

ACADEMIC REGULATIONS AND COURSE STRUCTURE

Common for:

**Civil Engineering &
Mechanical Engineering**

**For
B.TECH. FIRST YEAR DEGREE COURSE**



**MALLA REDDY ENGINEERING COLLEGE
(AUTONOMOUS)**

Maisammaguda, Dhulapally, Post Via (Hakimpet), Secunderabad- 500 014.

**MALLA REDDY ENGINEERING
COLLEGE
(AUTONOMOUS)**

**Maisammaguda, Dhulapally, Post Via (Hakimpet), Secunderabad- 500
014.**

Academic Regulations 2011 for B. Tech (Regular)

(Effective for the students admitted into I year from the
Academic Year 2011-2012 onwards)

1. Award of B.Tech. Degree

A student will be declared eligible for the award of the B. Tech. Degree of the Jawaharlal Nehru Technological University Hyderabad (JNTUH), Hyderabad if he fulfills the following academic regulations:

- i. Pursued a course of study for not less than four academic years and not more than eight academic years.**
- ii. Register for 200 credits and secure 200 credits**

- 2. Students, who fail to fulfill all the academic requirements for the award of the degree within eight academic years from the year of their admission, shall forfeit their seat in B.Tech course.**

3. Courses of study

Malla Reddy Engineering College offers the following courses of study leading to B.Tech. Degree of the Jawaharlal Nehru Technological University Hyderabad (JNTUH), Hyderabad.

1. Civil Engineering
2. Computer Science & Engineering
3. Electrical & Electronics Engineering
4. Electronics & Communications Engineering
5. Information Technology
6. Mechanical Engineering

4. Credits

	I Year		Semester	
	Periods / Week	Credits	Periods / Week	Credits
Theory	03	06	03	03
	02	04	04	04
Practical	03	04	03	02
Drawing	02T/03D	04	03	02
			06	04
Mini Project	--	--	--	02
Comprehensive Viva Voce	--	--	--	02
Seminar	--	--	06	02
Project	--	--	15	10

5. Distribution and Weightage of Marks

i) The performance of a student in each semester / I year

shall be evaluated subject – wise with a maximum of 100 marks for theory and 75 marks for practical subject. In addition, Industry oriented mini – project, seminar and project work shall be evaluated for 50, 50 and 200 marks respectively.

ii) For theory subjects the distribution shall be 25 marks for Internal Evaluation and 75 marks for the End – Examination.

iii) For theory subjects, during the semester there shall be 2 midterm examinations. Each mid term examination consists of one objective paper for 10 marks and one subjective paper for 10 marks with duration of 1hour 20 minutes (20 minutes for objective and 60 minutes for

subjective paper) and one Assignment for 5 marks Objective paper shall have 20 bits of multiple choice questions, fill-in the blanks, matching type questions for 10 marks.

Subjective paper shall contain 4 questions of which student has to answer 2 questions each carrying 5 marks. First midterm examination shall be conducted for 1-4 units of syllabus and

second midterm examination shall be conducted for 5-8 units. The total marks secured by the student in each mid term examination for 25 marks is considered and the better of the two mid term examinations shall be taken as the final marks secured by each candidate.

However for first year, there shall be 3 mid term examinations as in the above pattern and the average marks of the best two examinations secured in each subject shall be considered as final marks for sessionals.

iv) For practical subjects there shall be a continuous evaluation during the semester for 25 sessional marks and 50 end examination marks. Out of the 25 marks for internal, day-to-day work in the laboratory shall be evaluated for 15 marks and internal examination for practical shall be evaluated for 10 marks conducted by the concerned laboratory teacher. The end examination shall be conducted with external examiner and laboratory teacher. The external examiner shall be appointed from outside the college.

v) For the subject having design and / or drawing, (such as Engineering Graphics, Engineering Drawing, Machine Drawing) and estimation, the distribution shall be 25 marks for internal evaluation (15 marks for day-to-day work and 10

marks for internal tests) and 75 marks for end examination. There shall be two internal tests in a Semester and the better of the two shall be considered for the award of marks for internal tests. However in the I year class, there shall be three tests and the average of best two will be taken into consideration.

vi) There shall be an industry-oriented mini-Project, in collaboration with an industry of their specialization, to be taken up during the vacation after III year II Semester examination. However, the mini project and its report shall be evaluated with the project work in IV year II Semester. The industry oriented mini project shall be submitted in report form by the beginning of the IV year / I Sem and presented before the committee, at the time of IV year / II Sem and shall be evaluated for 50 marks. The committee shall consist of an external examiner, head of the department, the supervisor of mini project and a senior faculty member of the department. There shall be no internal marks for industry oriented mini project.

vii) There shall be a seminar presentation in IV year II Semester. For the seminar, the student shall collect the information on a specialized topic and prepare a technical report, showing his understanding over the topic, and submit to

the department, which shall be evaluated by a Departmental Committee consisting of Head of the department, seminar supervisor and a senior faculty member. The seminar report shall be evaluated for 50 marks. There shall be no external examination for seminar.

viii) There shall be a Comprehensive Viva-Voce at the end of IV year II semester. The Comprehensive Viva-Voce shall be conducted by a Committee consisting of (i) Head of the Department (ii) One Senior Faculty member of outside the college and, one faculty member from the Department. The Comprehensive Viva-Voce shall be aimed to assess the students' understanding in various subjects he /she studied during the B.Tech. course of study. The Comprehensive Viva-Voce shall be evaluated for 100 marks by the Committee. There are no internal marks for the Comprehensive viva-voce.

ix) Out of a total of 200 marks for the project work, 50 marks shall be for Internal Evaluation and 150 marks for the End Semester Examination. The End Semester Examination (viva-voce) shall be conducted by the same committee appointed for industry oriented mini project. In addition the project supervisor shall also be included in the committee. The topics for industry oriented mini project, seminar and project work

shall be different from each other. The evaluation of project work shall be conducted at the end of the IV year. The Internal Evaluation shall be on the basis of two seminars given by each student on the topic of his project.

x) Laboratory marks and the sessional marks awarded are subject to scrutiny and scaling by the college wherever necessary. In such cases, the sessional and laboratory marks awarded will be referred to a Committee. The Committee will arrive at a scaling factor and the marks will be scaled as per the scaling factor. The recommendations of the Committee are final and binding. The laboratory records and internal test papers shall be preserved for three years and shall be produced to Committees as and when the same is asked for.

6. Attendance Requirements:

i) A student shall be eligible to appear for final examinations if he acquires a **minimum of 75%** of attendance in aggregate of all the subjects.

ii) Shortage of Attendance below 65% in aggregate shall in NO case be condoned.

iii) Condonation of shortage of attendance in aggregate **up to 10%** (65% and above and below 75%) in each semester or I year may be granted by the College Academic Committee.

iv) A student shall not be promoted to the next semester unless he satisfies the attendance requirement of the present semester / I year, as applicable. They may seek re-admission for that semester / I year when offered next.

v) Students whose shortage of attendance is not condoned in any semester / I year are not eligible to take their end examination of that class and their registration shall stand cancelled.

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

7. Minimum Academic Requirements

The following academic requirements have to be satisfied in addition to the attendance requirements mentioned in item no.6

i) A student shall be deemed to have satisfied the minimum academic requirements and earned the credits allotted to each theory or practical design or drawing subject or project if he secures not less than 35% of marks in the end examination and a minimum of 40% of marks in the sum total of the internal evaluation and end examination taken together.

ii) A student shall be promoted from II to III year only if he fulfils the academic requirement of **37** credits from one regular and one supplementary examinations of I year, and one regular

examination of II year I semester irrespective of whether the candidate takes the examination or not.

iii) A student shall be promoted from third year to fourth year only if he fulfils the academic requirements of total **62** credits from the following examinations, whether the candidate takes the examinations or not.

a) Two regular and two supplementary examinations of I year.

Two regular and one supplementary examinations of II year I semester.

b) One regular and one supplementary examinations of II year II semester.

c) One regular examination of III year I semester.

iv) A student shall register and put up minimum attendance in all 200 credits and earn the 200 credits. Marks obtained in all 200 credits shall be considered for the calculation of percentage of marks.

v) Students who fail to earn 200 credits as indicated in the course structure within eight academic years from the year of their admission shall forfeit their seat in B.Tech course and their admission shall stand cancelled.

8. Course pattern:

i) The entire course of study is of four academic years. The first year shall be on yearly pattern and the second, third and fourth years on semester pattern.

ii) A student eligible to appear for the end examination in a subject, but absent at it or has failed in the end examination may appear for that subject at the supplementary examination.

iii) When a student is detained due to lack of credits / shortage of attendance he may be re-admitted when the semester / year is offered after fulfilment of academic regulations, whereas the academic regulations hold good with the regulations he was first admitted.

