listening Activity ; Looking for Specific information Speaking Activity ; *Stating opinions	9	10
5	**Unit V** Listening Activity ; *Preparing CV Speaking Activity ; *Introducing oneself ;*Facing Viva-Voce	9	10
Total		**45**	**50**

**Weightage of Marks : Tasks to test listening skills
Tasks to test speaking skills through role plays describing processes, objects etc. and group discussions

Objectives:

On completion of the course the student should be able to

- Improve their listening skills
- Improve their speaking skills

Course Contents:

- Activities that improve situational interaction
- Activities that improve cooperative learning and soft skills.

Course Material:

The Communications Skills laboratory Manual presently in use may be continued by choosing the first five Units. The manual is supported by CD for audio output.

Scheme of Examination:

Name of Subject	Instruction periods per week	Total periods per Semester	Scheme of Examination			
			Duration	Sessional marks	End Exam marks	Total
Eng Com Skills Level I	3	45	3 Hours	20	30	50

IV SEMESTER

Subject wise modification table for restructuring of the syllabus.

Branch:-   COMPUTER ENGINEERING

Sub-Code as per C-05	CM-403	Sub-Code as per C-09	CM-401
Name of the subject as per C-05	Operating Systems	Name of the subject as per C-09	Operating Systems
No. of periods allotted as per C-05	90	No. of periods allotted as per C-09	60

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	Introduction to operating systems	10	System calls definition added	-	10	Required
2	Process Management	25	-	-5	20	More periods allotted
3	Storage Management	20	Allocation of frames and Concepts of working Set Model are deleted	-6	14	Corresponding hours removed which not required
4	Secondary Storage management	20	-	-12	08	More periods allotted which actually not required
5	Files & Protection	15	-	-7	08	More periods allotted which actually not required
	T O T A L	90		-30	60	

OPERATING SYSTEMS

Subject Title : **Operating Systems**
Subject Code : **CM– 401**
Periods per Week : **04**
Periods per Semester : **60**

TIME SCHEDULE

Sno	Major topics	Periods	Weightage of marks	Short Questions	Essay Questions
1	Introduction to Operating System	10	16	2	1
2	Process Management	20	42	4	3
3	Storage management	14	26	2	2
4	Secondary storage management	8	13	1	1
5	Files and Protection	8	13	1	1
	Total	**60**	**110**	**10**	**08**

OBJECTIVES

16.   Know about basics of operating systems.

1.1   Define an operating system.
1.2   Discuss history of operating system
1.3   Know about various operating systems.
1.4   Know the concept of spooling and buffering.
1.5   Explain the concepts like multiprogramming and timesharing.
1.6   Know about distributed and real time systems.
1.7   Know about multiprocessor systems.
1.8   Understand the operating system components.
1.9   Discuss operating system services.
1.10   Define system call with an example
1.11   Know about different types of system calls.
1.12   Know about single, multi user operating system structure.

17.   Understand process management.

2.1   Define processes.
2.2   Understand a) sequential process b) process state diagram c) process control block.
2.3   Know process creation and termination.
2.4   Understand the relation between processes.
2.5   Understand threads and multithreading
2.6   Know the scheduling concepts.
2.7   Know about scheduling queues and schedulers.
2.8   Explain C.P.U. scheduling and scheduling criteria.
2.9   Know the various scheduling algorithms –FIFO, SJF, Round robin, Time sharing, Multilevel scheduling, Multilevel feedback Queue scheduling
2.10 Understand semaphores.
2.11 Know about inter process communication.
2.12 Define a deadlock.
2.13 State the necessary conditions for arising deadlocks.
2.14 Know the various techniques for deadlock prevention.
2.15 Discuss briefly deadlock avoidance and detection.
2.16 Know about recovering from deadlock.

18.   Understand the storage management.

3.1   Discuss briefly address binding, dynamic loading, dynamic linking, & overlays.
3.2   Discuss briefly on swapping.
3.3   Discuss single partition allocation.
3.4   Discuss multiple partition allocation.
3.5   Discuss briefly paging concepts.
3.6   Discuss briefly segmentation.
3.7   Define virtual memory techniques.
3.8   Describe briefly demand paging.
3.9   Know about page replacement.
3.10 Discuss briefly on page replacement algorithms- FIFO, LRU, Optimal
3.11 Know the concept of thrashing.
3.12 Page fault frequency

4.0   Understand the secondary storage management.

4.1   Explain disk structure.

4.2   Understand free space management.
4.3   Know various allocation methods
4.4   Know about various disk scheduling algorithms- FCFS, SST, Scan,

C-Scan, Look.

5.0   Understand file system and protection.

19.   Define file management.

    5.2   List and explain various file operations.
    5.3   List and explain various access methods.
    5.4   Understand directory structure organization.
    5.5   Understand the concept of file protection.

COURSE CONTENTS

1. Introduction to operating system

Introduction – History of operating system – Operating system concepts – Operating system structure – Overview of operating system functions.

2. Processor management

Introduction to processor – Job programs – Job scheduling – Process scheduling – Process synchronization – Process communications – Deadlocks.

3. Storage management

Memory management – Paging – Swapping – Virtual and Cache memory – Page replacement algorithms – Paging system.

4. Secondary storage management

Disk structure – Free space management – Allocation methods – Scheduling methods – Hierarchy.

20.   File systems

Introduction to file systems – File system design – File servers – Security – Protection mechanism.

REFERENCE BOOKS

1.   Operating Systems   -- Silberschatz and Galvin

2.   Operating Systems   -- Dietel and Dietel

3.   Operating Systems   -- Dhamdhere (TMH)

4.   Advanced Operating Systems   -- Tananbaum .

Subject wise modification table for restructuring of the syllabus.

Branch:-   COMPUTER ENGINEERING

Sub-Code as per C-05	CM- 405	Sub-Code as per C-09	CM-402
Name of the subject as per C-05	Computer H/W & Maintenance	Name of the subject as per C-09	Computer H/W & Networking
No. of periods allotted as per C-05	75	No. of periods allotted as per C-09	75

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	PC H/W Components	10	Important beep codes, connectors / disadvantages of OS, Configuration and : protection of data shifted to second chapter	-	10	Compensated
2	System Board	20	-	-5	15	More periods allotted which is not required
3	Managing Storage devices	20	,Flash memories & Optical memories / 3.1 to 3.4	-10	10	Compensated along with topics removed
4	Troubleshooting fundamentals	25	Antistatic tools, surge protection and Battery back up, all UPS's are reorganized	-10	15	Topics required and periods are sufficient
5	Introduction to networks & Topologies	-	Required Topics from 1.0 of CM-401 are included	+10	10	Newly Allotted periods are sufficient for the topics selected
6	LAN Components & Network Addressing	-	Required Topics from 2.0 and 3.0 of CM-401 are included	+15	15	Newly Allotted periods are sufficient for the topics selected
	Total	75		00	75	

COMPUTER HARDWARE & Networking

Subject Title   : Computer Hardware & Networking
Subject Code   : CM- 402
Periods per Week   : 05
Periods per Semester : 75

TIME SCHEDULE

Sno	Major topics	Periods	Weightage of marks	Short questions	Essay questions
1	PC hardware components	10	13	1	1
2	System Board	15	26	2	2
3	Managing Storage devices	10	16	2	1
4	Troubleshooting Fundamentals	15	26	2	2
5	Introduction to networks and topologies	10	13	1	1
6	LAN Components and network addressing	15	16	2	1
	Total	**75**	**110**	**10**	**08**

OBJECTIVES

1.0 PC hardware and software Components.

    1.1   Hardware used for I/P, O/P & inside computer case, system board components used for communication among devices
    1.2   Software - 3 types of Software,ROM BIOS, OS, application software
    1.3   Functions of BIOS
    1.4   The boot process
    1.5   POST and important beep codes
    1.6   Know about different connectors.

2.0 System Board
    2.1 Types of system boards
    2.2 The CPU & the chipset – CPU form factor, CPU slots and sockets

2.3   Different types of RAM
2.4   Buses – ISA, MCA, EISA, USB, Firewire, AGP,PCI
2.6   Setting the CPU & Bus speeds.
2.7   CMOS setup and data protection.

3.0   Managing Storage devices

3.1   Know about Semiconductor Memories – RAM,ROM on System
        Board
3.2   Main Memory – SIMMs, DIMMs, Other RAM Technologies
3.3   Hard drives – hard drive technology – IDE, EIDE, SCSI,SATA.
3.4   Hard drive partitions
3.5   Troubleshooting hard drives & data recovery
3.6   Optimizing Hard drive – disk cleanup, disk fragmentation. Disk
        backup
3.7   Know about Flash memories.
3.8   Know Functional units of optical memories(CD-ROM, DVD ROM
etc)

4.0   Troubleshooting Fundamentals

4.1   Troubleshooting tools – Bootable rescue disk, diagnostic software,
virus
        detection software, Anti-Static tools
4.2   How to isolate computer problems
4.3   Troubleshooting guidelines – Power system, system board, OS &
hard
        drive, Optical drives,keyboard ,Monitor and printer problems.
4.4   Surge protection & battery backup
4.5   Stand by UPS, Inline UPS, Line-interactive UPS, intelligent UPS.

5.0   Introduction to Networks and Topologies.
5.1 Understand the Overview of Networking.

5.2 State the Need for Networking.
5.3 Classification of Networks –LAN,MAN,WAN
5.4 List the Hardware and Software Components.
5.5 Various Network Communication Standards.
        5.5.1 OSI Reference Model.
        5.5.2 TCP/IP Reference Model.
5.6 Understand the Overview of Network Topologies.

5.7 Know Basic Topologies such as Bus, Ring, Star and Hybrid

6.0   LAN Components and Network Addressing
6.1 Know about LAN Cables and Connectors, wireless network adapter

6.2 Know about Coaxial Cables, Twisted-Pair Cables, Optical Fiber
        Cables, and Connectors.
6.3 Explain LAN Devices
        6.3.1 Repeaters
        6.3.2 Hubs

6.3.3 Switches
6.3.4 Network Interface Cards (NICs)
6.3.5 Routers (CISCO, DAX, Etc.)
6.3.6 Modem (56KBPS Internal or External, ADSL Modems,Etc.)
6.4 Introduction to Network Addressing.
6.5 Know about TCP/IP Addressing Scheme.
6.5.1 Components of IP Address.
6.5.2 IP Address Classes.
6.5.3 IP Subnetting
6.6 Know about protocols
6.6.1 Hyper Text Transfer Protocol (HTTP)
6.6.2 File Transfer Protocol (FTP)
6.6.3 Simple Mail Transfer Protocol (SMTP)
6.6.4 Telnet

COURSE CONTENTS

1. PC hardware and software Components.

 Boot Process –BIOS- POST- Connectors

2.System Board

Various Types of Buses – ICA – MCA – EICA – Setting the CPU and Bus Speeds

3.Mangaing and Storage Devices

 Hard Drives – IDE – EIDE – SCSI ,SATA- Optical Drives

21.   Troubleshooting Fundamentals

 Troubleshooting – Power Systems – System Board – OS – Hard Drive – Optical Drives - Key Board –Monitor –printers

22.   Introduction to Networks and Topologies.
   Need for network-Network classification- network standards- topologies

23.   LAN Components and Network Addressing

   Network components- connectors-network devices- network addressing- Network protocols.

REFERENCE BOOKS

1.	Enhanced Guide to Managing And Maintaining Your PC	--	Jean Andrews (Thomson)
2.	Basics of Networking	--	NIIT PHI publication
3.	PC Hardware A Beginners Guide	--	Gilster (TMH)
4.	PC Upgrading	--	Stephen Bigelow (TMH)
5.	Trouble Shooting Your PC	--	Stone & poor
6.	Computer Networks	--	Andrew S. Tanenbaum
7.	Computer Installation & Servicing	--	D. Balasubramaniam

Subject wise modification table for restructuring of the syllabus.