9. Award of Class:

After a student has satisfied the requirements prescribed for the completion of the program and is eligible for the award of B. Tech. Degree he shall be placed in one of the following four classes:

Class Awarded	% of marks to be secured	From the aggregate marks secured for the 200 Credits.
First Class with Distinction	70% and above	
First Class	Below 70% but not less than 60%	

Second Class	Below 60% but not less than 50%	
Pass Class	Below 50% but not less than 40%	

(The marks in internal evaluation and end examination shall be shown separately in the marks memorandum)

10. Minimum Instruction Days:

The minimum instruction days for each semester / I year shall be 90/180 clear instruction days.

11. There shall be no branch transfers after the completion of admission process.

12. There shall be no place transfer within the Constituent Colleges and Units of Jawaharlal Nehru Technological University Hyderabad.

13. General:

i) Where the words “he”, “him”, “his”, occur in the regulations, they include “she”, “her”, “hers”.

ii) The academic regulation should be read as a whole for the purpose of any interpretation.

iii) In the case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Vice-Chancellor is final.

iv) The University may change or amend the academic regulations or syllabi at any time and the changes or

amendments made shall be applicable to all the students with effect from the dates notified by the University.

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Academic Regulations for B. Tech. (Lateral Entry Scheme)

(Effective for the students getting admitted into II year from the Academic Year 2009-2010 and onwards)

1. The Students have to acquire 150 credits from II to IV year of B.Tech. Program (Regular) for the award of the degree. Register for **150** credits and secure **150** credits.
2. Students, who fail to fulfil the requirement for the award of the degree in 6 consecutive academic years from the year of admission, shall forfeit their seat.
3. The same attendance regulations are to be adopted as that of B. Tech. (Regular).
4. **Promotion Rule:**
A student shall be promoted from third year to fourth year only if he fulfils the academic requirements of 37 credits from the examinations.
 - a. Two regular and one supplementary examinations of II year I semester.
 - b. One regular and one supplementary examinations of

II year II semester.

c. One regular examination of III year I semester.

5. Award of Class:

After a student has satisfied the requirements prescribed for the completion of the program and is eligible for the award of B. Tech. Degree he shall be placed in one of the following four classes:

First Class with Distinction	70% and above	From the aggregate marks secured for 150 Credits. (i.e. II year to IV year)
First Class	Below 70% but not less than 60%	
Second Class	Below 60% but not less than 50%	
Pass Class	Below 50% but not less than 40%	

(The marks in internal evaluation and end examination shall be shown separately in the marks memorandum)

6. All other regulations as applicable for B. Tech. Four-year degree course (Regular) will hold good for B. Tech. (Lateral Entry Scheme)

MALPRACTICES RULES

DISCIPLINARY ACTION FOR / IMPROPER CONDUCT IN EXAMINATIONS

	Nature of Malpractices/Improper conduct	Punishment
1.(a)	Possesses or keeps accessible in examination hall, any paper, note book, programmable calculators, Cell phones, pager, palm computers or any other form of material concerned with or related to the subject of the examination (theory or practical) in which he is appearing but has not made use of (material shall include any marks on the body of the candidate which can be used as an aid in the subject of the examination)	Expulsion from the examination hall and cancellation of the performance in that subject only.
(b)	Gives assistance or guidance or receives it from any other candidate orally or by any other body language methods or communicates through cell	Expulsion from the examination hall and cancellation of the performance in that subject only of all the candidates involved. In case of an outsider, he will be

	phones with any candidate or persons in or outside the exam hall in respect of any matter.	handed over to the police and a case is registered against him.
2.	Has copied in the examination hall from any paper, book, programmable calculators, palm computers or any other form of material relevant to the subject of the examination (theory or practical) in which the candidate is appearing.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted to appear for the remaining examinations of the subjects of that Semester/year. The Hall Ticket of the candidate is to be cancelled and sent to the University.
3.	Impersonates any other candidate in connection with the examination.	The candidate who has impersonated shall be expelled from examination hall. The candidate is also debarred and forfeits the seat. The performance of the original candidate who has been impersonated, shall be cancelled in all the subjects of the examination (including practicals and project work) already appeared and shall not be allowed to appear for examinations of the remaining subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all University examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat.

		If the imposter is an outsider, he will be handed over to the police and a case is registered against him.
4.	Smuggles in the Answer book or additional sheet or takes out or arranges to send out the question paper during the examination or answer book or additional sheet, during or after the examination.	Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all University examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat.
5.	Uses objectionable, abusive or offensive language in the answer paper or in letters to the examiners or writes to the examiner requesting him to award pass marks.	Cancellation of the performance in that subject.
6.	Refuses to obey the orders of the Chief Superintendent/Assistant – Superintendent / any officer on duty or misbehaves or creates disturbance of any kind in and	In case of students of the college, they shall be expelled from examination halls and cancellation of their performance in that subject and all other subjects the candidate(s) has (have) already appeared and shall not be permitted to appear for the remaining examinations of the

around the examination hall or organizes a walk out or instigates others to walk out, or threatens the officer-in charge or any person on duty in or outside the examination hall of any injury to his person or to any of his relations whether by words, either spoken or written or by signs or by visible representation, assaults the officer-in-charge, or any person on duty in or outside the examination hall or any of his relations, or indulges in any other act of misconduct or mischief which result in damage to or destruction of property in the examination hall or any part of the College campus or engages in any other act which in the opinion of the officer on duty amounts to use of unfair means or misconduct or has the tendency to disrupt the orderly conduct of the examination.	subjects of that semester/year. The candidates also are debarred and forfeit their seats. In case of outsiders, they will be handed over to the police and a police case is registered against them.
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7.	Leaves the exam hall taking away answer script or intentionally tears of the script or any part thereof inside or outside the examination hall.	Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all University examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat.
8.	Possess any lethal weapon or firearm in the examination hall.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred and forfeits the seat.
9.	If student of the college, who is not a candidate for the particular examination or any person not connected with the college indulges in any malpractice or improper conduct mentioned in clause 6 to 8.	Student of the colleges expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the

		subjects of that semester/year. The candidate is also debarred and forfeits the seat. Person(s) who do not belong to the College will be handed over to police and, a police case will be registered against them.
10.	Comes in a drunken condition to the examination hall.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year.
11.	Copying detected on the basis of internal evidence, such as, during valuation or during special scrutiny.	Cancellation of the performance in that subject and all other subjects the candidate has appeared including practical examinations and project work of that semester/year examinations.
12.	If any malpractice is detected which is not covered in the above clauses 1 to 11 shall be reported to the college for further action to award suitable punishment.	

Malpractices identified by squad or special invigilators

1. Punishments to the candidates as per the above guidelines.

**MALLA REDDY ENGINEERING COLLEGE
(AUTONOMOUS)**

B.Tech Civil / Mechanical Engineering

I YEAR COURSE STRUCTURE

Code	Subject	L	T/P/D	C
EN1Y1101	English	2	1	4
MA1Y1102	Mathematics-I	3	1	6
CM1Y1103	Engineering Mechanics	3	1	6
PH1Y1104	Engineering Physics	2	1	4
CH1Y1105	Engineering Chemistry	2	1	4
CS1Y1106	Computer Programming & Data Structures	3	--	6
CM1Y1107	Engineering Graphics	2	3	4
CS1Y1108	Computer Programming Lab	--	3	4
PCH1Y1109	Engineering Physics & Engineering Chemistry Lab	--	3	4
EN1Y1110	English Language Communication Skills Lab	--	3	4
MCS1Y1111	Engineering Workshop/IT Workshop	--	3	4
	Total	17	20	50

2011-2012

Code: EN1Y1101

**MALLA REDDY ENGINEERING COLLEGE
(Autonomous)**

B.Tech I Year.

L T/P/D C
2 1/-/- 4

**ENGLISH
(Common for ME, CE, EEE, ECE, CSE & IT)**

1. INTRODUCTION:

In the English classes, the focus should be on the skills of reading, writing, listening and speaking and for this the teachers should use the text prescribed for detailed study. For example, the students should be encouraged to read the texts/selected paragraphs silently. The teachers can ask comprehension questions to stimulate discussion and based on the discussions students can be made to write short paragraphs/essays etc.

The text for non-detailed study is for extensive reading/reading for pleasure by the students. Hence, it is suggested that they read it on their own with topics selected for discussion in the class. The time should be utilized for working out the exercises given after each section , as also for supplementing the exercises with authentic materials of a similar kind for example, from newspaper articles, advertisements, Promotional

material etc.. However, the stress in this syllabus is on skill development and practice of language skills.

2. OBJECTIVES:

- a. To improve the language proficiency of the students in English with emphasis on LSRW skills.
- b. To equip the students to study academic subjects with greater facility through the theoretical and practical components of the English syllabus.
- c. To develop the study skills and communication skills in formal and informal situations.

Listening Skills:

Objectives

1. To enable students to develop their listening skill so that they may appreciate its role in the LSRW skills approach to language and improve their pronunciation
 2. To equip students with necessary training in listening so that can comprehend the speech of people of different backgrounds and regions Students should be given practice in listening to the sounds of the language to be able to recognise them, to distinguish between them to mark stress and recognise and use the right intonation in sentences.
- Listening for general content
 - Listening to fill up information
 - Intensive listening

 - Listening for specific information

Speaking Skills:

Objectives

1. To make students aware of the role of speaking in English and its contribution to their success.
 2. To enable students to express themselves fluently and appropriately in social and professional contexts.
- Oral practice
 - Describing objects/situations/people
 - Role play – Individual/Group activities (Using exercises from all the nine units of the prescribed text:

Enjoying Everyday English.

- Just A Minute (JAM) Sessions.

Reading Skills:

Objectives

1. To develop an awareness in the students about the significance of silent reading and comprehension.
 2. To develop the ability of students to guess the meanings of words from context and grasp the overall message of the text, draw inferences etc.
- Skimming the text
 - Understanding the gist of an argument
 - Identifying the topic sentence

- Inferring lexical and contextual meaning
- Understanding discourse features
- Recognizing coherence/sequencing of sentences

NOTE : *The students will be trained in reading skills using the prescribed text for detailed study. They will be examined in reading and answering questions using ‘unseen’ passages which may be taken from the non-detailed text or other authentic texts, such as magazines/newspaper articles.*

Writing Skills :

Objectives

1. To develop an awareness in the students about writing as an exact and formal skill
2. To equip them with the components of different forms of writing, beginning with the lower order ones.

- Writing sentences
- Use of appropriate vocabulary
- Paragraph writing
- Coherence and cohesiveness
- Narration / description
- Note Making
- Formal and informal letter writing
- Editing a passage

4. TEXTBOOKS PRESCRIBED:

In order to improve the proficiency of the student in the acquisition of the four skills mentioned above, the following texts and course content, divided into **Eight Units**, are prescribed:

For Detailed study

1 First Text book entitled “Enjoying Everyday English”, Published by Sangam Books, Hyderabad.

For Non-detailed study

1. Second text book “Inspiring Speeches and Lives”, Published by Maruthi Publications, Guntur

For workbook study

The Grammar and Composition work book titled “A Practice Book on Grammar and Composition” published by Pearson, Delhi.

Syllabus:

Unit –I

1. Chapter entitled *Mother Teresa* from “Inspiring Speeches and Lives”, Published by Maruthi Publications, Guntur
- 2 Chapter entitled *Swami Vivekananda* from “Inspiring Speeches and Lives”, Published by Maruthi Publications, Guntur

Unit –II

1. Chapter entitled *I Have a Dream* by Martin Luther King from “Inspiring Speeches and Lives”, Published by Maruthi Publications, Guntur
- 2 Chapter entitled *Sam Pitroda* from “Inspiring Speeches and Lives”, Published by Maruthi Publications, Guntur

Unit –III

- 1 Chapter entitled *Heaven’s Gate* from “Enjoying Everyday English”, Published by Sangam Books, Hyderabad
- 2 Chapter entitled *Sir CV Raman: A Pathbreaker in the Saga of Indian Science* from “Enjoying Everyday English”, Published by Sangam Books, Hyderabad

Unit –IV

1. Chapter entitled *The Connoisseur* from “Enjoying Everyday English”, Published by Sangam Books, Hyderabad
- 2 Chapter entitled *The Cuddalore Experience* from “Enjoying Everyday English”, Published by Sangam Books, Hyderabad

Unit –V

1. Chapter entitled *Bubbling Well Road* from “Enjoying Everyday English”, published by sangam books, Hyderabad.
2. Chapter entitled *Odds Against Us* from “Enjoying Everyday English”, Published by Sangam Books, Hyderabad

Unit – VI

Practice Exercises on Remedial Grammar covering

Common errors in English, Subject-Verb agreement, Use of Articles and Prepositions, Tense and aspect, Simple, Compound and Complex sentences, Direct and Indirect speech, Conditional Clauses.

Vocabulary development covering

Synonyms & Antonyms, one-word substitutes, prefixes & suffixes, Idioms & phrases, words often confused.

Unit – VII

Exercises on

Reading and Writing Skills

Reading Comprehension

Situational dialogues

Letter writing

Essay writing

Unit-VIII

Note making and Note Taking

Memo Writing/Notice/Circular

Summarizing/Abstract Writing

Report Writing

REFERENCES:

1. **Innovate with English: A Course in English for Engineering Students**, edited by T Samson, Foundation Books
2. English Grammar Practice, **Raj N Bakshi, Orient Longman.**
3. **Effective English, edited** by E Suresh Kumar, A RamaKrishna Rao, P Sreehari, Published by Pearson
4. Handbook of English Grammar & Usage, **Mark Lester and Larry Beason, Tata Mc Graw –Hill.**
5. Spoken English, **R.K. Bansal & JB Harrison, Orient Longman.**
6. Technical Communication, **Meenakshi Raman, Oxford University Press**
7. Objective English **Edgar Thorpe & Showick Thorpe, Pearson Education**
8. Grammar Games, **Renuvolcuri Mario, Cambridge University Press.**
9. Murphy’s English Grammar with CD, **Murphy, Cambridge University Press.**

10. Everyday Dialogues in English, **Robert J. Dixson, Prentice Hall India Pvt Ltd.,**
11. ABC of Common Errors **Nigel D Turton, Mac Millan Publishers.**
12. Basic Vocabulary **Edgar Thorpe & Showick Thorpe, Pearson Education**
13. Effective Technical Communication, **M Ashraf Rizvi, Tata Mc Graw –Hill.**
14. An Interactive Grammar of Modern English, **Shivendra K. Verma and Hemlatha Nagarajan , Frank Bros & CO**
15. A Communicative Grammar of English, **Geoffrey Leech, Jan Svartvik, Pearson Education**
16. Enrich your English, **Thakur K B P Sinha, Vijay Nicole Imprints Pvt Ltd.,**
17. A Grammar Book for You And I, **C. Edward Good, MacMillan Publishers.**

2011-2012

Code: MA1Y1102

MALLA REDDY ENGINEERING COLLEGE
(Autonomous)

B.Tech I Year.

L	T/P/D	C
3	1 / - / -	6

MATHEMATICS-I
(Common for ME, CE, EEE, ECE, CSE & IT)

UNIT – I

Differential equations of first order and first degree – exact, linear and Bernoulli. Applications to orthogonal trajectories, Newton’s Law of cooling, Law of natural growth and decay.

UNIT – II

Non-homogeneous linear differential equations of second and higher order with constant coefficients with RHS term of the type e^{ax} , $\sin ax$, $\cos ax$, polynomials in x , $e^{ax} V(x)$, $xV(x)$, method of variation of parameters. Applications to Bending of beams, Simple Harmonic Motion, Electrical Circuits.

UNIT – III

Rolle’s Theorem – Lagrange’s Mean Value Theorem – Cauchy’s mean value Theorem – Generalized Mean Value theorem (all theorems without proof) Functions of several variables – Functional dependence- Jacobian- Maxima and

Minima of functions of two variables with constraints and without constraints

UNIT – IV

Radius, Centre and Circle of Curvature – Evolutes and Envelopes Curve tracing – Cartesian, polar and parametric curves.

UNIT – V

Applications of integration to lengths, volumes and surface areas in Cartesian and polar coordinates multiple integrals - double and triple integrals – change of variables – change of order of integration.

UNIT – VI

Vector Calculus: Gradient- Divergence- Curl and their related properties of sums- products- Laplacian and second order operators. Vector Integration - Line integral – work done – Potential function – area- surface and volume integrals Vector integral theorems: Green's theorem-Stoke's and Gauss's Divergence Theorem (With out proof). Verification of Green's - Stoke's and Gauss's Theorems.

UNIT – VII

Laplace transform of standard functions – Inverse transform – first shifting Theorem, Transforms of derivatives and integrals – Unit step function – second shifting theorem – Dirac's delta function ,– Convolution theorem – Periodic function - Differentiation and integration of transforms, Transfer functions and elementary properties -Application of Laplace

transforms to ordinary differential equations Partial fractions- Heaviside's Partial fraction expansion theorem.