Branch:-   COMPUTER ENGINEERING

Sub-Code as per C-05	CM-505	Sub-Code as per C-09	CM-403
Name of the subject as per C-05	OOP's Through C++	Name of the subject as per C-09	OOP's Through C++
No. of periods allotted as per C-05	75	No. of periods allotted as per C-09	60

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	Concept of OOP's methodology	20	Virtual Functions	-2	18	More hours allocated
2	Arrays, pointer & references	15	-	-5	10	Concepts of Array and pointers are already covered in I year
3	Classes & Inheritance	15	-	-1	14	Extra hour
4	C++ I/O	15	Virtual functions deleted	-5	10	Unnecessary hours on I/O
5	Templates	10	-	-2	8	Extra hours
	T O T A L	75		-15	60	

OOPS THROUGH C++

Subject Title   **: OOPS through C++**
Subject Code   **: CM- 403**
Periods per Week   **: 04**
Periods per Semester **: 60**

TIME SCHEDULE

S.No	Major Topics	Periods	Weightage Of Marks	Short Questions	Essay Questions
1.	Object oriented programming methodology Introduction to C++	18	42	4	3
2.	Arrays ,Pointers, references	10	13	1	1
3.	Classes and Inheritance	14	29	3	2
4.	C++ I/O	10	13	1	1
5.	Templates	08	13	1	1
	Total	60	110	10	8

OBJECTIVES

24.   **Understand the concept of OOP methodology.**

      1.1   Appreciate the evolution of OOP's
      1.2   State the **principle** of **object oriented language**
      1.3   Explain OOP's properties like **encapsulation, polymorphism**
      1.4   Know how to create, compile, link and execute a C++ program
      1.5   Differentiate **C** and **C++**
      1.6   Give the structure of C++ program
      1.7   Explain C++ **I/O operation** examples
      1.8   Know how to write **comment statements** in C++
      1.9   List out **keywords** of C++ other than C
      1.10   Define a **class** & **object** of C++
      1.11   Know the class **constructor** and **destructor**
      1.12   Know the declaration, definition, and usage of **classes**
      1.13   Explain a **friend function** and its necessity
      1.14   Compare classes, structures
      1.15   Know the declaration and advantages of **inline functions**
      1.16   Know the **creation of objects**
      1.17   Passing objects to functions
      1.18   Returning objects from functions
      1.19   Write small programs using the above concept
      1.20   Explain the concept of **operator overloading** with some examples
      1.21   Know the concept of **virtual functions** and its applications
      1.22   Explain the concept of **function overloading**

2.0   Understand arrays, pointers and references
    2.1   Know the declarations and accessing of **array of objects**
    2.2   Illustrate the above with small programs
    2.3   Know the declaration, accessing of **pointers to objects**
    2.4   illustrate the above with small programs
    2.5   Know the usage of **this** operator
    2.6   Explain the operation of dynamic memory allocation using **new** and **delete** operators.
    2.7   Know the declarations and uses of **references**

3.0   Understand derived classes and inheritance
    3.1   Stress the necessity for **inheritance**
    3.2   Know the relation between **base class** and **derived class**
    3.3   Give the format / syntax for defining a derived class
    3.4   Explain the three types of access control – **public, private** & **protected**
    3.5   Explain **types of inheritances** with examples and virtual base classes
    3.6   Write small programs to illustrate the above concepts

4.0   Understand the C++ I/O
    4.1   List the **C++ I/O operators** and give their meaning
    4.2   Know the basics of **formatted I/O**
    4.3   Explain **I/O manipulators** and give at least five examples
    4.4   Know the file I/O and classes of stream.h
    4.5   Explain the binary I/O functions like **get( )** and **put( )**
    4.6   Give the format and working of file I/O functions like **open( ), read( ), write( ), count( )** etc

25.   Templates
    5.1   Explain the need for **Templates**
    5.2   List the types of Templates
    5.3   Function Templates
        5.3.1   Templates with Single Argument Types
        5.3.2   Creating function based Templates
        5.3.3   Templates with multiple argument types
    5.4   Class Templates
        5.4.1   Syntax
        5.4.2   Creating Classes based on Template
        5.4.3   Class Template for Stack Data Structure

COURSE CONTENTS

1. **OOP methodology :** Principle, properties, portability and standards. **Structure of C++ programs.** I/O Operations, statements, keywords. Class/object functions, classes & structures, operator overloading, virtual function, function overloading.

2. **Arrays, pointers and References:** Using of Arrays, Pointers and references, dynamic memory allocations.

3. **Derived classes and inheritance:** Class and derived class, access control inheritance, virtual base class

4. **C++ I/O operations :** formatted I/O ,I/O manipulators, file I/O binary I/O functions, file I/O functions.

5. **Templates :** Need for Templates – classification of templates.

REFERENCE BOOKS

1.   Teach your self C++   - Helbert schildt Osborne McG

2.   Object-oriented Programming with C++   - Poornachandra Sarang PHI

3.   Programming with C++   - E. Balaguruswamy – TMH

4.   Computer Science: A Structured Approach using C++ --

                                               -Forouzan/Gillberg - Thomson

5.   C++ & OOPS Paradigm   - Debasish Jana PHI

Subject wise modification table for restructuring of the syllabus.

Branch……COMPUTER ENGINEERING

Sub-Code as per C-05	CM-404	Sub-Code as per C-09	CM-404
Name of the subject as per C-05	Microprocessors	Name of the subject as per C-09	Microprocessors
No. of periods allotted as per C-05	75	No. of periods allotted as per C-09	75

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
01	Introduction & Architecture	10	-	-	10	-
02	Instruction set, Memory and I/O Interfacing	10	Language Development Tools are added Semiconductor Memories are deleted	+5	15	Deleted Topics are in Computer Hardware & Networking
03	Interrupts, Assembly Language Programming	20	-	-	20	-
04	Peripheral devices and Interfacing	20	-	-	20	-
05	Intel 80x86 family Processors	15	80186 Family Deleted	-5	10	Obsolete
	T O T A L	75		00	75	

MICROPROCESSORS

Subject Title : Microprocessors
Subject Code : CM– 404
Periods per Week : 05
Periods per Semester : 75

TIME SCHEDULE

Sno	Major topics	Periods	Weightage of marks	Short questions	Essay questions
1	Introduction & Architecture	10	11	2	1/2
2	Instruction set, Memory and I/O Interfacing	15	26	2	2
3	Assembly Language Programming	20	31	2	21/2
4	Peripheral devices and Interfacing	20	29	3	2
5	Intel 80x86 family Processors	10	13	1	1
	Total	**75**	**110**	**10**	**08**

OBJECTIVES

1.0 Understand the architecture of 8086 microprocessor.

    1.1   Define Micro computer, Microprocessor
    1.2   Describe how a micro computer fetches and executes an instruction
    1.3   8086 internal architecture (List registers and other parts in 8086 Execution unit and bus interface unit)
    1.4   Describe functions of 8086 queue
    1.5   Demonstrate how 8086 calculates memory addresses
    1.6   Pins and signals of INTEL 8086
    1.7   Bus cycles and timing diagram

2.0 INSTRUCTION SET OF 8086

    2.1   Draw the generalized Instruction format of 8086
    2.2   Explain Addressing modes of 8086 with examples
    2.3   Classify the Instruction set of 8086
    2.4   Understand the data transfer instructions of 8086.

2.5   Understand the Arithmetic instructions of 8086.
2.6   Understand the Logic instructions of 8086.
 2.7   Understand the processor control instructions of 8086.
2.8   Understand the instructions affecting flags of 8086.
2.9   Understand the control transfer (branching) instructions of 8086.
2.10   Understand the String manipulation instructions of 8086.
2.11   Describe assembler directives
2.12   Describe the use of various assembly language development tools
           like Editor, Assembler, Linker, Locator and Debugger.

3.0   ASSEMBLY LANGUAGE PROGRAMMING

3.1   An introduction to assembly language Programming
3.2   Describe the procedure for executing assembly language program
           with an assembler
3.3   Write simple assembly language programs
3.4   Illustrate examples to solve IF-THEN, IF-THEN-ELSE, multiple IF-
           THEN-ELSE and REPEAT-UNTIL type programs.
3.5   Explain Subroutine or Procedure programming
3.6   Illustrate Procedure   CALL , RETURN and parameter passing.
3.7   Give simple program using procedure and parameters passing.

4.0   PERIPHERAL DEVICES AND INTERFACING

4.1   Introduction to peripherals and interface
4.2   Parallel data communication interface
           4.2.1   Parallel data transfer schemes
           4.2.2   Programmable peripheral interface – INTEL 8255
           4.2.3   DMA data transfer scheme
           4.2.4   DMA controller – INTEL 8257
4.3   Serial data communication interface
           4.3.1   Serial data communication
           4.3.2   USART – INTEL 8251 A
4.4   Keyboard and display interface
           4.4.1   Keyboard interface using ports
           4.4.2   Display interface using ports
           4.4.3   Keyboard/Display controller – INTEL 8279
           4.4.4   Keyboard and display interface using 8279

5.0   INTEL 80X86 FAMILY OF PROCESSORS

5.1   Introduction 80286 processor and architecture
5.2   Intel 80386 Microprocessor and architecture
5.3   Intel 80486 Microprocessor and architecture
5.4   Pentium Microprocessor
           5.4.1   Pins and signals of Pentium Processor
           5.4.2   Architecture of Pentium Processor
5.5   Advanced Pentium processors
           5.5.1   Pentium pro

COURSE CONTENT

1.0 Introduction and Architecture

Define Micro computer, Microprocessor- how a micro computer fetches and executes an instruction -8086 internal architecture – functions of 8086 queue-how 8086 calculates memory addresses-Pins and signals of INTEL 8086-Bus cycles and timing diagram

26. INSTRUCTION SET OF 8086

Introduction - Instruction format   -Addressing modes of 8086   -Instruction execution time-   Instruction affecting flags -   Data transfer instructions - Arithmetic instructions   - Logical instructions   -String manipulation instructions - Understand the control transfer (branching) instructions of 8086-String manipulation instructions – assembler directives- various assembly language development tools.

27. ASSEMBLY LANGUAGE PROGRAMMING

Assembly language programming- executing assembly language program with assembler- examples to solve IF-THEN, IF-THEN-ELSE, multiple IF-THEN-ELSE and REPEAT-UNTIL type programs- illustrating procedure CALL and RETURN, parameter passing and procedure passing.

4.0 PERIPHERAL DEVICES AND INTERFACING

Introduction to peripherals and interface-Parallel data transfer schemes-Programmable peripheral interface – INTEL 8255-DMA data transfer scheme-DMA controller – INTEL 8257-Serial data communication-USART – INTEL 8251 A –Keyboard and Display controller – INTEL 8279

28. INTEL 80X86 FAMILY OF PROCESSORS

Introduction   - Architecture of Intel 80286 -   Architecture of 80386 Microprocessor -   Intel 80486- Microprocessor   Architecture Pentium Microprocessor   -Pins and signals of Pentium Processor -   Architecture

of Pentium Processor   Advanced Pentium processors - Pentium pro - Pentium II -   Pentium III-   Pentium IV

REFERENCE BOOKS

1.   Microprocessor & Interfacing   --   Douglas V.Hall

2.   X86 microprocessor programming -- Venugopal and Rajkumar, TMH

3. Advanced Microprocessor and Peripherals   --   A K RAY, K M Bhurchandi , TMH

Subject wise modification table for restructuring of the syllabus.

Branch……COMPUTER ENGINEERING

Sub-Code as per C-05	CM-504	Sub-Code as per C-09	CM-405
Name of the subject as per C-05	VISUAL BASIC PROGRAMMING	Name of the subject as per C-09	. NET PROGRAMMING
No. of periods allotted as per C-05	75	No. of periods allotted as per C-09	60

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
01	Introduction to VB	5	Subject updated by introducing the .NET programming methods	-	5	Topics Restructured to introduce .NET frame work
02	Designing user interface, Menus and Common dialogue control	20	-- do --	-5	15	No of periods adjusted
03	Programming fundamentals	10	-- do --	-	10	-
04	MDI applications and graphics displaying and printing information	15	Fundamentals of Fonts & Character setting deleted	-10	5	Deleted to accommodate for the new topics in . NET
05	Database programming and Object linking and Embedding	25	Chapter is deleted	-25	00	Deleted to accommodate .NET concepts
06	-	-	. NET assemblies and Web Forms added	+15	15	. NET Concepts introduced
07	-	-	Data Access with ADO.NET added	+10	10	-- do --
	T O T A L	**75**		**-15**	**60**	

Subject Title   **: . NET Programming**
Subject Code   **: CM - 405**
Periods per week **: 04**
Periods per Semester **: 60**

TIME SCHEDULE

S.No	Major Topics	Periods	Weightage Of Marks	Short Questions	Essay Questions
1.	Understand the basics of. NET Frame work	5	08	1	1/2
2.	Designing User Interface, Menus and common Dialog control	15	26	2	2
3.	Programming Fundamentals of VB.NET	10	21	2	1 1/2
4.	MDI applications and Graphics Displaying and printing Information	05	08	1	1/2
5.	. NET Assemblies and Web Forms	15	26	2	2
6.	Data Access with ADO.NET	10	21	2	1 1/2
	Total	**60**	**110**	**10**	**8**

OBJECTIVES

1.0 Understand the basics of. NET Frame work

  1.1 What is .NET Framework
  1.2 Component of .NET – CLR and Library
  1.3 Introduction to Visual Basic.NET
  1.4 Features of Visual Basic. NET
  1.5 Understand the Integrated development environment.
  1.6 Know the Visual Basic .NET working Environment and browse through
   various menus on the menu bar.
  1.7 Know about the help system.
  1.8 Know how to save debug and distribute VB.NET application

2.0 Designing the User Interface.
  2.1 Under stand the designing aspects of VB.NET forms.
  2.2 Know about the various elements of user interface.
  2.3 Discuss the properties of controls like text box, label, command
   button, check box and list box.