UNIT – VIII

Sequences – series – Convergences and divergence – Ratio test – Comparison test – Integral test – Cauchy's root test – Raabe's test – Absolute and conditional convergence

TEXT BOOKS:

1. Engineering Mathematics – I by T.K. V. Iyengar, B. Krishna Gandhi & Others, S. Chand.Publications
2. Engineering Mathematics – I by B.V.Ramana,Tata Mcgrawhill publications.

REFERENCES:

1. Engineering Mathematics – I by E.Rukmangadachari, Pearson Education Ltd.
2. Engineering Mathematics – I by P.B. Bhaskara Rao, S.K.V.S. Rama Chary and M. Bhujanga Rao.
3. Engineering Mathematics – I by D. S. Chandrasekhar, Prison Books Pvt. Ltd.
4. Engineering Mathematics – I by G. Shanker Rao & Others I.K. International Publications.
5. Higher Engineering Mathematics – B.S. Grewal, Khanna Publications.
6. Engineering Mathematics – I by Shanaz Bathul
7. Engineering Mathematics – I by C.Shankaraiah, VGS Booklinks
8. Engineering Mathematics – I by Sarveswara Rao Koneru, Universities Press, Hyderabad

9. A Text Book of KREYSZIG'S Engineering Mathematics, Vol-1 Dr .A. Ramakrishna Prasad. WILEY Publications.

2011-2012

Code: CM1Y1103

MALLA REDDY ENGINEERING COLLEGE
(Autonomous)

B.Tech I Year.	L	T/P/D	C
	3	1 / - / -	6

ENGINEERING MECHANICS
(Common for ME & CE)

UNIT – I

Introduction to Engineering. Mechanics – Basic Concepts.
Systems of Forces: Coplanar Concurrent Forces – Components in Space – Resultant – Moment of Force and its Application – Couples and Resultant of Force Systems.

UNIT – II

Equilibrium of Systems of Forces : Free Body Diagrams, Equations of Equilibrium of Coplanar Systems, Spatial Systems for concurrent forces. Lamis Theorem, Graphical method for the equilibrium of coplanar forces, Converse of the law of Triangle of forces, converse of the law of polygon of forces condition of equilibrium.

UNIT – III

Friction: Types of Friction – Limiting Friction – Static and Dynamic Frictions –Laws of Friction – Application of Friction – Ladder, Wedge and Screw.

UNIT-IV

Centroid : Centroids of simple figures (from basic principles) – Centroids of Composite Figures
Centre of Gravity: Centre of gravity of simple body (from basis principles), centre of gravity of composite bodies, Pappus theorem.

UNIT – V

Area moment of Inertia: Definition – Polar Moment of Inertia, Transfer Theorem, Moments of Inertia of Composite Figures, Products of Inertia, Transfer Formula for Product of Inertia.

Mass Moment of Inertia : Moment of Inertia of Masses, Transfer Formula for Mass Moments of Inertia, mass moment of inertia of composite bodies.

UNIT – VII

Kinematics: Rectilinear and Curvilinear motions – Velocity and Acceleration – Motion of Rigid Body –Types and their Analysis in Planar Motion.

Kinetics: Analysis as a Particle and Analysis as a Rigid Body in Translation – Central Force Motion – Equations of Plane Motion – Fixed Axis Rotation – Rolling Bodies.

UNIT – VIII

Principle of virtual work: Equilibrium of ideal systems, efficiency of simple machines, stable and unstable Equilibriums

Mechanical Vibrations: Definitions, Concepts. SHM

TEXT BOOKS:

1. Engineering. Mechanics / Timoshenko & Young.
2. Engineering Mechanics / Ferdinand . L. Singer / Harper – Collins

REFERENCES :

1. Engineering. Mechanics / S.S. Bhavikatti & J.G. Rajasekharappa
2. Engineering Mechanics / K. Vijaya Kumar Reddy / J. Suresh Kumar
3. Engineering. Mechanics / Irving. H. Shames, Prentice – Hall.
4. Text Book of Engineering Mechanics/ Y.V.D. Rao, and others, Academic Publishers.
5. Engineering. Mechanics / K L Kumar / Tata McGraw Hill
6. Mathematical Methods by V. Ravindranath, Etl, Himalaya Publications. 2009-2010
7. A Text Book of KREYSZIG'S Mathematical Methods, Dr .A. Ramakrishna Prasad. WILEY publications

2011-2012

Code: PH1Y1104

MALLA REDDY ENGINEERING COLLEGE (Autonomous)

B.Tech I Year.	L	T/P/D	C
	2	1/-/-	4

ENGINEERING PHYSICS (Common for ME, CE, EEE, ECE, CSE & IT)

UNIT-I

1. Oscillations and Acoustics:

Introduction, Differential equation for S.H.M. and its solution, velocity and acceleration, expression for period and frequency, graphs of displacement, velocity and acceleration, energy of the oscillator, Phasor, Damped vibrations – under damping, over damping and critical damping, energy and amplitude of a damped oscillator, Forced vibrations – Resonance, amplitude and phase, energy considerations, power dissipation, sharpness of resonance, electrical vibrations, free oscillations in a circuit containing inductance, capacitance and resistance.

Basic Requirement of Acoustically Good Hall, Reverberation and Time of Reverberation, Sabine's Formula for Reverberation Time (Qualitative Treatment), Factors Affecting The Architectural Acoustics and their Remedies. Acoustic Quieting: Aspects of Acoustic Quieting, Methods of Quieting,

Unit – II

2. Bonding in Solids:

Ionic Bond, Covalent Bond, Metallic Bond, Hydrogen Bond, Vander-Waal's Bond, Calculation of Cohesive Energy.

3. Crystallography and Crystal Structures:

Space Lattice, Unit Cell, Lattice Parameters, Crystal Systems, Bravais Lattices, Miller Indices, Crystal Planes and Directions, Inter Planar Spacing of Orthogonal Crystal Systems, Atomic Radius, Co-ordination Number and Packing Factor of SC, BCC, FCC, Diamond and hcp Structures, Basic Principles of X – ray diffraction, Bragg's Law

4. Defects in Crystals:

Point Defects: Vacancies, Substitutional, Interstitial, Frenkel and Schottky Defects; Qualitative treatment of line (Edge and Screw Dislocations) Defects, Burger's Vector, Surface Defects and Volume Defects.

UNIT-III

5. Principles of Quantum Mechanics:

Waves and Particles, de Broglie Hypothesis, Matter Waves, Davisson and Germer's Experiment, G. P. Thomson Experiment, Heisenberg's Uncertainty Principle, Schrödinger's Time Independent Wave Equation - Physical Significance of the Wave Function - Particle in One Dimensional Potential Box.

6. Band Theory of Solids:

Electron in a periodic Potential, Bloch Theorem, Kronig-Penny Model (Qualitative Treatment), Origin of Energy Band Formation in Solids, Classification of Materials into Conductors, Semi Conductors & Insulators, Concept of Effective Mass of an Electron and Hole.

UNIT-IV

7. Semiconductor Physics:

Fermi Level in Intrinsic and Extrinsic Semiconductors, Intrinsic Semiconductors and Carrier Concentration, Extrinsic Semiconductors and Carrier Concentration, Equation of Continuity, Direct & Indirect Band Gap Semiconductors, Hall Effect.

8. Sensors: (Qualitative Treatment)

Basic working Principle of Sensors, Self generating sensor, Modulating Sensor, **Thermal sensors** - Thermistor, Thermocouple; **Mechanical sensors** – Strain gauge; **Magnetic sensors** – Hall Plate, Magnetic resistor; **Chemical sensors** – Metal oxide sensor; **Optical sensors** – Photo detectors

UNIT-V

9. Dielectric Properties:

Electric Dipole, Dipole Moment, Dielectric Constant, Polarizability, Electric Susceptibility, Displacement Vector, Electronic, Ionic and Orientation Polarizations and Calculation of Polarizabilities - Internal Fields in Solids, Clausius - Mossotti Equation, Piezo-electricity, Pyro-electricity and Ferro- electricity.

UNIT-VI

10. Magnetic Properties:

Permeability, Field Intensity, Magnetic Field Induction, Magnetization, Magnetic Susceptibility, Origin of Magnetic Moment, Bohr Magneton, Classification of Dia, Para and Ferro Magnetic Materials on the basis of Magnetic Moment, Domain

Theory of Ferro Magnetism on the basis of Hysteresis Curve, Soft and Hard Magnetic Materials, Properties of Anti-Ferro and Ferri Magnetic Materials, Ferrites and their Applications, Concept of Perfect Diamagnetism, Meissner Effect, Magnetic Levitation, Applications of Superconductors.