2.4 Know the designing a simple form and display the messages using the above controls.
2.5 Know the common properties of above controls.
2.6 Know how to enable, disable the controls and run the applications.
2.7 Know about control arrays
2.8 know about creation of Menus at design time using the menu design window.
2.9 Know how to control menus at run time.
2.10 Know how to create short cut keys for pull down menus.
2.11 Know about common dialogue control.

3.0   Programming Fundamentals Know the structure of VB.NET applications.
3.1 Know about variables, declarations and their types.
3.2 Know about user defined data types, scope of variables, life of variables.
3.3 Know about arrays, constraints
3.4 Write small programs on Arrays and Constraints.
3.5 Know about various control flow statements.
3.6 Write small programs using control flow statements.
3.7 Know about procedures and functions give examples for each.
3.8 Know the recursion concept in VB.NET
3.9 Know about Exception Handling in VB.NET

4.0   MDI applications and Graphics.
4.1   Understand Multiple Document Interface in VB
4.2   Discuss various built in Capabilities of MDI
4.3   Know how to create MDI applications.
4.4   Know how to load and unload child form.
4.5   Know the fundamentals of Graphics in VB.
4.6   Know about the role of Line and Shape controls in creating Graphics.
4.7   Discuss the advantages of graphic controls.
4.8   Know how to display the text in forms and picture boxes.
4.9   Know about formatting, numbers, date and time.
4.10 Know the fundamentals of printing, printer object.
4.11 Know about printing with print form methods.

5.0   . NET Assemblies and Web Forms
5.1   Know about .NET Assemblies
5.2   Know about shared assemblies
5.3   Creating Shared Assemblies.
5.4   Know about shared object
5.5   Configuring Client application to use new version of shared object.
5.6   Side – by – Side execution of two version of shared objects.
5.7   Benefits of .NET assemblies.
5.8   Introduction to Web Forms
5.9   Creating buttons, Text boxes, Labels and Literals in Web forms
5.10   Creating Place holders, hidden Field Control and Creating Upload

Controls Web forms

    5.11   Working with Check boxes, Radio buttons, Tables and Panels in Web forms

    5.12   Know how to use Images, List boxes, Drop-down lists, Hyper links and link buttons in Web Forms

6.0 Data Access with ADO.NET

7.1 Introduction to ADO.NET data objects

7.2 Accessing data with Server explorer

7.3 Accessing data with data adapters and data sets

7.4 Multiple Table Connection

7.5 Data binding with controls like Text Boxes, List Boxes, Data grid etc.

7.6 Navigating data source

7.7 Data Grid View, Data form wizard

7.8 Data validation

7.9 Connection Objects, Command Objects, Data Adapters, Dataset Class

7.10 Features and advantages with ADO.NET

COURSE CONTENTS

1.0 Understand the basics of. NET Frame work – What is .NET Framework - Component of .NET – CLR and Library - Introduction to Visual Basic.NET - Features of Visual Basic. NET - Understand the Integrated development environment - Know the Visual Basic .NET working Environment and browse through various menus on the menu bar - Know about the help system - Know how to save debug and distribute VB.NET application

2.0 Designing the user Interface – Design aspects of VB.NET forms – Elements of User Interface – Properties of Controls – Text box, Label, command button, check Box and list box – Designing forms and displaying messages using above controls. Common properties of the above controls – enable , disable controls – control arrays – Menus and common dialogue control – creating menus at design time using menu design window – control menus and runtime - create short cut keys for pull down menus – common dialogue control

3.0 VB.NET structure – variable declaration and types – User defined data types – scope and life of a variable – arrays- constraints,- writing small programs – control flow statements – writing programs using control flow statements – procedures and functions – recursion concept in VB.NET - Exception Handling in VB.NET

4.0 MDI application and graphics-Multiple Document Interface – Built in capabilities of MDI – creating MDI applications – Loading and unloading child forms – fundamentals of graphics in VB – Role of line and shape control s in

creating graphics – paint picture method – advantages of graphic controls Display and printing information – formatting numbers – date and time – Attributes of crystal report screens – fundamentals of printing, printer object – printing with print form method

5.0 . NET Assemblies and Web Forms - Know about .NET Assemblies – Know about shared assemblies - Creating Shared Assemblies - Know about shared object - Configuring Client application to use new version of shared object - Side – by – Side execution of two version of shared objects - Benefits of .NET assemblies - Introduction to Web Forms - Creating buttons, Text boxes, Labels and Literals in Web forms - Creating Place holders, hidden Field Control and Creating Upload - Controls Web forms - Working with Check boxes, Radio buttons, Tables and Panels in Web forms - Know how to use Images, List boxes, Drop-down lists, Hyper links and link buttons in Web Forms

6.0 Data Access with ADO.NET - Introduction to ADO.NET data objects - Accessing data with Server explorer - Accessing data with data adapters and data sets - Multiple Table Connection - Data binding with controls like Text Boxes, List Boxes, Data grid etc. - Navigating data source - Data Grid View, Data form wizard - Data validation - Connection Objects, Command Objects, Data Adapters, Dataset Class -   Features and advantages with ADO.NET

REFERENCE BOOKS

1. Visual basic.NET Programming   Steven Holzner Dream tech

 2. VB.NET PROGRAMMING BY   T. GADDIS (Dreamtech)

3. Microsoft Visual Basic. Net step by step   By Halvosrson (**PHI**)

4. OOP with Microsoft Visual Basic.Net   By Reynold Hacrtte (**PHI**)

5. Mastering VB   - Evangelous petroustsos -
                      BPB publications
6. Visual Basic from Ground Up   - Teach your self Visual Basic   - Techmedia
                      publications

Subject wise modification table for restructuring of the syllabus.

Branch:-   COMPUTER ENGINEERING

Sub-Code as per C-05	CM- 408	Sub-Code as per C-09	CM-406
Name of the subject as per C-05	Computer H/W & Maintenance lab	Name of the subject as per C-09	Computer H/W & Networking Lab
No. of periods allotted as per C-05	45	No. of periods allotted as per C-09	90

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	PC H/W Components	06	-		06	-
2	System Board	06	-		06	-
3	Managing Storage devices	08	Optical drives Installation is added	+07	15	In theory optical drives are included
4	Troubleshooting fundamentals	25	-		25	-
5	Introduction to networks & Topologies	-	-	+25	25	-
6	LAN Components & Network Addressing	-	NIC cards, UTP cables, Switch, Modem are included	+13	13	New chapter is added and is necessary
	Total	45		+45	90	

COMPUTER HARDWARE & NETWORKING LAB

Subject Title   **: Computer Hardware & Networking**
Subject Code   **: CM – 406**

Periods per Week   **: 06**
Periods per Semester   **: 90**

LIST OF EXPERIMENTS

1.   Identify motherboard components

2.   RAM identification, removal, installation.

3.   CMOS setup.

4.   Print a summary of your system Hardware.

5.   Upgrading memory.

6.   Hard drive, optical drive installation.

7.   How to recover lost data on hard drive.

8.   Trouble shooting keyboard ,monitor, printer-

    a) few keys   do not work.

    b) keyboard does not work at all.

    c) key continuous to repeat after being released.

    d) key produces wrong character.

    e) Power light (led) does not go on, no picture.

    f)   Power   LED light is on no picture power up .

    g) Power on but monitor display wrong character.

    h) Monitor flickers has wary lines.

    i)   Screen goes blank 30 seconds or minute after the keyboard is left untouched

9.   Printer Problems

    9.1   laser printer:

    a) Printer never leaves warm-up mode.

    b) Paper Jam message is displayed

    c) Printed messages are distorted

    9.2   DMP

          a) Print head moves back and forth but nothing prints.

b) Print self test works but printing from a computer application does not work etc.,

10. Installation of operating system

11. Installation of Network card.

12. Preparing the UTP cable for cross and direct connections using crimping tool.

13. Installation of a switch and connecting systems to a network switch.

14. Installation of a modem (internal, external or USB) and connecting to internet.

15. Using FTP for uploading and downloading files.

16. Installation and configuring the proxy server for internet access.

Subject wise modification table for restructuring of the syllabus.

Branch:-   COMPUTER ENGINEERING

Sub-Code as per C-05	CM-508	Sub-Code as per C-09	CM-407
Name of the subject as per C-05	C++ lab	Name of the subject as per C-09	C++ Lab
No. of periods allotted as per C-05	45	No. of periods allotted as per C-09	45

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	Concept of OOP's methodology	20	More no. of exercises added	--	20	Missed topics added
2	Arrays, pointer & references	05	Added Array & pointer	--	05	Exercise missed on Array of objects & pointers to objects added
3	Classes & Inheritance	10	Added Virtual base class	--	10	Inheritance separated as a separate exercise
4	C++ I/O	05	-	---	05	-
5	Templates	05	-	--	05	-
	T O T A L	45		--	45	

C++ Lab

Subject Title : **C++ Lab**
Subject Code : **CM - 407**
Periods per Week : **03**
Periods per Semester : **45**

LIST OF EXCERCISES

1.0   Object Oriented Programming with C++

1   Write programs using
    a) class definition & object
    b) constructor and destructor
    c) working with two/more classes using Friend function,
    d) inline function,

2 Write program to demonstrate the use of operator overloading on
    unary operator ++ & binary operators like + operator and << operator

3 Simple programs on array of objects and pointers to objects

4   Write programs using new, delete with classes

5   Simple programs illustrating use of all types of inheritances

 6   Program illustrating virtual base class

 7 Program illustrating virtual functions

29.   Programs using templates

Subject wise modification table for restructuring of the syllabus.

Branch……COMPUTER ENGINEERING

Sub-Code as per C-05	CM-407	Sub-Code as per C-09	CM-408
Name of the subject as per C-05	Microprocessors Lab	Name of the subject as per C-09	Microprocessors Lab
No. of periods allotted as per C-05	45	No. of periods allotted as per C-09	45

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
01	Introduction & Architecture	-	--	--	--	-
02	Instruction set, Memory and I/O Interfacing	5	--	--	5	No change
03	Interrupts, Assembly Language Programming	30	---	+5	35	More ALP added
04	Peripheral devices and Interfacing	10	Stepper Motor, DAC are deleted	-5	5	-
	T O T A L	45		00	45	

MICROPROCESSORS LAB

Subject Title   : Microprocessors
Subject Code   : CM–408
Periods per Week   : 03
Periods per Semester   : 45

List of Experiments

1. Write an assembly language program to add two numbers of 16-bit data

2. Write an assembly language program to subtract two numbers of 16-bit data

3. Write an assembly language program to add two numbers of BCD data

4. Write an assembly language program to multiply two numbers of 16-bit data

5. Write an assembly language program to divide 16-bit number with 8-bit number.

6. Write an assembly language program to search the largest number in an array

7. Write an assembly language program to sort the numbers in an array

8. Write an assembly language program to find LCM of two 16-bit data

9. Write an assembly language program for factorial of a number.

10. Write an assembly language program for generating Fibonacci series.

11. Write an assembly language program to search for a given pattern in a string

12. Write an assembly language program to reverse of a string

13. Write an assembly language program to display a message.

14. Write an assembly language program to move data from one location to another location.

15. Write a program for generating multiplication table for a given number

16. Write an assembly language program to count number of ones and zeros in a 8-bit number.

17. Write an Assembly language programs for keyboard and Display controller with 8279

Subject wise modification table for restructuring of the syllabus.

Branch……COMPUTER ENGINEERING

Sub-Code as per C-05	CM-507	Sub-Code as per C-09	CM-409
Name of the subject as per C-05	RDBMS & VB Lab	Name of the subject as per C-09	. NET PROGRAMMING Lab
No. of periods allotted as per C-05	90 (45 +45)	No. of periods allotted as per C-09	45

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
01	Introduction to VB	--	--	--	--	It is made as separate subject i.e .NET programming lab in the C-09
02	Designing user interface, Menus and Common dialogue control	10	--	--	10	-- do --
03	Programming fundamentals	15	--	-5	10	-- do --
04	MDI applications and graphics displaying and printing information	10	--	-5	05	-- do --
05	Database programming and Object linking and Embedding	10	--	-10	00	-- do --
06	-	-	. NET Assemblies and Web Forms	+10	10	-- do --
07	-	-	Data Access with ADO.NET	+10	10	-- do --
T O T A L		**45**		**00**	**45**	

. NET PROGRAMMING Lab

Subject Title   **:**   **. NET PROGRAMMING Lab**

Subject Cod e   **:**   **CM- 409**

Periods per week   **:**   **03**

Periods per Semester **:**   **45**

1. Exercise on all basic controls

2. Exercise on designing of form

3. Design a small application using appropriate commands

4. Exercise on menus at design time

5. Exercise on control menus at runtime

6. Exercise on modifying and deleting menu items

7. Write programs using arrays

8. Exercise on Control arrays

9. Write programs using control statements

10 Write programs using recursive concept

11 Exercise on multiple documents interface

12 Exercise on loading and unloading child forms

13 Exercise on graphics methods

14 Exercise on Line and Shape Controls

15 Exercise on creating reports

16 Exercise on Printer Object.

17 Exercise on assemblies

18 Exercise on web forms using buttons, text boxes, labels, literals

19. Exercise on web forms using check boxes, radio buttons, tables.

20. Exercise on web forms using images , hyperlinks

21. Exercise on data accessing in ADO.NET

22. Exercise on multiple table connection in ADO.NET

Subject wise modification table for restructuring of the syllabus
Branch…… **Computer Engineering**

Sub-Code as per C-05	---------	Sub-Code as per C-09	**CM-410**
Name of the subject as per C-05	--------	Name of the subject as per C-09	**English Communication Skills Level – II**
No. of periods allotted as per C-05	----------	No. of periods allotted as per C-09	**45**

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	**Unit VI** Listening Activity : *Making Comparisons Speaking Activity: *describing an event *Comparison and Contrast	--	--	--	9	Is need based
2	**Unit VII** Listening Activity *Drawing inferences Speaking Activity *Making Comparisons	--	--	--	9	Is need based
3	**Unit VIII** Listening Activity: & Speaking Activity:	--	--	--	9	Is need based
4	**Unit IX** Listening Activity: *Everyday English Speaking Activity: *Stating directions *Group discussions	-	---	---	9	Is need based
5	**Unit X** Listening Activity: *Everyday English continued Speaking Activity:	----	---	---	9	Is need based
	Total				**45**	

ENGLISH COMMUNICATION SKILLS LABORATORY–LEVEL II

Subject Title: **English Communication Skills**

Laboratory –Level II

Subject Code : **CM-410**
Periods/Week : **03**
Periods per semester : **45**

Introduction:

The course will cater to the need of improving communicative competence. The course would give the students practice in listening and speaking.

TIME SCHEDULE

S. No	Major Topics	No. of Periods	Weightage of Marks**
1	**Unit VI** Listening Activity : *Making Comparisons Speaking Activity: *describing an event *Comparison and Contrast	9	10
2	**Unit VII** Listening Activity *Drawing inferences Speaking Activity *Making Comparisons	9	10
3	**Unit VIII** Listening Activity: Speaking Activity:	9	10
4	Unit IX **Unit IX** Listening Activity: *Everyday English Speaking Activity: *Stating directions *Group discussions	9	10
5	Unit X **Unit IX** Listening Activity: *Everyday English continued Speaking Activity:	9	
	Total	**45**	**50**

**Weightage of Marks : Tasks to test listening skills
Tasks to test speaking skills through role plays describing processes, objects etc. and group discussions

Objectives:

On completion of the course the student should be able to

- Improve their listening skills
- Improve their speaking skills

Course Contents:

- Activities that improve situational interaction
- Activities that improve cooperative learning and soft skills.

Course Material:

The Communications Skills laboratory Manual presently in use may be continued by choosing Six to Ten Units. The manual is supported by CD for audio output.

Scheme of Examination:

Name of Subject	Instruction periods per week	Total periods per Semester	Scheme of Examination			
			Duration	Sessional marks	End Exam marks	Total
Eng Com Skills Level II	3	45	3 Hours	20	30	50

CM-501 INDUSTRIAL TRAINING

(Practical Training)

V SEMESTER

S.NO	Subject	Duration	Items	Max Marks	Remarks
1	Practical Training in the Industry	6 Months	1.First Assessment (at the end of 2nd month)	200	
			2. Second Assessment (at the end of 4th month)	200	
			3.Final Assessment (at the end of spell)	200	
			4. Log Book & Record	100	50 Marks Each
			5. Seminar	50	
TOTAL PER SEMESTER				*750*	

The industrial training shall carry 750 marks and pass marks is **50**%.A candidate failing to secure the minimum marks should complete it at his own expenses.

During Industrial training the candidate shall put in a minimum of 90%attendence.

DIPOLOMA IN COMPUTER ENGINEERING (CURRICULUM C-09)

V SEMESTER

(INDUSTRIAL TRAINING)

Duration : 6 months

OBJECTIVES

On completion of a spell of practical training in a industry, the student will be able to

1.0   Know organizational set up
   1.1   Know the function of each department/section
   1.2   Know the inter relationship among various
            department/sections

2.0   Know the various Computer Components and its related software.
   2.1   Understand the working of Computer Systems.

   2.2   Know the Installations and Uninstallations of various hardware
            components and software concerned.

   3.0 Understand the various stages involved in processing, sequential

   arrangement of different equipment.

   3.1   Draw the flow diagram, detail flow diagram of each process
   3.2   Understand the arrangement of various equipment and machinery in
            systematic manner in a less possible area of site.

4.0   Know the Development of algorithm and Programming Methodology

5.0   Know the trouble shooting of various peripherals
   5.1   Know preventive precautions of each equipment in the System
   5.2   Startup and shut down procedures for the equipment.
   5.3   Understand the virus management of the Systems.

6.0   Know the various techniques of DBMS

7.0   Know the various networking Methods.

8.0   Know System Administration of Servers

VI SEMESTER

Subject wise modification table for restructuring of the syllabus.

Branch **Computer Engineering**

Sub-Code as per C-05	CM-601	Sub-Code as per C-09	**CM-601**
Name of the subject as per C-05	IME	Name of the subject as per C-09	**IME**
No. of periods allotted as per C-05	90	No. of periods allotted as per C-09	75

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1.	Principles and functions of Management	6	nil	-1	5	Extra periods deleted
2.	Organisation structure & organisational behaviour	18	Job satisfaction, quality of work life, group dynamics, conflict resolution -deleted	-8	10	Not required for diploma students
3	Production Management	10	--	--	10	---
4.	Materials Management	12	Material handling equipment - deleted	-2	10	Repeated in TE-III
5.	Marketing ,Sales & Feasibility study	10	Advertisement topic deleted Elements of cost and break even analysis topics are transferred from 4th chapter	+2	12	1.Not required for diploma students 2. Added for continuity of subject.
6.	Industrial legislation & safety	12	Industrial dispute act , Workmen's compensation act, minimum wages act, ESI act hazardous in Industry deleted	-4	12	---
7.	Introduction to ISO 9000 & T.Q.M.	10	nil	--	10	---
8	Role of Enterprenuer and Enterprenuerial Development	12	Planned and co-ordinate effort , demand and market survey – deleted	-2	10	1.Not required for diploma students 2. Covered in 5th chapter.
T O T A L		90		-15	75	

INDUSTRIAL MANAGEMENT AND ENTREPRENEURSHIP

(COMMON FOR M/EE/EC/CM/A/MET/EI)

Subject Title   :Industrial Management And Entrepreneurship
Subject Code   :   CM –601
Periods/Week   :   05
Periods per Semester   :   75

TIME SCHEDULE

S. No.	Major Topics	Periods	Weightage Of Marks	Short Answer Questions	Essay Type Questions
1.	Principles and functions of Management	5	08	01	½
2.	Organisation structure & organisational behaviour	10	21	02	1 ½
3	Production Management	10	13	01	01
4.	Materials Management	10	16	02	01
5.	Marketing ,Sales & Feasibility study	12	13	01	01
6.	Industrial legislation & safety	8	13	01	01
7.	Introduction to ISO 9000 & T.Q.M.	10	13	01	01
8	Role of Enterprenuer and Enterprenuerial Development	10	13	01	01
	Total	75	110	10	08

OBJECTIVES
On completion of the course the student will be able to

1.0   **Understand the principles of management as applied to industry.**
        1.1   Define industry, commerce (Trade) and business.
        1.2   Know the need for management.
        1.3   Understand the evolution of management
        1.4   Explain the principles of scientific management.
        1.5   Understand functions of Management.
        1.6   Differentiate between management and administration.

2.0 Know types of ownerships, the organisation structure of an industry and the behaviour of an individual in an organisation.
    2.1   Understand types of ownerships
    2.2   Differentiate types of ownerships.
    2.3   Understand salient features of joint stock companies.
    2.4   Understand the philosophy and need of organisation structure of an industry.
    2.5   Understand the line, staff and Functional organisations.
    2.6   List the advantages and limitations of line, staff and functional organisations.
    2.7   List different departments in a large scale industry.
    2.8   Explain the factors of effective organisation.
    2.9   Understand organisational behaviour.
    2.10   Conduct for analysis.
    2.11   Assess the incurring applicants.
    2.12   Outline the selection process.
    2.13   Understand the sources of manpower.
    2.14   State motivation theories.
    2.15   State Maslow's Hierarchy of needs.
    2.16   List out different leadership models.
    2.17   Explain the trait theory of leadership.
    2.18   Explain behavioural theory of Leadership.
    2.19   Explain the process of decision Making.
    2.20   Outline the communication process.

3.0 Understand the different aspects of production management.
    3.1   Differentiate and integrate production, planning and control.
    3.2   Relate the production department with other departments.
    3.3   State the need for planning and it's advantages.
    3.4   Explain the stages of Production, planning and control.
    3.5   Explain routing methods.
    3.6   Explain scheduling methods.
    3.7   Explain dispatching.
    3.8   Draw PERT/CPM networks.
    3.9   Identify the critical path.

4.0 Understand the role of materials management industries.
    4.1   Explain the role of the materials in Industry.
    4.2   Derive expression for inventory control.
    4.3   Explain ABC analysis.
    4.4   Define safety stock.
    4.5   Define reorder level.
    4.6   Derive an expression for economic ordering quantity.
    4.7   Explain stock layout.
    4.8   List out stores records.
    4.9   Explain the Bin card.
    4.10   Describe Cardex method.
    4.11   Explain purchasing procedures.
    4.12   List out purchase records.

4.13   Describe the stores equipment

5.0   Understand marketing, sales and feasibility study.
5.1   Explain marketing functions.
5.2   Explain Sales function.
5.3   List out market conditions.
5.4   Differentiate Sellers and Buyers' market.
5.5   Differentiate monopoly, oligarchy, and perfect competition.
5.6   Conduct market and demand surveys.
5.7   Differentiate product and production analysis.
5.8   Identify the input materials, i.e. Bill of materials
5.9   Explain the concept of cost.
5.10   List out the elements of cost.
5.11   Explain the concept of contribution.
5.12   Explain break-even analysis.
5.13   Define the main policy requirements.
5.14   Decide the location.
5.15   Evaluate Economic and Technical factors.
5.16   Preparation of feasibility study.
5.17   List out different products currently in demand with market or industry.