UNIT-VII

11. Lasers:

Characteristics of Lasers, Spontaneous and Stimulated Emission of Radiation, Meta-stable State, Population Inversion, Lasing Action, Einstein's Coefficients and Relation between them, Helium-Neon Laser, Carbon Dioxide Laser, Semiconductor Diode Laser, Applications of Lasers – Data storage, Medical, Military, Scientific and industrial.

12. Fiber Optics:

Principle of Optical Fiber, Acceptance Angle and Acceptance Cone, Numerical Aperture, Types of Optical Fibers and Refractive Index Profiles, Attenuation in Optical Fibers, Application of Optical Fibers – Medical, Level sensor, Communication system.

UNIT-VIII

13. Nanotechnology:

Origin of Nanotechnology, Nano Scale, Surface to Volume Ratio, Quantum Confinement, Bottom-up Fabrication: Sol-gel, Precipitation, Combustion Methods; Top-down Fabrication: Chemical Vapour Deposition, Physical Vapour Deposition, Pulsed Laser Vapour Deposition Methods, Characterization(XRD&TEM) and Applications.

TEXT BOOKS:

1. Modern Engineering Physics by K. Vijaya Kumar, S. Chandralingam: S. Chand & Co.Ltd
2. Engineering Physics – P.K.Palanisamy - SciTech Publications Pvt. Ltd., 5th Print 2008.
3. Applied Physics – S.O. Pillai & Sivakami-New Age International (P) Ltd., 2nd Edition 2008.
4. Physics of Semiconductor devices - S.M sze and Kwok K . Ng (Wiley Student Edition) – Third edition.
5. Mechanics of particles, Waves & Oscillations by Anwar Kamal, New Age International Ltd.

REFERENCES:

1. Solid State Physics – M. Armugam (Anuradha Publications).
2. A Text Book of Engg Physics – M. N. Avadhanulu & P. G. Khsirsagar– S. Chand & Co. (for acoustics).
3. Nanotechnology – M.Ratner & D. Ratner (Pearson Ed.).
4. Introduction to Solid State Physics – C. Kittel (Wiley Eastern).
5. Solid State Physics – A.J. Dekker (Macmillan).
6. Applied Physics – T. Bhima Shankaram & G. Prasad (B.S. Publications, Third Edition 2008).
7. A text book of Engineering Physics – S.P. Basvaraju – Subhas store
8. Electricity and magnetism by Edward Purcell – Berkeley series vol 2

2011-2012

Code: CH1Y1105

MALLA REDDY ENGINEERING COLLEGE
(Autonomous)

B.Tech I Year.

L	T/P/D	C
2	1/- / -	4

ENGINEERING CHEMISTRY
(Common for ME, CE, EEE, ECE, CSE & IT)

UNIT I:

Water: Introduction, Hardness: Causes, expression of hardness - units - types of hardness, estimation of temporary & permanent hardness of water, numerical problems. Boiler troubles - Scale & sludge formation, caustic embrittlement, corrosion, priming & foaming Softening of water (Internal & external treatment-Lime soda, Zeolite, Ion exchange process and Numerical problems) Reverse osmosis, electro dialysis.

UNIT II:

Corrosion and its corrosion control: Introduction, causes and different types of corrosion and effects of corrosion, theories of corrosion - Chemical, Electrochemical corrosion, corrosion reactions, factors affecting corrosion - Nature of metal - galvanic series, purity of metal, nature of oxide film, nature of corrosion product. Nature of environment-effect of temperature, effect of pH, Humidity, effect of oxidant. Corrosion control methods - Cathodic protection, sacrificial anode, impressed current cathode. Surface coatings - methods of application on metals- hot dipping, galvanizing, tinning, cladding, electroplating Organic surface coatings - paints constituents and functions.

UNIT III:

Polymers: Types of Polymerization, Mechanism Chain growth & Step growth).Plastics: Thermoplastic resins & Thermo set resins. Compounding & fabrication of plastics, preparation, properties, engineering applications of: polyethylene, PVC, PS, Teflon, Bakelite, Nylon. Rubber - Natural rubber, vulcanization. Elastomers - Buna-s, Butyl rubber, Thiokol rubbers, Fibers - polyester,. Structure and property relation .Explanation of mechanical, electrical, optical and chemical properties. Fiber reinforced plastics (FRP), applications

UNIT IV:

Semi Conductor Chemistry: Intrinsic and extrinsic semiconductors, n-type and p-type semiconductors, preparation of ultra pure silicon and germanium.

Introduction and fundamental aspects of Optical fibers, fullerenes and organic electronic materials.

Introduction and fundamental aspects of Conducting Polymers: Poly acetylene, conduction, doping, and applications.

Liquid Crystal polymers : Characteristics and uses.

UNIT V:

Surface Chemistry: Solid surfaces, types of adsorption, Langmuir adsorption isotherm, & application adsorption, classification of colloids, Electrical, mechanical & optical properties micelles, applications of colloids in industry.

Nano materials: Introduction, basic methods of preparation and applications of nano materials.

UNIT VI:

Energy sources: fuels, classification - conventional fuels (solid, liquid, gaseous) Solid fuels - coal - analysis - proximate and ultimate analysis and their significance

Liquid fuels - primary - petroleum -refining of petroleum-cracking knocking synthetic petrol - Bergius and Fischer Tropsech's process; Gaseous fuels - natural gas, analysis of flue gas by Orsat's method Combustion - problems, Calorific value of fuel - HCV, LCV, determination of calorific value by Junker's gas calorie meter.

UNIT VII:

Phase rule: Definitions - phase, component, degree of freedom, phase rule equitation. Phase diagrams - one component system: water system. Two component system lead- silver system. Alloys: introduction, classification and properties.

UNIT VIII:

Materials Chemistry: Cement: composition of Portland cement, manufacture of port land Cement, setting & hardening of cement (reactions). Lubricants: Criteria of a good lubricant, mechanism, properties of lubricants: Cloud point, pour point, flash & fire point, Viscosity. Refractories: Classification, Characteristics of a good refractory. Insulators & conductors: Classification of insulators characteristics of thermal & electrical insulators and applications . Superconductors – applications of Nb-Sn alloy, and YBa₂ Cu₃ O_{7-x}.

Text Books:

- 1 Text Book of Engineering Chemistry by Shasi Chawla, Dhantpat Rai publishing Company, New Delhi (2008).
- 2 Engineering Chemistry by P.C Jain & Monica Jain, Dhanpatrai Publishing Company (2008).
- 3 Engineering Chemistry by Daniel Yesudian, Anuradha Publications , Chennai

Reference Books:

- 1.Engineering Chemistry by B. Siva Shankar, Mc.Graw Hill Publishing Company Limited ,New Delhi -2006.
- 2.Engineing Chemistry by J.C. Kuriacase & J. Rajaram, Tata McGraw Hills co., New Delhi (2004).
- 3.Chemistry of Engineering Materials by CV garwal, C.P Murthy, A.Naidu, BS Publications.
- 4.Chemistry of Engineering Meterials by R.P Mani and K.N.Mishra, CENGAGE learning.
- 5.Applied Chemistry - A text for Engineering & Technology - Springar (2005).
- 6.Engineering Chemistry by R. Gopalan, D. Venkatappayya, D.V. Sulochana Nagarajan Vikas Publishers (2008).
7. Text of Engineering Chemistry by S.S. Dara & Mukkati S. Chand & Co,New Delhi (2006)
- 8.Text Books of Engineering Chemistry by C.P. Murthy, C.V. Agarwal, A. Naidu B.S. Publications, Hyderabad .

2011-2012

Code: CS1Y1106

MALLA REDDY ENGINEERING COLLEGE
(Autonomous)

B.Tech I Year

L	T/P/D	C
3	-/-/-	6

COMPUTER PROGRAMMING AND DATA STRUCTURES

(Common for ME, CE, EEE, ECE, CSE & IT)

UNIT-I

Introduction to Computers: Introduction to Computers – Computer Systems, Computing Environments, Computer Languages, Creating and running programmes, Algorithms, Pseudo code, flow charts, Software Development Method, applying the software development method.

UNIT-II

Introduction to C Language – Background, Simple C Programme, Identifiers, Basic data types, Variables, Constants. Input/Output, Operators, Expressions, Precedence and Associativity, Expression Evaluation, Type conversions, Bit wise operators, Statements, Simple C Programming examples. Selection Statements – if and switch statements, Repetition statements – while, for, do-while statements, Loop examples, other statements related to looping – break, continue, goto, Simple C Programming examples.

UNIT-III

Designing Structured Programmes, Functions, basics, user defined functions, inter function communication.

Standard functions, Scope, Storage classes-auto, register, static, extern, scope rules, type qualifiers, recursion- recursive functions, Preprocessor commands, example C programmes.

Arrays – Concepts, using arrays in C, inter function communication, array applications, two – dimensional arrays, multidimensional arrays, C programme examples.

UNIT-IV

Derived types – Structures – Declaration, definition and initialization of structures, accessing structures, nested structures, arrays of structures, structures and functions, self referential structures, unions, typedef, bit fields, enumerated types, C programming examples

UNIT-V

Strings – Concepts, C Strings, String Input / Output functions, arrays of strings, string manipulation functions, string / data conversion, example C programmes.

Pointers – Introduction (Basic Concepts), Pointers for inter function communication, pointers to pointers, compatibility, memory allocation functions, array of pointers, programming applications, pointers to void, pointers to functions, pointers to structures, command –line arguments, C programme examples.

UNIT-VI

Input and Output – Concept of a file, streams, standard input / output functions, formatted input / output functions, text files and binary files, file input / output operations, file status functions (error handling), C programme examples,

UNIT-VII

Searching and Sorting – Sorting- selection sort, bubble sort, insertion sort, quick sort, merge sort, Searching-linear and binary search methods.

UNIT-VIII

Data structures – introduction to data structures, abstract data types, Linear list – singly linked list implementation, insertion, deletion and searching operations on linear list, stacks-

operations, array and linked representations of stacks , stack application-infix to postfix conversion evaluation, queues-operations, array and linked representation, Introduction to Graphs & Trees and their representations.

TEXT BOOKS :

1. C Programming & Data Structures, B.A Forouzan and R.F.Gilberg, Third Edition, Cengage Learning.
2. Problem Solving and Program Design in C, J.R Hanly and E.B Koffman, Fifth Edition, Pearson education.

REFERENCES:

1. C & Data Structures- P. Padmanabham, Third Edition B.S. Publications
2. C Programming And Data Structures, E.Balaguru Swamy, TMH
3. C and Data Structures, Ashok N.Kamthane, Pearson Edition.
4. C Programming by D.Ravi Chandran.
5. The C Programming Language B.W. Kernighan and Dennis M.Ritchie, PHI/pearson Education
6. C programming with problem solving, J.A.Jones & K.Harrow, dreamtech press
7. “Let Us C” by Yashwanth Kenetkar.
8. C how to program Paul Deitel and Harvey Deitel. PH.

2011-2012 Code: CM1Y1107
MALLA REDDY ENGINEERING COLLEGE
(Autonomous)

B.Tech I Year.	L	T/P/D	C
	2	-/- /3	4
ENGINEERING GRAPHICS			
(Common for ME, CE)			

UNIT – I

INTRODUCTION TO ENGINEERING DRAWING :

Principles of Engineering Graphics and their Significance – Drawing Instruments and their Use – Conventions in Drawing – Lettering – BIS Conventions. Curves used in Engineering Practice & their Constructions :

- a) Conic Sections including the Rectangular Hyperbola – General method only.
- b) Cycloid, Epicycloid and Hypocycloid
- c) Involute of a circle and polygons.
- d) Scales: Different types of Scales, Plain scales, Vernier scales , Diagonal scales.

UNIT – II

DRAWING OF PROJECTIONS OR VIEWS ORTHOGRAPHIC PROJECTION IN FIRST ANGLE

PROJECTION: Principles of Orthographic Projections – Conventions – First and Third Angle projections. Projections of Points and Lines- in simple position and inclined to both planes, True lengths, traces.

UNIT – III

PROJECTIONS OF PLANES & SOLIDS: Projections of regular Planes, projection of planes inclined to both planes. Projections of Regular Solids, inclined to both planes

UNIT – IV

SECTIONS AND SECTIONAL VIEWS: Right Regular Solids – Prism, Cylinder, Pyramid, Cone. True shape of the section.

DEVELOPMENT OF SURFACES: Development of Surfaces of Right, Regular Solids – Prisms, Cylinder, Pyramid Cone and their parts.

UNIT – V

INTERSECTION OF SOLIDS: Intersection of Cylinder Vs Cylinder, Cylinder Vs Prism, Cylinder Vs Cone.

UNIT - VI

ISOMETRIC PROJECTIONS: Principles of Isometric Projection – Isometric Scale – Isometric Views. Conventions – Isometric Views of Lines, Plane Figures, Simple and Compound Solids – Isometric Projection of objects having non- isometric lines. Isometric Projection of spherical Parts.

UNIT –VII

TRANSFORMATION OF PROJECTIONS: Conversion of Isometric Views to Orthographic Views - Conversions from Orthographic to Isometric views.

UNIT – VIII

PERSPECTIVE PROJECTIONS : Perspective View : Points, Lines, Plane Figures and Simple Solids, Vanishing Point Methods(General Method only).
INTRODUCTION TO COMPUTER AIDED DRAFTING- Generation of points. Lines, curves, polygons, simple solids and dimensioning practice.

TEXT BOOK :

1. Engineering Drawing, N.D. Bhat / Charotar
2. Engineering Drawing – Basant Agrawal, TMH

REFERENCES :

1. Engineering drawing – P.J. Shah.S.Chand.

2. Engineering Drawing, Narayana and Kannaiah / Scitech publishers.
3. Engineering Drawing- Johle/Tata Macgraw Hill.
4. Engineering Drawing and Graphics, Venugopal / New age.

2011-12

Code: CS1Y1108

MALLA REDDY ENGINEERING COLLEGE
(Autonomous)

B.Tech I Year.

L	T/P/D	C
0	-/3/-	4

COMPUTER PROGRAMMING LAB
(Common for ME, CE, EEE, ECE, CSE & IT)

Objectives:

- To make the student learn a programming language.
- To make the student learn algorithms, pseudo code and flowcharts.
- To make the students learn debugging concepts.
- To teach the student to write programs in C to solve the problems
- To introduce the student to simple linear and non linear data structures such as lists, stacks, queues, trees and graphs.

Recommended Systems/Software Requirements:

- Intel based desktop PC
- ANSI C Compiler with Supporting Editors

Week 1:

a) Practice various DOS internal and external commands.

Week 2:

a) Implement various programme logics using algorithms and flowcharts.

b) Practice various debugging techniques using simple C programs.

Week 3:

a) Write a C program to find the sum of individual digits of a positive integer.

b) A Fibonacci sequence is defined as follows: the first and second terms in the sequence are 0 and 1. Subsequent terms are found by adding the preceding two terms in the sequence. Write a C program to generate the first n terms of the sequence.

c) Write a C program to generate all the prime numbers between 1 and n, where n is a value supplied by the user.

Week 4:

a) Write a C program to calculate the following Sum:

$$\text{Sum} = 1 - x^2/2! + x^4/4! - x^6/6! + x^8/8! - x^{10}/10!$$

b) Write a C program to find the roots of a quadratic equation.

Week 5:

a) Write C programs that use both recursive and non-recursive functions

i) To find the factorial of a given integer.

ii) To find the GCD (greatest common divisor) of two given integers.

Week 6:

a) Write a C program to find reverse of a number.(e.g. reverse of 123 is 321)

b) Write a C program to find whether the given number is Palindrome or not.

(Note: palindrome means reverse of a number should be equal to the given number)

c) Write a C program, which takes two integer operands and one operator from the user, performs the operation and then prints the result. (Consider the operators +, -, *, /, % and use Switch Statement)

Week 7:

a) Write a C program to find both the largest and smallest number in a list of integers.

b) Write a C program that uses functions to perform the following:

- i) Addition of Two Matrices
- ii) Multiplication of Two Matrices

Week 8:

a) Write a C program that uses functions to perform the following operations:

- i) To insert a sub-string in to given main string from a given position.
- ii) To delete n Characters from a given position in a given string.

b) Write a C program to determine if the given string is a palindrome or not

Week 9:

a) Write a C program that displays the position or index in the string S where the string T begins, or – 1 if S doesn't contain T.

b) Write a C program to count the lines, words and characters in a given text.

Week 10:

a) Write a C program to generate Pascal's triangle.

b) Write a C program to construct a pyramid of numbers.

Week 11:

Write a C program to read in two numbers, x and n, and then compute the sum of this geometric progression:

$$1+x+x^2+x^3+\dots + x^n$$

For example: if n is 3 and x is 5, then the program computes 1+5+25+125.

Print x, n, the sum

Perform error checking. For example, the formula does not make sense for negative exponents – if n is less than 0. Have your program print an error message if n<0, then go back and read in the next pair of numbers of without computing the sum. Are any values of x also illegal? If so, test for them too.