6.0   Comprehend the provisions of industrial legislation in India. & Safety procedures
6.1   Describe employer and employee relations.
6.2   Describe the mechanics of Trade Unions.
6.3   Describe mechanics of settlement of in outs.
6.4   Explain the significance of collective bargain.
6.5   List out Welfare activities.
6.6   List out subsidy schemes.
6.7   Explain the total welfare concept.
6.8   List out the rights and responsibilities of employees and employers.
6.9   List out the salient features of Indian Factories Act.
6.10   Explain the importance of safety at Work place.
6.11   List out the important provisions related to safety.
6.12   Explain the significance and mechanics of safety education.
6.13   Explain hazard and accident.
6.14   List out different hazards in the Industry.
6.15   Explain the causes of accidents.
6.16   Explain the direct and indirect cost of accidents.
6.17   List out provisions of Indian Electricity Rules laid in the electricity act1923.

7.0   Understand ISO 9000 & TQM.
7.1   Understand the concept of quality.
7.2   Know the quality systems and elements of quality systems.
7.3   Know the principles of quality Assurance.
7.4   Know the Indian Standards on quality systems.
7.5   Know the evolution of ISO standards.
7.6   Discuss ISO standards and ISO 9000 series of quality systems.

7.7 State the constituents of ISO 9000 series of standards for quality systems.

7.8 State the outstanding features and drawbacks of ISO 9000 series of standards.

7.9 List the beneficiaries of ISO 9000.

7.10 Understand 5-S principles and ZERO DEFECT.

8.0 Understand the role of entrepreneur in economic development and in improving the quality of life.

8.1 Outline the concepts of Entrepreneurship.

8.2 Define the word entrepreneur.

8.3 Determine the role of Entrepreneurship.

8.4 Describe the profile of an entrepreneur.

8.5 Explain the requirements of an entrepreneur.

8.6 Outline the expectations of Entrepreneurship.

8.7 Determine the role of entrepreneurs in promoting Small Scale Industries.

8.8 Describe the details of self-employment schemes.

8.9 Explain the method of product selection.

8.10 Explain the method of site selection.

8.11 Outline the method of plant layout.

8.12 List the financial assistance programmes.

8.13 List out the organisations that help an entrepreneur.

COURSE CONTENTS

1. Principles and functions of management.
Definitions of Industry, Commerce and Business. Evolution of management theories. Principles of Scientific Management, functions of management. Difference of administration and management.

2. Organisation Structure & organisational behaviour.
Role of industry, Types of ownership – Sole proprietorship, Partnership, Private limited, Public limited company, Industrial Cooperatives, Philosophy, types of Organisations, Line and Staff and functional organisations. Advantages and limitations, departments in a large scale industry. Effective organisation. Job analysis, Assessing applicants, selection, motivation, different theories, Leadership in organisation, decision making, communication,

3. Production Management.
Production, planning and control, relation with other departments, need for planning and its advantages, Routing, scheduling, despatching, PERT and CPM, simple problems.

4. Materials Management.
Materials in industry, inventory control model, ABC Analysis, Safety stock, re-order, level, Economic ordering quantity, Stores layout, stores

equipment, Stores records, purchasing procedures, purchase records, Bin card, Cardex.

5. **Marketing, Sales & Feasibility Study**

Sellers and Buyers markets, Marketing, Sales, Market conditions, monopoly, oligarchy, perfect competition, Pricing Policies. Cost Elements of Cost, Contribution, Break even analysis, Market Survey, Product and production Analysis, Materials input, Manpower, Location, Economic and Technical Evaluation, preparation of Feasibility study reports, - different products – Mechanical, Electrical, Electronics, consumer items, Consumer desires etc.

6. **Industrial Legislation & safety.**

Employer – Employee relations, Trade, Union Settlement of disputes, collective bargaining, Welfare activities, subsidies, Total Welfare concept, rights and responsibilities and Employers and employees. Salient features of Indian Factories Act, Important of Safety at work places, factories Act-Provisions, Safety Education, Hazards, causes of accidents, Cost of accidents, Indian Electricity rules.

7. **Introduction to ISO 9000 and TQM.**

Concept of quality discussed by B. Crosby W. Edward, Deming, Joseph M. Jura Kooru Ishikawa, Genichi Taguchi, Shigco Shingo.

Quality systems – Definitions of the terms used in quality systems like, quality policy, quality management, quality systems, quality control and quality assurance.

Elements quality systems : Management responsibility, Quality system, contract review, design control, document control, purchasing, purchaser – supplied product, product identification and traceability, process control, Inspection and testing.

Principles of quality assurance – Definition of quality assurance.

Indian standards on quality systems – Main features of IS 13999 : 1990, IS 14000 : 1990, IS 14004 : 1990, IS 14001: 1990, IS 14002 : 1990, IS 14003: 1990.

Know the necessity of International standards – Evolution of ISO. **5-S** principles – importance – meaning – approach – benefits

Various standards under ISO – Outstanding features of ISO 9000 series of standards – ISO 9000 Phenomenon ISO 9000 series of quality systems – Constituents of ISO 9000 series of standards for quality systems.

Drawbacks of ISO 9000 series of standards, list the beneficiaries of ISO 9000 (Whom does ISO 9000 help).

8. **Role of Entrepreneur & Entrepreneurial Development.**

Concept, definition, role, expectation, entrepreneurship Vs Management, promotion of S.S.I. Self – employment schemes. Product selection, site selection, plant layout, profile and requirement, Institutional support needed, financial assistance programmes.

REFERENCE BOOKS

1. Industrial Engineering and Management -by O.P Khanna

2. Production Management- by Buffa.

3. Engineering Economics and Management Science – by Banga & Sharma.

4. S.S.I Hand Book by S.B.P. Publishers.

5. Personnel Management by Flippo.

6. Entrepreneurship – by NITTT&R, Chennai.

Subject wise modification table for restructuring of the syllabus.

Branch…COMPUTER   ENGINEERING

Sub-Code as per C-05	CM-604	Sub-Code as per C-09	CM-602
Name of the subject as per C-05	SYSTEM ADMINISTRATION	Name of the subject as per C-09	SYSTEM ADMINISTRATION
No. of periods allotted as per C-05	75	No. of periods allotted as per C-09	75

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	Windows NT	10	Deleted 1.2,1.4,1.5 from C-05 syllabus	-05	05	As windows NT is obsolete
2	NT file system	20	Deleted	-20	--	As windows NT is obsolete
3	Windows server 2003 management	25	No change	--	25	
4	Linux installation	10	Deleted	-10	00	Content is reorganized
5	System administration	10	Deleted	-10	00	Content is reorganized
6	Windows 2003 server environment	--	Added	+15	15	Introduction to NT environment with advanced OS windows 2003
7	Introduction to Linux	--	Added	+10	10	Introduction to Linux environment and familiarization to linux commands
8	Linux administration	--	Added	+20	20	Familiarization with linux server components and managing them
	T O T A L	75		00	75	

SYSTEM ADMINISTRATION

Subject Title   **:System Administration**
Subject Code   **:CM – 602**
Periods per Week   **:05**
Periods per Semester **:75**

TIME SCHEDULE

S.No	Major Topics	Periods	Weightage Of Marks	Short Questions	Essay Questions
1.	Introduction to WINDOWS NT	05	11	2	1/2
2.	Windows 2003 server environment	15	21	2	11/2
3.	Windows 2003 Server management	25	39	3	3
4.	Introduction to LINUX	10	13	1	1
5.	LINUX Administration	20	26	2	2
	Total	**75**	**110**	**10**	**8**

1.0   Introduction to Windows NT

1.1   Windows NT Server, Windows NT Workstation, NT Architecture.
1.2   Windows NT Network Components, Windows NT Network Services.
1.3   Introduction to Windows NT file system, FAT File System, Windows NT file system (NTFS) Converting FAT to NTFS.

2.0   Windows 2003 Server Environment

2.1   Need for Windows server 2003
2.2   Different editions of windows 2003
2.3   Comparison between Windows NT and windows 2003
2.4   Comparison between various versions of Windows 2003 server
2.5   Windows 2003 Server components
2.6   Hardware requirements.
2.7   Major optional services available in Windows 2003 server.

30.   Windows 2003 Server Management

3.1   Installation & Configuration of Windows 2003 Server
3.2   User & Group Managements.
3.3   Using Device Manager, Drivers Signing & Signature
3.4   Verification & Managing Ports.
3.5   Installing & Managing & Configuration Printers,
3.6   Disk Management Tools & Tasks,

3.7   File Systems User Management, Installing Active Directory, Domain
       User Account, Configuration User Accounts Properties, Domain
       Groups, Viewing a User's Effective Permissions, Creating and
       Managing Shares,
31.   Implementing Files and Folder NTFS & Share Permissions, Special
       Permissions, Inheritance, Implementing Shadow Copies, Implementing
       And Managing the Distributed File System (DFS), Installing and
       Configuring Terminal Services.
3.9 Managing Servers Remotely Using Terminal Services (Remote Desktop)
       Backup   Restoring Data, Installing DNS, Implementing DNS in
       Windows   2003 Networks, Installing and Configuring DHCP,
       Monitoring and   Managing Internet Information Services (IIS 6.0),
3.10 Remote Access and VPN Overview, Configuring & Implementing
       Remote Access Server.
3.11 Configuring & Implementing VPN, Configuring & Implementing Remote
       Access Services, Configuring & Implementing Routing Services.
3.12 Configuring & Implementing Active Directory Services Forest, Planning
       Implementing on OU Structure.
32.   Implementing Server Roles, Restoring Active Directory, Local and
       Domain Security Policies, Working with Group Policy, Configuring the
       user Environment by Using Group Policy, Deploying Software through
       Group Policy.

4.0 Introduction to LINUX

4.1   Introduction to Linux, pre-Installation.
4.2   Installation of Linux.
4.3   Know Desktop Environments, Shells & their Types.
4.4   Familiarisation with LINUX editors and commands
4.5   Know basic filtering techniques in LINUX
         4.5.1 Give the working of filter commands

         4.5..2 Know the usage of grep, egrep, fgrep.

5.0 LINUX Administration
5.1   managing Users and Groups
5.2   Managing Printers and print job.
5.3   TCP/IP with LINUX, Understanding Browsers, PPP & Time Management.
5.4   Configuring DHCP in LINUX
5.5   Configuring DNS in LINUX.
5.6   Samba, NFS, Network Services, Proxies, Configuring Firewall.
5.7   Configuring internet access, sending mail
5.8   Configuring web server.
5.9   Security
5.10 Backup of data

COURSE CONTENTS

1. Introduction to Windows NT

NT Server, Work Station Architecture, NT Services- File system- conversion FAT to NTFS

33.   Windows 2003 Server Environment

Need for Windows 2003, Comparison between NT and windows 2003, Server Components, Hardware requirements, Optional services

3. Windows 2000 Server Management

Installation & Configuration of Windows 2003 Server, User group Management, Disk Management, Active Directory, Distributed File system, Remote Terminal Services, Networking with Windows 2003 Server, Domain Name system (DNS), DHCP, Installation of IIS, VPN, Restoring, Domain Security.

4. Introduction to LINUX

Installation of LINUX, Desktop Environment, Linux editors and commands, filtering techniques.

34.   LINUX Administration

Managing users and groups, managing printers, configuring DHCP , DNS, Network services, Firewalls, Security, backup

REFERENCE BOOKS

1.Windows NT server   --   MCS guide , Sybex

2.Sams' Teach Yourself MCS TCP/IP   --   James F. Causey,
                                                   Techmedia
3.UNIX & Shell Programming   --   Forouzan Thomson
4. Introduction to UNIX and LINUX   --   John Muster, TMH
                                                   Pubs

Subject wise modification table for restructuring of the syllabus.

Branch:-   COMPUTER ENGINEERING

Sub-Code as per C-05	CM-602	Sub-Code as per C-09	CM-603
Name of the subject as per C-05	Java Programming	Name of the subject as per C-09	Java Programming
No. of periods allotted as per C-05	75	No. of periods allotted as per C-09	75

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	Basics and features of Java	5	OOP's Concepts deleted	--	5	They are already covered in C++
2	Data types, variables, arrays, operators & control statements	15	Scope, life time, Array concepts, operator precedence deleted	--	15	They are already covered in C++
3	Classes, objects and inheritance	20	Concepts on classes and objects, constructors, destructors, operator overloading, inheritance deleted	--	20	They are already covered in C++
4	Packages, interfaces & multithreaded programming	15	-	--	15	-
5	Exception handling I/O Streams & applets	20	-	--	20	-
	T O T A L	75		00	75	

JAVA PROGRAMMING

Subject Title : **JAVA Programming**
Subject Code : **CM-603**
Periods per Week : **05**
Periods per Semester : **75**

TIME SCHEDULE

S.No	Major Topics	Periods	Weightage Of Marks	Short Questions	Essay Questions
1.	Basics & features of Java	5	03	1	--
2.	Data types, Variables, Arrays,operators,Control statements	15	26	2	2
3.	Classes ,Objects, Inheritance	20	29	3	2
4.	Packages,Interfaces and Multi threaded programming	15	26	2	2
5.	Exception handling,I/O streams and Applets	20	26	2	2
	Total	75	110	10	8

OBJECTIVES
1.0 Understand the basic concepts of Java.
1.1   Know the importance of Java in the Internet   programming.
1.2   Compare Java & C++
1.3   Define an Applet.
1.4   Explain the features of Java applets and applications.
1.5   Understand Byte codes of Java, JVM.
1.6   Know the process of entering and executing a Java program.
1.7   Know about white space, literals, separators, keywords in Java.
1.8   Know how to write comment statements in Java.