Week 12:

a) 2's complement of a number is obtained by scanning it from right to left and complementing all the bits after the first appearance of a 1. Thus 2's complement of 11100 is 00100. Write a C program to find the 2's complement of a binary number.

b) Write a C program to convert a Roman numeral to its decimal equivalent.

Week 13:

Write a C program that uses functions to perform the following operations:

- i) Reading a complex number
- ii) Writing a complex number
- iii) Addition of two complex numbers
- iv) Multiplication of two complex numbers

(Note: represent complex number using a structure.)

Week 14:

a) Write a C program which copies one file to another.

b) Write a C program to reverse the first n characters in a file. (Note: The file name and n are specified on the command line.)

Week 15:

Write a C program that uses functions to perform the following operations on singly linked list.:

- i) Creation ii) Insertion iii) Deletion iv) Traversal

Week 16:

Write C programs that implement stack (its operations) using

- i) Arrays ii) Pointers

Week 17:

Write C programs that implement Queue (its operations) using

- i) Arrays ii) Pointers

Week 18:

Write a C program that uses Stack operations to perform the following:

- i) Converting infix expression into postfix expression
- ii) Evaluating the postfix expression

Week 19:

Write C programs that use both recursive and non recursive functions to perform the following searching operations for a Key value in a given list of integers :

- i) Linear search ii) Binary search

Week 20:

Write C programs that implement the following sorting methods to sort a given list of integers in ascending order:

- i) Bubble sort ii) Selection sort

Week 21:

Write C programs that implement the following sorting methods to sort a given list of integers in ascending order:

- i) Insertion sort ii) Merge sort

Week 22:

Write C programs that implement the following sorting methods to sort a given list of integers in ascending order:

- i) Quick sort

Week 23:

- i) Write a C program to implement Newton Raphson Method.

Week 24:

Write C programs to implement

- i) Trapezoidal Method ii) Simpson's method.

Text Books

1. C programming and Data Structures, P. Padmanabham, Third Edition, BS Publications
2. Mastering C, K.R.Venugopal and S.R.Prasad., TMH Publications.
3. Data Structures: A pseudo code approach with C, second edition R.F. Gilberg and B.A. Forouzan
3. Programming in C, P.Dey & M. Ghosh, Oxford Univ.Press.
4. C and Data Structures, E Balaguruswamy, TMH publications.
5. Computer Basics and C programming, V.Rajaraman, PHI publications.

2011-2012

Code: PCH1Y1109

MALLA REDDY ENGINEERING COLLEGE

(Autonomous)

B.Tech I Year.

L T/P/D C

**ENGINEERING PHYSICS/ ENGINEERING
CHEMISTRY LAB**
(Common for ME, CE, EEE, ECE, CSE & IT)

Engineering Physics Lab

Any ten experiments out of the following thirteen experiments should be performed.

List of the experiments

1. Sonometer – Frequency of AC supply
2. Dispersive power of the prism
3. Torsional pendulum
4. Diffraction grating – Determination of wavelength of D_1 and D_2 lines
5. Melde's experiment
6. RC Time Constant
7. Single slit diffraction using LASER
8. Numerical aperture and bending losses of an optical fiber
LCR series resonance
9. Stewart and Gee's method – Magnetic field along the axis of a current carrying circular coil.
10. Pohl's pendulum

11. Refractive index of liquid using Hollow prism

12. Energy band gap of a given semiconductor

Lab manual:

1. Engineering Physics Practicals by Dr. B. Srinivasa Rao, V.K.V. Krishna and K.S.Rudramamba – Lakshmi Publications, New Delhi.

Engineering Chemistry Lab

List of experiments.

(Any ten experiments out of the following sixteen experiments should be performed)

Titrimetry:

- 1 Estimation of hardness of water by EDTA method. (or)
Estimation of calcium in limestone by Permanganometry.

Mineral Analysis:

- 2 Determination of percentage of copper in brass
- 3 Estimation of manganese dioxide in pyrolusite.

Instrumental Methods:

4. Colorimetry:

Determination of ferrous iron in cement by colorimetric method.

(Or) Estimation of Copper by Colorimetric method.

5. Conductometry:

Conductometric titration of strong acid Vs strong base.

(or) Conductometric titration of mixture of acids Vs strong base.

6. Potentiometry:

Titration of strong acid Vs strong base by potentiometry.

(or) Titration of weak acid Vs strong base by potentiometry.

Physical Properties:

7. Determination of viscosity of sample oil by redwood/oswald's viscometer
8. Determination Surface Tension of lubricants.

Identification and Preparations:

9. Identification of functional groups present in organic compounds.

10. Preparation of organic compounds
Asprin (or) Benzimidazole

Kinetics:

11. To determine the rate constant of hydrolysis of methyl acetate catalysed by an acid and also the energy of activation. (or) To study the kinetics of reaction between $K_2S_2O_8$ and KI.

12. Demonstration Experiments (Any One of the following)

a. Determination of dissociation constant of weak acid-by PH metry

b. Preparation of Thiokol rubber

c. Adsorption on Charcoal

d. Heat of reaction.

13. Preparation of Nylon 6:6

14. Preparation of Biodiesel from Waste Vegetable Oil (WVO).

15. Determination of pH of water.

16. Determination of free chlorine or chlorides in water.

TEXT BOOKS:

1. Practical Engineering Chemistry by K. Mulkanti, etal, B.S. Publications, Hyderabad.
2. Inorganic quantitative analysis, Vogel.

REFERENCE BOOKS:

1. Text Book of engineering chemistry by R. N. Goyal and Harrmendra Goel.
2. A text book on experiments and calculations . S.S. Dara.
3. Instrumental methods of chemical analysis, Chatwal, Anand, Himalaya Publications.

2011-2012

Code: EN1Y1110

MALLA REDDY ENGINEERING COLLEGE

(Autonomous)

B.Tech I Year.

L	T/P/D	C
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**ENGLISH LANGUAGE COMMUNICATION SKILLS
LAB**

(Common for ME, CE, EEE, ECE, CSE & IT)

The **Language Lab** focuses on the production and practice of sounds of language and familiarises the students with the use of English in everyday situations and contexts.

Objectives:

1. To expose the students to a variety of self-instructional, learner-friendly modes of language learning.
2. To help the students cultivate the habit of reading passages from the computer monitor, thus providing them with the required facility to face computer-based competitive exams such GRE, TOEFL, GMAT etc.
3. To enable them to learn better pronunciation through stress on word accent, intonation, and rhythm.
4. To train them to use language effectively to face interviews, group discussions, public speaking.
5. To initiate them into greater use of the computer in resume preparation, report writing, format-making etc.

SYLLABUS :

The following course content is prescribed for the **English Language Laboratory** sessions:

Unit-I

Introduction to Situational Dialogues/Role Play-making the students perform Role Play-Assessment.

Unit-II

Introduction to Oral Presentations- Prepared and Extempore - making the students participate in Oral Presentations-Assessment.

Unit-III

Introduction to Just A Minute Sessions -making the students participate in JAM sessions-Assessment

Unit-IV

Introduction to Describing Objects / Situations / People and Giving Directions -making the students participate in the activity regarding Describing Objects, Situations, People and giving directions –Assessment

Unit-V

Introduction to Information Transfer -making the students transfer the information from one form to the other-Assessment.

Unit-VI

Introduction to Debate-making the students participate in Debate sessions-Assessment.

Unit-VII

Introduction to Telephoning Skills.-making the students participate in the activities regarding Telephoning Skills-Assessment

Unit-VIII

Introduction to the Sounds of English- Vowels, Diphthongs & Consonants and Stress and Intonation.

Minimum Requirement:

The English Language Lab shall have two parts:

i) **The Computer aided Language Lab** for 60 students with 60 systems, one master console, LAN facility and English language software for self- study by learners.

ii) **The Communication Skills Lab** with movable chairs and audio-visual aids with a P.A System, a T. V., a digital stereo – audio & video system and camcorder etc.

System Requirement (Hardware component):

Computer network with LAN with minimum 60 multimedia systems with the following specifications:

- i) P – IV Processor
 - a) Speed – 2.8 GHZ
 - b) RAM – 512 MB Minimum
 - c) Hard Disk – 80 GB
- ii) Headphones of High quality

Suggested Software:

- Cambridge Advanced Learners' English Dictionary with CD.
- The Rosetta Stone English Library.
- Clarity Pronunciation Power – Part I.
- Mastering English in Vocabulary, Grammar, Spellings, Composition
- Dorling Kindersley series of Grammar, Punctuation, Composition etc.
- Language in Use, Foundation Books Pvt Ltd with CD.
 - Oxford Advanced Learner's Compass, 7th Edition.
- Learning to Speak English - 4 CDs.
- Vocabulary in Use, Michael McCarthy, Felicity O'Den, Cambridge.

• Murphy's English Grammar, Cambridge with CD.

□ English in Mind, Herbert Puchta and Jeff Stranks with Meredith Levy, Cambridge

Books Suggested for English Language Lab Library (to be located within the lab in addition to the CDs of the text book which are loaded on the systems):

1. **A Handbook for English Language Laboratories** – Prof. E. Suresh Kumar, P. Sreehari, Foundation Books.
2. **Effective Communication & Public Speaking** by S. K. Mandal, Jaico Publishing House.
3. **English Conversation Practice** by Grant Taylor, Tata McGraw Hill.
4. **Speaking English effectively** by Krishna Mohan, N. P. Singh, Mac Millan Publishers.
5. **Communicate or Collapse: A Handbook of Effective Public Speaking, Group Discussions and Interviews**, by Pushpa Lata & Kumar, Prentice-Hall of India.
6. **Learn Correct English, Grammar, Usage and Composition** by Shiv. K. Kumar & Hemalatha Nagarajan, Pearson Longman
7. **Spoken English** by R. K. Bansal & J. B. Harrison, Orient Longman.
8. **English Language Communication: A Reader cum Lab Manual** Dr A Ramakrishna Rao, Dr. G. Natanam & Prof. S. A. Sankaranarayanan, Anuradha Publications, Chennai.
9. **Effective Technical Communication**, M. Ashraf Rizvi, Tata McGraw-Hill.
10. **A Practical Course in English Pronunciation**, (with two Audio cassettes) by J. Sethi, Kamlesh

Sadanand & D.V. Jindal, Prentice-Hall of India Pvt. Ltd., New Delhi.

11. A text book of English Phonetics for Indian Students by T. Balasubramanian, Mac Millan

12. Spoken English: A foundation Course, Parts 1 & 2, Kamalesh Sadanand and Susheela punitha, Orient Longman

DISTRIBUTION AND WEIGHTAGE OF MARKS

English Language Laboratory Practical Paper:

1. The practical examinations for the English Language Laboratory shall be conducted as per the norms prescribed for the core engineering practical sessions.

2. For the Language lab sessions, there shall be a continuous evaluation during the year for 25 sessional marks and 50 year-end Examination marks. Of the 25 marks, 15 marks shall be awarded for day-to-day work and 10 marks to be awarded by conducting Internal Lab Test(s). The year-end Examination shall be conducted by an external examiner/ or the teacher concerned with the help of another member of the staff of the same department of the same institution.

2011-2012

Code:MCS1Y1111

MALLA REDDY ENGINEERING COLLEGE (Autonomous)

B. Tech I Year.

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ENGINEERING WORKSHOP / IT WORKSHOP (Common for ME, CE, EEE, ECE, CSE & IT)

ENGINEERING WORKSHOP

1. TRADES FOR EXERCISES:

At least two exercises from each trade:

1. Carpentry
2. Fitting
3. Tin-Smithy and Development of jobs carried out and soldering.
4. House-wiring.
5. Foundry.
6. Machine Shop.

2. TRADES FOR DEMONSTRATION & EXPOSURE:

1. Power Tools in construction, wood working, electrical engineering and mechanical engineering.
2. Plumbing.

TEXT BOOK:

1. Work Shop Manual – P. Kanniah/ K. L. Narayana, Scitech Publishers.
2. Work Shop Manual by Venkat Reddy
3. Work Shop Practice Manual by K. Venkat Reddy, B.S. Publishers.

IT WORKSHOP

Objectives:

The IT Workshop for engineers is a training lab course spread over 54 hours. The modules include training on PC Hardware, Internet & World Wide Web and Productivity tools including Word, Excel and Power Point

PC Hardware introduces the students to a personal computer and its basic peripherals, the process of assembling a personal computer, installation of system software like MS Windows, Linux and the required device drivers. In addition hardware and software level troubleshooting process, tips and tricks would be covered. The students should work on working PC to disassemble and assemble to working condition and install Windows and Linux on the same PC. Students are suggested to work similar tasks in the Laptop scenario wherever possible.

Internet & World Wide Web module introduces the different ways of hooking the PC on to the internet from home and workplace and effectively usage of the internet. Usage of web browsers, email, newsgroups and discussion forums would be covered. In addition, awareness of cyber hygiene, Le., protecting the personal computer from getting infected with the viruses, worms and other cyber attacks would be introduced.

Productivity tools module would enable the students in crafting professional word documents, excel spread sheets and power point presentations using the Microsoft suite of office tools (**Recommended to use Microsoft office 2007 in place of MS Office 2003**)

PC Hardware

Week 1 - Task 1 : Identify the peripherals of a computer, components in a CPU and its functions. Draw the block diagram of the CPU along with the configuration of each peripheral and submit to your instructor.

Week 2 - Task 2 : Every student should disassemble and assemble the PC back to working condition. Lab instructors should verify the work and follow it up with a Viva. Also students need to go through the video which shows the process of assembling a PC. A video would be given as part of the course content.

Week 3 - Task 3 : Every student should individually install MS windows on the personal computer. Lab instructor should verify the installation and follow it up with a Viva.

Week 4 - Task 4 : Every student should install Linux on the computer. This computer should have windows installed. The system should be configured as dual boot with both windows and Linux. Lab instructors should verify the installation and follow it up with a Viva

Week 5 - Task 5 : Hardware Troubleshooting: Students have to be given a PC which does not boot due to improper assembly or defective peripherals. They should identify the problem and fix it to get the computer back to working condition. The work done should be verified by the instructor and followed up with a Viva

Week 6 - Task 6 : Software Troubleshooting: Students have to be given a malfunctioning CPU due to system software

problems. They should identify the problem and fix it to get the computer back to working condition. The work done should be verified by the instructor and followed up with a Viva.

Productivity Tools

Microsoft Word

Week 7 - Word Orientation: The mentor needs to give an overview of Microsoft (MS) office 2007 word: Importance of Word as word Processors, Details of the three tasks and features that would be covered in each, using word - Accessing, overview of toolbars, saving files, Using help and resources, rulers, format painter.

Task 1 : Microsoft Word to create project certificate. Features to be covered:-Formatting Fonts in word, Drop Cap in word, Applying Text effects, Using Character Spacing, Borders and Colors, Inserting Header and Footer, Using Date and Time option in Word.

Week 8 - Task 2 : Creating project abstract Features to be covered:-Formatting Styles, Inserting table, Bullets and Numbering, Changing Text Direction, Cell alignment, Footnote, Hyperlink, Symbols, Spell Check, Track Changes.

Creating a Newsletter: Features to be covered:- Table of Content, Newspaper columns, Images from files and clipart, Drawing toolbar and Word Art, Formatting Images, Textboxes, Paragraphs and Mail Merge in word.

Microsoft Excel

Week 9 - Excel Orientation: The mentor needs to tell the importance of MS office 2007 Excel as a Spreadsheet tool, give the details of the two tasks and features that would be covered in each. Using Excel - Accessing, overview of toolbars, saving excel files, Using help and resources.

Task 1: Creating a Scheduler - Features to be covered:- Gridlines, Format Cells, Summation, auto fill, Formatting Text

Microsoft Power Point

Week 10 - Task 1 : Students will be working on basic power point utilities and tools which help them create basic power point presentation. Topic covered during this week includes :- PPT Orientation, Slide Layouts, Inserting Text, Word Art, Formatting Text, Bullets and Numbering, Auto Shapes, Lines and Arrows in Power point. Students will be given model power point presentation which needs to be replicated (exactly how it's asked).

Week 11- Task 2 : Second week helps students in making their presentations interactive. Topic covered during this week includes: Hyperlinks, Inserting -Images, Clip Art, Audio, Video, Objects, Tables and Charts

Week 12 - Task 3 : Concentrating on the in and out of Microsoft power point and presentations Helps them learn best practices in designing and preparing power point presentation. Topic covered during this week includes :- Master Layouts (slide, template, and notes), Types of views (basic, presentation, slide slotter, notes etc), Inserting - Background, textures, Design Templates, Hidden slides.

REFERENCES:

1. Introduction *to* Information Technology, ITL Education Solutions limited, Pearson Education.
2. Introduction *to* Computers, Peter Norton, 6/e Mc Graw Hill
3. Upgrading and Repairing, PC's 18th e, Scott Muller QUE, Pearson Education
4. Comdex Information Technology course tool kit Vikas Gupta, WILEY Dreamtech
5. IT Essentials PC Hardware and Software Companion Guide Third Edition by David Anfinson and Ken Quamme. - CISCO Press, Pearson Education.
6. PC Hardware and A+Handbook - Kate J. Chase PHI (Microsoft)