2.0 Know data types, variables, Arrays and Control Statements.
2.1   Know eight simple types of data.
2.2   Know Java literals.
2.3   Know the declaration and initialization variables.
2.4   Know the type conversion and casting features.
2.5   Know the Usage of one-dimensional and two–dimensional array.
2.6   Know various types of operators.
2.7   Know the syntax of selection statements of Java.
2.8   Know the syntax of iteration statements of Java.
2.9   Know the syntax of jump statements, break, continue statements.

3.0 Understand classes.

3.1   Know the creation of class and objects.
3.2   Explain new operator and methods.
3.3   Classify methods according to returning values and passing parameters.
3.4   Know the Usage of constructors.
3.5   Know the usage of 'this' pointer.
3.6   Know the concept of overloading of methods and constructors.
3.7   Understand the working of static and final.
3.8   Know about string classes.
3.9   Usage of command-line arguments.
3.10   Understand the concept of super class and sub class objects.
3.11   Know how to create multi level hierarchy.
3.12   Explain the concept of Dynamic method overriding.
3.13   Explain the concept of Dynamic method dispatch with an example.
3.14   Define and explain Abstract classes.
 3.15   Know how to use 'final' to avoid overriding.

4 .0 Know how to create Package ,Interfaces and Multi threaded programming.
4.1   Define a package.
4.2   Understand the concept of class path.
4.3   Know the concept of Access protection.
4.4   Know the usage of classes from a class.
4.5   Appreciate the concept of importing packages.
4.6   Know the concept of Interfaces.
4.7   Define an Interface.
4.8   Know how to implement interfaces.
4.9   Know the scope of variables in interfaces.
4.10   Give the thread model of Java.
4.11   Give thread priorities.
4.12   Understand the concept of synchronization.
4.13   Implement the thread class and runnable interface.
4.14   Know how to create thread.
4.15   Know how to create multiple threads.
4.16   Understand Alive( ), Join ( ), Suspend( ), Resume( )   methods.
4.17   Explain Inter thread communication.'
4.18   Explain dead lock.
4.19   Explain thread properties.

5.0 Know the Exception handling, I/O streams and Applets.
5.1 Know the sources of errors.
5.2 Give advantages of Exceptions.
5.3 Understand how to deal with exceptions.
5.4 Know the concept of Multi-catch statements programs.
5.5 Give the Types of Exceptions
5.6   explain various stream classes.
5.7 the Basics of Applets.
5.8 Applet classes, Applet Architecture.
5.9 Applet Selection.
5.10 the order of Applet initialization and termination.

5.11 simple example creating Applets.

COURSE CONTENTS

1. Java fundamentals: Importance of Java to Internet – Java applets –
Applications – Byte codes. Features of Java: OOPS concept – literals –
comments writing – key words – separators.

2. Data types, Variable and Arrays: Data types – declaring variable – scope –
life time type conversions – casting – Arrays. Operators : Types of operators –
order of precedence of operators – selection statements – control statements –
jumping statement – break, continue statements,

3. Classes : Concepts of classes – objects – new – methods – constructors –
over loading string classes – command line arguments. Inheritance: Basics of
inheritance super class, sub classes – Multi level hierarchy – overriding – DMP
concept.

4. Packages,Interfaces and Multi threading : Concept of packages &
Interfaces – importing of packages – implementing Interfaces. Define thread –
Multi threading- Inter thread communication – Dead locks – Properties –
priorities

5. Exception Handling, Stream and Applets: I/O streams – Exception
handling: Source of errors – error handling – avoiding handling – throwable
classes - Basics of Applets – creating Applet.

REFERENCE BOOKS

1. The complete reference Java   --   Pattrick Naughten, Herbert Schildt
                                            TMH company Limited, New Delhi.
2. Programming in JAVA   --   P. Radhakrishna, University Press
3. Programming in Java   -- Muthu   - Thomson

4. Java Foundations of Programming   – NIIT, PHI

5. Programming with Java   -- Balagurusamy, TMH

Subject wise modification table for restructuring of the syllabus.

Branch…………COMPUTER …………………………………………………ENGINEERING

Sub-Code as per C-05	CM-501	Sub-Code as per C-09	CM-604
Name of the subject as per C-05	INTERNET PROGRAMMING	Name of the subject as per C-09	WEB DESIGNING
No. of periods allotted as per C-05	75	No. of periods allotted as per C-09	75

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	Fundamentals of Internet	20	deleted	-20	00	Duplication of topics from I year
2	HTML	20		--	20	
3	VB Script	15		--	15	
4	ASP	15	JSP added	--	15	Basics of JSP included
5	XML, JavaScript	5	deleted	-5	00	JavaScript adjusted in VBScript chapter, XML in HTML Chapter
6	Principles of web Designing	--	added	+5	5	Concepts/subject introduction
7	PHP	--	added	+20	20	Exposure to latest Server-side scripting
	T O T A L	75		00	75	

WEB DESIGNING

Subject Title : **Web Designing**
Subject Code : **CM-604**
Periods per Week : **05**
Periods per Semester : **75**

TIME SCHEDULE

S.No.	Major topics	Periods	Weightage of marks	Short questions	Essay questions
1.	Principles of Web Designing	05	03	1	-
2.	HTML	20	16	2	1
3.	VB Script	15	29	3	2
4.	ASP	15	26	2	2
5.	PHP	20	36	2	3
	TOTAL	**75**	**110**	**10**	**08**

OBJECTIVES: *After completing the study of this subject a student will be able to:*

1.0 Understand the principles of Web Designing.
    1.1. Describe Anatomy of web page.
    1.2. Give the Format of web page.
    1.3. Understand different Web page elements.
    1.4. How to navigate through web pages
    1.5. Narrate steps in building web site
    1.6. Narrate steps in launching web site
    1.7. Narrate steps in maintaining web site.

35. Understanding HTML.
    2.1 Understanding the importance of HTML.
    2.2 Study the basic tag in HTML <html>, <head>, <title>, <body>.
    2.3 Study the tags, <h?>, <a>, <q>, <strong>, <cite>, <big>, <small>, <ins>, <del> with attributes.
    2.4 Study the presentation formatting tags, <b>, <I>, <u>, <strike>, <sub>, <sup>, <centre>, <blink>, <font>, <marquee>, with attributes.
    2.5 Study the link and imaging tags, <a>, <href>, <img>, <embed>, <object> tags with attributes.
    2.6 Study the tags, <mullticol< with attributes.
    2.7 Study the tags, <ul>, <ol>, <li>, <dl>, <menu> with attributes.
    2.8 Study how to change colors.

2.9   Study the setting of tables.
2.10   Study the tags, <table>, <tr>, <td>, <th>, <tbody>, <thead>, <tfoot>, <caption>, <col>, <colgroup> with attributes.
2.11   Gathering information through forms.
2.12   Study the tags, <form>, <input>, <button>, <label>, <select>, <options>, <textarea>, <legend> with attributes.
2.13   Study the tags, <frame>, <frameset>, <noframe>, <iframe> with attributes.
2.14   Study about cascading style sheets.
2.15   Study the uses of DHTML.
2.16   Study the basic principles of XML
2.17   Know about XML Documentation with Simple Example.

36.   Understanding Client side scripting – VB Script.
36.1.   Study the need for client side scripting.
36.2.   Discuss about various Client side scripting languages.
36.3.   Structure of VB script code.
36.4.   Study the data types available.
36.5.   Study the operators.
36.6.   Study the statements if..then…else, for .. next, do …loop, while .. wend statements.
36.7.   Study the procedure and functions.
36.8.   Discuss about basic functions inputbox, len, msgbox,   aritype.
36.9.   Discuss about the string functions, Asc, Chr, InStr, Lcase, Left, Ltrim, Mid, Right, Rtrim, Str(). StrComp, String, Trim, Ucase, Val.
36.10. Discuss about the conversion functions, Cbyte, CDbl, Cint ,CLng CStr, CVErr
36.11. Discuss the Mathematical functions Abs, Array, Atn, Exp, Hex, int, Fix, Log, Oct, RND, Sgn, Sqr, Sin, Tan.
36.12. Discuss the time and date functions Date, DateSerial, DateValue, Day, Hour, year, Weekday, Minute, Month, Now, Second, Time, TimeSerial, TimeValue.
36.13. Discuss the Boolean functions
36.14. Study the embedding of _ VBScript in HTML.
36.15. Study creating a new page with _ VBScript.
36.16. Define an ODBC data source.
3.18. Understand the creating of IDC Script file and Output Template File.
3.19   Discuss the error handling in _ VBScript.
3.20   Study the Features of Java script
3.21   Compare JavaScript with VB Script

4. Understand the Server side scripting ASP.
 4.1 Discuss the role of server side scripting
 4.2 Discuss about various Server side scripting languages
 4.3 Study the setting up of PWS and IIS fir ASP
 4.4 Discuss the importance of ASP.
 4.5 Understand objects and components.
 4.6 Discuss the Application, Response, Request, Session objects.

4.7 Study the retrieving of data from forms.
4.8 Study the use of Text Boxes, Radio Buttons, Check Boxes etc.
 4.9 Discuss the validation of form data.
4.10 Study file uploads.
4.11 Describe the use of Application object.
4.12 Describe the use of Sessions.
4.13 Discuss the importance of cookies.
4.14 Study the creation of Cookies with ASP.
4.15 Study the use of ASP with data bases.
4.16 Describe the connecting to a Microsoft Access database.
4.17 Describe the use of ASP custom components.
4.18 Study the use of Third party components.

4.19 Study the creating of custom components.
4.20 Study the Basic Principles of JSP.

5.0 Understand the Server side scripting PHP.
5.1 Installation of PHP
5.2 Basics of PHP, combining HTML and PHP
5.3 Variables, data types, operators, control structure
5.4 Creating arrays, multi dimensional arrays, manipulating arrays – serializing arrays
5.5 User defined functions, scope, function arguments and return values, internal function, static variables.
5.6 String functions
5.7 Object orientation in PHP
      5.7.1 Concept of class and object
      5.7.2 classes as namespace
      5.7.3 Objects as references
      5.7.4 implementing inheritance
      5.7.5 method overriding
      5.7.6 magic functions
5.8 Working with forms
      5.8.1 Global and environmental variables
      5.8.2 Script to accept user input
      5.8.3 accessing input from various elements of form
      5.8.4 accessing inputs in an associative array
      5.8.5 get and post method
      5.8.6   file upload
5.9 Saving state in PHP
      5.9.1 Setting a cookie
      5.9.2 Deleting a cookie
      5.9.3 Creating session cookie
      5.9.4 Working with query string
      5.9.5 Session function
      5.9.6 Session variables
5.10 PHP and databases
      5.10.1 Database concept
      5.10.2 Database correction
      5.10.3 Creating tables

5.10.4 Getting information on database

5.10.5 Inserting data on to a table

5.10.6 Retrieving data from table

5.10.7 Changing data of a table

5.10.8 Deleting data from a table

5.11 Compare Scripting Languages ASP, JSP, PHP

COURSE CONTENTS

1. PRINCIPLES OF WEB DESIGN

Anatomy of Web page, Format, Elements, Navigation, Building, Launching and maintaining web site

2. HTML

HTML – Introduction, Format of web page, Tags and attributes, Formatting text, Adding images, Positioning. Lists, colors, Connecting to hyperlinks, Tables, Forms, Frames, Style Sheets, Introduction toi DHTML., XML

3. VB SCRIPT

Client side scripting – VB Script, VB and VB Script, VB script programming basics, Data types, operators, decision statement, Procedures, functions, basic functions, string functions, conversion function, math functions, date & time functions, Boolean functions, events and intrinsic controls, embedding VB script in HTML, Database connectivity (ODBC), Error handling in VB Script, Java Script.

4. ASP

Server side scripting- ASP, Setting up windows NT and IIS for ASP, Built in ASP objects, Additional ASP Objects, Database connectivity, ActiveX Data Objects, integrating with data base, cookies, sessions and passwords.

37.   PHP

Introduction to PHP-arrays-functions-strings-object orientation in PHP-Working with forms – File manipulations in PHP- saving state in PHP- advanced concepts in PHP-PHP and databases, Comparison of ASP,JSP,PHP

REFERENCES BOOKS

1.   Internet & World Wide Web –   Dietel and Dietel
                                                          Pearson education Asia.
2.   Principles of Web Design   Sklar TMH
3.   HTML complete reference   Powell – THH.
4.   WWW Design with HTML   Xavier (TMH)
5.   Basics of Web Site Design   NIIT – PHI
6.   Straight to the point PHP   Laxmi Publications
7.   The Web Warrior Guide to Web Design   Gosselin, Thomson
8.   Web Technology & Design   C Xavier, New Age Inter.

Subject wise modification table for restructuring of the syllabus.

Branch…………COMPUTER ……………………………………………………ENGINEERING

Sub-Code as per C-05	CM-605	Sub-Code as per C-09	CM-605A
Name of the subject as per C-05	SOFTWARE ENGINEERING	Name of the subject as per C-09	SOFTWARE ENGINEERING
No. of periods allotted as per C-05	90	No. of periods allotted as per C-09	75

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	Introduction to life Cycle Models	10	No change	--	10	As a theory subject, kept under elective and is essential
2	Software Project Management	20	No change	--	20	
3	Requirement analysis Specification	20	No change	-5	15	Periods reduced and enough to teach
4	Software Design, Coding and Testing	25	No change	-5	20	---do---
5	Reliability and Quality management & Maintenance	15	No change	-5	10	---do----
	T O T A L	90		-15	75	

SOFTWARE ENGINEERING

Subject	:	**Software Engineering**
Subject code	:	**CM – 605A**
Periods per Week	:	**05**
Periods per semester	:	**75**

TIME SCHEDULE

S.No	Major Topics	Periods	Weightage Of Marks	Short Questions	Essay Questions
1.	Introduction & Life Cycle Models	10	13	1	1
2.	Software Project Management	20	29	3	2
3.	Requirement Analysis and Specification	15	16	2	1
4.	Software Design, Coding & Testing	20	39	3	3
5.	Reliability And Quality Management & Maintenance	10	13	1	1
	Total	**75**	**110**	**10**	**8**

OBJECTIVES

1.0 Introduction & Life Cycle Models
      1.1 The Software Engineering Discipline-Evolution and Impact
      1.2 Evolution of an Art to an Engineering Discipline
      1.3 A Solution to the Software Crisis?
      1.4 Programs vs Software Products
      1.5 Emergence of Software Engineering
      1.6 Early Computer Programming
      1.7 High Level Language Programming
      1.8 Control Flow-Based Design
      1.9 Data Structure-Oriented Design
      1.10 Data Flow-Oriented Design
      1.11 Object Oriented Design
      1.12 Other Developments
      1.13 Notable Changes in Software Development Practices
      1.14 Computers Systems Engineering
      1.15 Software Life Cycle Models – Classical Waterfall Model
            Classical Waterfall Model - Feasibility Study
      1.16 Requirement Analysis and Specifications
      1.17 Design
      1.18 Coding and Unit Testing
      1.19 Integration and System Testing
      1.20 Maintenance

COURSE CONTENTS

1 Introduction to Software Engineering- Life Cycle Models.

2 Software Project Management- Responsibilities of a Software Project Manager- Project planning – Metrics-Project Estimation Techniques-Scheduling – Risk Management.

3 Requirement Analysis and Specification- SRS document – Functional Requirements – Traceability.

4 Software Design Function-Oriented Software Design, Object-Oriented Software Design, User interface Design

5 Software Reliability and Quality Management – H/W vs S/W Reliability-Software quality – ISO-9000 & ISO-9001 Certification.

REFERENCE BOOKS

1. Fundamentals of Software Engineering – Rajib Mall (PHI)
Second Edition.

2. Software Engineering   - Jawadekar (TMH)
3. Software Engineering Concepts   -   Fairley (TMH)
4. Pankaj Jalote international approach to software engineering ":2nd edition Narosal publishing house 1997

Subject wise modification table for restructuring of the syllabus.

Branch……COMPUTER ENGINEERING

Sub-Code as per C-05	CM-502	Sub-Code as per C-09	CM-605 (B)
Name of the subject as per C-05	MOBILE COMPUTING	Name of the subject as per C-09	MOBILE COMPUTING
No. of periods allotted as per C-05	90	No. of periods allotted as per C-09	75

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
01	Introduction to protocols and TCP/IP suite, Medium Access control	15	Added TDMA, CDMA, Comparison of S/T/F/CDMA	-5	10	Added in 1st unit as these are topics of Medium Access control
02	Telecommunication Systems	25	Deleted TDMA, CDMA, Comparison of S/T/F/CDMA	-10	15	Deleted from 2nd unit and added to 1st unit
03	Satellite systems and Broadcast systems	15	-	-5	10	-
04	Wireless LAN, Bluetooth	20	-	-	20	-
05	Mobile Network layer, Transport layer and generations of Wireless Technology	15	Added 1G, 2G, 3G and 4G of Wireless Technology	+5	20	Latest technology has been included
	T O T A L	90		-15	75	

MOBILE COMPUTING

Subject Title   : Mobile Computing
Subject Code   : CM – 605 (B)
Periods per Week   : 05
Periods per Semester   : 75

TIME SCHEDULE

S.No	Major Topics	Periods	Weightage Of Marks	Short Questions	Essay Questions
1.	Introduction to Protocols and TCP/IP Suite Medium access control	10	16	2	1
2.	Telecommunication Systems	15	26	2	2
3.	Satellite Systems, Broadcast Systems	10	26	2	2
4.	Wireless LAN , Blue Tooth	20	26	2	2
5.	Mobile Network Layer, Transport Layer and Generations of Wireless Technology	20	16	2	1
	Total	**75**	**110**	**10**	**8**

OBJECTIVES

1.0 INTRODUCTION
     1.1 Application
     1.2 History of wireless communication
     1.3 A simplified reference model
     1.4 Cellular systems
     1.5 Protocol and the TCP/IP suite
     1.5.1 The need for a protocol architecture
     1.5.2 The TCP/IP protocol architecture
     1.5.3 Internet working
     1.5.4 Internet protocol
     1.5.5 Transmission control protocol
     1.5.6 User datagram protocol
     1.6 Medium access control
     1.6.1 Motivation for specialized MAC
     1.6.2 Hidden & exposed terminals

4.3.2   Bluetooth standards documents
4.3.3   Protocol architecture
4.3.4   Usage models
4.3.5   Piconets & Scatternets
4.3.6   Radio specification
4.3.7   Base band specification
4.3.8   Frequency hopping
4.3.9   Physical links
4.3.10 Packets (outline)
4.3.11 Error Correction
4.3.12 Logical channels
4.3.13 Channel control
4.3.14 Bluetooth Security
4.3.15 Link manager specification (outline)
4.3.16 Logical link control and adaptation protocol (outline)
4.3.17 L2CAP Channels
4.3.18 L2CAP packets
4.3.19 Signalling commands
4.3.20 Quality of service

5.   Mobile network layer
5.1   Mobile IP
        5.1.1   Goals, assumptions & requirements
        5.1.2   Entities & terminology
        5.1.3   IP packet delivery
        5.1.4   Agent advertisement & discovery
        5.1.5   Registration
        5.1.6   Tunneling & encapsulation
        5.1.7   Optimizations
        5.1.8   Reverse tunneling
        5.1.9   Ipv6
5.2   Dynamic host configuration protocol
5.3   Mobile transport layer
        5.3.1   Traditional TCP
        5.3.2   Congestion control
        5.3.3   Slow start
        5.3.4   Fast retransmit & fast recovery
        5.3.5   Transmission / time out freezing
        5.3.6   Selective retransmission
        5.3.7   Transaction oriented TCP
5.4   Introduction to J2ME
                5.4.1 MIDP,CLDC,KVM

6.0 GENERATIONS OF WIRELESS TECHNOLOGY
  6.1 Know about the various generations of Wireless Technology
6.2 Know about 1G and 2G
6.3 Understand 3G and its features
6.4 Know about 4G and its features

COURSE CONTENTS :

1.0   INTRODUCTION
Application   History of wireless communication   A simplified reference model   Cellular systems   Protocol and the TCP/IP suite . The need for a protocol architecture   The TCP/IP protocol architecture
Internet working   Internet protocol   Transmission control protocol   User datagram protocol   Medium access control Motivation for specialized MAC Hidden & exposed terminals   Near & far terminals
SDMA   FDMA

2.0   Medium access control
TDMA   CDMA   Comparision of S/T/F/CDMA   Telecommunications systems GSM   Mobile services   System architecture   Radio interface   Protocols   Localization & calling   Handover   Security   New data services

3.0   Satellite Systems
Applications   Basics GEO   LEO 139 MEO 140   Routing Localization   Handover   Broadcast systems   Over view   Cyclic repetation of data   Digital audio broadcastion   Multimedia object transport protocol Digital video broadcasting

4.0   Wireless LAN
Infrared versus radio transmission   Infrastructure & adhoc network   System architecture   Protocol architecture   Physical layer   Medium access control layer   Mac management   Future development   Bluetooth   Bluetooth application   Bluetooth standards documents   Protocol architecture   Usage models   Piconets & Scatternets   Radio specification   Baseband specification   Frequency hopping   Physical links   Packets(outline)   Error Correction   Logical channels   Channel control   Bluetooth Security Link manager specification (outline) Logical link control and adaptation protocol (outline)   L2CAP Channels   L2CAP packets   Signaling commands   Quality of service

5.0   Mobile network layer
Mobile IP   Goals, assumptions & requirements   Entities & terminology IP packet delivery   Agent advertisement & discovery   Registration   Tunneling & encapsulation   Optimizations Reverse tunneling   Ipv6   Dynamic host configuration protocol   Mobile transport layer   Traditional TCP   Congestion control   Slow start   Fast retransmit & fast recovery   Transmission / time out freezing   Selective retransmission   Transaction oriented TCP   Introduction to J2ME

6.0 GENERATIONS OF WIRELESS TECHNOLOGY
Various generations of Wireless Technology - 1G, 2G, 3G and 4 G

REFERENCE BOOKS

1. wireless communications & networks   -----   William stallings PHI
2. Mobile communications   -----Jochen schiller, Pearson pub.
3. www.palowireless.com
4. www.java.sun.com

Subject wise modification table for restructuring of the syllabus.
Branch……Computer Engg VI Semester…………………………

Sub-Code as per C-05	CM-603	Sub-Code as per C-09	CM-605(C)
Name of the subject as per C-05	Advanced Database Systems	Name of the subject as per C-09	Advanced Database Systems
No. of periods allotted as per C-05	5 Periods per Week	No. of periods allotted as per C-09	5 periods per Week

Sno	Name of the Experiment	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	Advanced Database Concepts	6	--	--	6	No change
2	Distributed Database Management Systems	18	--	--	18	No change
3	Object Oriented Database Systems	15	--	--	15	No change
4	Data Ware Housing	25	--	--	25	No change
5	Data Mining	11	--	--	11	No change
	Total	75			75	No change

ADVANCED DATABASE SYSTEMS

Subject Title   : **Advanced Database Systems**
Subject Code   : **CM– 605(C)**
Periods per Week : **05**
Periods per Semester : **75**

TIME SCHEDULE

S.No	Major Topics	Periods	Weightage Of Marks	Short Questions	Essay Questions
1.	Advanced Database concepts	6	3	1	-
2.	Distributed database Management Systems	18	29	3	2
3.	Object oriented Database systems	15	26	2	2
4.	Data warehousing	25	26	2	2
5.	Data mining	11	26	2	2
	Total	**75**	**110**	**10**	**8**

OBJECTIVES:

1.0   Advanced Database Concepts
  1.1 Transactions
  1.2   What is a transaction?
  1.3   Transaction properties
  1.4   Transaction management with SQL, Transaction log
   1.5   Concurrency Control
      1.5.1 Lost updates
      1.5.2 Uncommitted data
      1.5.3 Inconsistent retrievals
      1.5.4 The scheduler

2.0   Distributed database management Systems
  2.1   What is DDBMS
  2.2   Advantages and disadvantages
  2.3   Components of DDBMS
  2.4   Twelve commandments
   2.5 Distributed processing
      2.5.1 Introduction
      2.5.2 Levels of data and process distribution
   2.6 Distributed database transparency features
      2.6.1   Distributed transparency
      2.6.2   Transaction transparency
      2.6.3   Performance transparency

  2.7 Distributed database design

COURSE CONTENTS:

1**. Transactions** Define a transaction ? Study Transaction properties Learn over view of Transaction management with SQL Describe Transaction log
 Concurrency control – Learn overview of Lost updates, uncommitted data and the scheduler

2 Distributed database Management Systems
Explain What is DDBMS ? Study Advantages and disadvantages Define Components of DDBMS Discuss Twelve commandments
Study concept of Distributed processing Understand about Levels of data and process distribution Explain Distribution transparency   Explain Transaction transparency Explain Performance transparency Explain Data fragmentation Define Horizontal fragmentation Define Vertical fragmentation Define Mixed fragmentation   Understand Data replication   Understand Data allocation.

3. Object oriented Database systems
Learn about Object schemas Study Class subclass relationships Explain Interobject relationships Discuss Late and early binding Learn significance of Support for versioning Learn Features of an OODBMS Discuss Advantages and disadvantages Distinguish between OODBM vs. RDBM

4. Data warehousing
Analyze The need for Data analysis Distinguish between Operational data and Decision support Data   Discuss DSS Database requirements Explain DSS architectural styles Learn the Twelve rules that define a data warehouse Explain OLAP architecture Explain Relational OLAP, Star Schemas

5. Data Mining
Introduction to Data Mining Procedure Data Storage Models
Explain Multi Dimensional OLAP Distinguish between ROLAP and MDOLAP Define Facts Define Dimensions Define Attributes Describe Attributes hierarchies Describe Attributes hierarchies Discuss Star Schemas representations Discuss Performance improving techniques.

References :

1. Database Systems – Design , implementation and Management by Rob – Cornel IV edition Thomson publications
2. Data mining with MS SQL server 2000 Technical reference Claude Seidamn PHI/MS press
3. Data warehousing concepts, techniques, products and applications – CSR Prabhu II PHI
4. Data warehousing – Amitesh Sinha Thomson publications
5. "Principles of Distributed Database Systems"
   -M. Timer, Ozsu and Patrick Valduriez, II edition Pearson education
6. "Object Oriented Databases" – Setrag Khos Shafian,
   John Wiley &Sons Inc., 1993
7. Data warehousing, Data mining and OLAP – Tata McGraw Hill Alex Berson and Stephen J Smith.

Subject wise modification table for restructuring of the syllabus.

Branch…COMPUTER ENGINEERING

Sub-Code as per C-05	CM-607	Sub-Code as per C-09	CM-606
Name of the subject as per C-05	SYSTEM ADMINISTRATION LAB	Name of the subject as per C-09	SYSTEM ADMINISTRATION LAB
No. of periods allotted as per C-05	45	No. of periods allotted as per C-09	45

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	Windows server 2003 management	30	No change	-20	10	NT file system is deleted
2	Linux installation	15	No change	-10	05	Reorganized
3	Windows 2003 server environment	--	No change	+10	10	Reorganized
4	Introduction to Linux	--	Few linux experiments are added and practice popular linux commands are included	+10	10	Added as it is included in theory
5	Linux administration	--		+10	45	Added as it is included in theory
	TOTAL	45		00	45	

SYSTEM ADMINISTRATION LAB

Subject Title   **: System Administration Lab**
Subject Cod e   **: CM – 606**
Periods per Week   **: 3**
Periods per Semester   **: 45**

List of Experiments

1. Installation of windows2003 server.

2. Create Users and Groups in Windows 2003 server

3. Installation of and configuration of IIS6.0.

4. Installation and Configuration DHCP.

5. Installation and Configuration DNS.

6. Installation and Configuration WINS.

7. Installation and Configuration RAS.

8. Installation of LINUX

9. Create Users and Groups in LINUX system.

10. Configure the Local Printer.

11. Configure the Print Server.

12. Configure the Remote printer.

13. Configuring DHCP and DNS

14. Practice popular Linux commands.

Subject wise modification table for restructuring of the syllabus.

Branch:-   COMPUTER ENGINEERING

Sub-Code as per C-05	CM-606	Sub-Code as per C-09	CM-607
Name of the subject as per C-05	Java Programming lab	Name of the subject as per C-09	Java Programming lab
No. of periods allotted as per C-05	90	No. of periods allotted as per C-09	45

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	Basics and features of Java	05	-	--	05	-
2	Data types, variables, arrays, operators & control statements	20	Programs on control statements, arrays and removed	-20	00	Already covered in C++
3	Classes, objects and inheritance	20	constructors, classes deleted	-10	10	They are already covered in C++
4	Packages, interfaces & multithreaded programming	20	-	-05	15	-
5	Exception handling I/O Streams & applets	25	-	-10	15	-
	T O T A L	90		-45	45	

JAVA PROGRAMMING LAB

Subject Title : **Java programming lab**
Subject Code : **CM – 607**
Periods per Week : **03**
Periods per Semester : **45**

List of Exercises

1. Write programs using Java built-in functions using all data types.

2. Write programs using concept of overloading methods.

3. Exercise on inheritance.

4. Write the programs using the concept of super class, overriding methods.

5. Exercise using "*final*" to avoid overriding.

6. Excercise on importing packages.

7. Exercise on interfaces.

8. Exercise on exception handling covering the system exceptions and user-defined exceptions.

9. Exercise on multithreading covering thread priorities.

10. Exercise on I/O streams.

11. Exercise on applets.

Subject wise modification table for restructuring of the syllabus.

Branch…………COMPUTER ……………………………………………ENGINEERING

Sub-Code as per C-05	CM-506	Sub-Code as per C-09	CM-608
Name of the subject as per C-05	INTENET PROGRAMMING LAB	Name of the subject as per C-09	WEB DESIGNING LAB
No. of periods allotted as per C-05	45	No. of periods allotted as per C-09	45

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	HTML	15	XML Expt added	-10	05	Syllabus restructured
2	VBScript	15		-05	10	--do--
3	ASP	15		-5	10	--do--
4	PHP	--	PHP experiments added	+10	10	Added as it was included in theory subject
5	CaseStudy	--	Simple project problem added	+10	10	Added to expose on overall web design
	T O T A L	45		00	45	

WEB DESIGNING LAB

Subject Title   :   **Web Designing Lab**
Subject Code   :   **CM - 608**
Periods per Week   :   **03**
Periods per Semester :   **45**

LIST OF EXPERIMENTS

1.	Write HTML code to use the tags like caption, title, body etc.

2.	Write HTML code to divide the screen into multiple frames.

3.	Write HTML code to link the pages and display the images.

4.	Write HTML code to create a table

5.	Write HTML code for form and place some text boxes, command box, selection box etc on the form.

6.	Write a small program using XML.

7.	Write a VB Script for displaying message, time and date etc using document write method.

8.	Write a VB Script for displaying different buttons (Ex: ok, cancel etc), different icons (ex: question, critical etc) and different boxes (input box, message box etc)

9.	Write a VB Script to extract month, year, day from current date.

10.	Write a VB Script to extract hour, minute and seconds from current time.

11.	Write a VB Script to calculate simple interest and compound interest using arithmetic operators.

12.	Write programs on string. (Ex: Accepting a string, calculating the position of the character in the string, Length of the string etc)

13.	Write programs to work with radio buttons and checkbox.

14.	Write ASP code to display current date and time.

15.	Write a program to pass the values to the next page using Submit button in ASP.

16. Write a program to establish the connection with the database and populating values in the combo box.

17. Write a program to display all the records in the table.

18. Write a program to insert the record into the table.

19. Write a program to display a registration form.

20. Write a program to store the data in the table.

21. Write PHP code to display date and time.

22. Write PHP code to create a form through which data can be uploaded into automated system.

23. Write PHP code to create a cookie.

24. Write PHP code to create a table and insert records into it.

25. Design your Polytechnic website, install it and maintain it.

Subject wise modification table for restructuring of the syllabus.

Branch…COMPUTER   ENGINEERING

Sub-Code as per C-05		Sub-Code as per C-09	CM-609
Name of the subject as per C-05		Name of the subject as per C-09	COMPUTER ANIMATION LAB
No. of periods allotted as per C-05		No. of periods allotted as per C-09	45

Sno	Name of the Chapter	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	Total new subject introduced in this curriculum					

Computer Animation Lab

Subject Title   : Computer Animation Lab
Subject Cod e   : CM – 609
Periods per Week   : 3
Periods per Semester   : 45

List of Experiments

1.0 Familiarization of Flash environment

2.0 Familiarization of Flash shortcuts

3.0 Familiarization of Flash templates

4.0 Creation of objects

5.0 Editing of objects

6.0 Working with frames

7.0 Working with layers

8.0 Familiarization of tweening(shape)

9.0 Familiarization of tweening(Motion)

Subject wise modification table for restructuring of the syllabus

Branch…… **Computer Engineering**

Sub-Code as per C-05	---------	Sub-Code as per C-09	CM -610
Name of the subject as per C-05	--------	Name of the subject as per C-09	English Communication Skills Level III
No. of periods allotted as per C-05	----------	No. of periods allotted as per C-09	30

Sno	Name of the Sub Topic	No. of periods As per C_05	Topics proposed for Addition / deletion	No. of periods added / deleted	No. of periods As per C_09	Justification for Addition / Deletion
1	Looking for a job-identifying sources-Filling in applications -writing a CV-writing a cover letter	---	----	---	10	Is need based
2	Job Interviews-preparing for an interview-responding appropriately -practice sessions	---	---	---	10	Is need based
3	At the workplace-work place etiquette-business communication -letter writing	----	---	---	10	Is need based
	TOTAL				30	

ENGLISH COMMUNICATION SKILLS LABORATORY –LEVEL III

Subject Title: English Communication Skills Laboratory –Level III

Subject Code : CM-610
Periods/Week : 02
Periods per semester : 30

Introduction:
To cater to the immediate needs of the final year students in terms of their communicative competence. The course would give them practice in grooming themselves.

TIME SCHEDULE

S. No	Major Topics	No. of Periods	Weightage of Marks
1	Looking for a job-identifying sources-Filling in applications -writing a CV-writing a cover letter	10	15
2	Job Interviews-preparing for an interview-responding appropriately -practice sessions	10	20
3	At the workplace-work place etiquette-business communication -letter writing	10	15
	Total	30	50

Objectives:
On completion of the course the student should be able to…

- gain confidence to attend job interviews
- Understand and go about the process of job searching
- Manage communication at the work place

- Understand the methodology of report writing

Course Contents:

- Theoretical input regarding interviews, project work planning, answering advertisements, and writing formal, informal and official letters.
- Activities that improve cooperative learning and soft skills.

Course Material:
Course material may be prepared by the faculty teaching English in the Polytechnics of A.P. in due course. Course material may comprise

- Text book
- CD for audio output
- CD – (e-lessons) (visual & audio)

Time needed to prepare the course material -------- 4 -6 months
Number of members on the team --------------------- 5

Scheme of Examination:

Name of Subject	Instruction periods per week	Total periods per Semester	Scheme of Examination			
			Duration	Sessional marks	End Exam marks	Total
Engg. Com Skills Level III	2	30	3	20	30	50

General Suggestions on Curriculum-09 -table for restructuring of the syllabus.

Branch……**COMPUTER ENGINEERING**

Institution Code:	Inst. Name & Address:	Name of the Staff - Member & Designation:

Sno	Suggestions about the New curriculum	Reasons / Comments / Remarks/Justification

NOTE: If necessary attach separate sheet.

SIGNATURE

CURRICULUM-2009
Subject wise Suggestions -table for restructuring of the syllabus.

Branch……COMPUTER ENGINEERING

Institution Code:	Inst. Name & Address:	Name of the Staff - Member & Designation:

Sub-Code as per C-09	
Name of the subject as per C-09	

Sno	Name of the Chapter	Topics proposed for Addition / deletion	Addition /Deletion	Reasons / Comments / Remarks/Justification

NOTE: If necessary attach separate sheet