Dr. V.P.S.S.M's

Padmabhooshan Vasantraodada Patil Institute of Technology, Budhgaon (Sangli)

Student Information Manual

First Year B. Tech.

Dr. V. P. ShetkariShikshanMandal's

PadmabhooshanVasantraodadaPatil

Institute of Technology, Budhgaon– 416304

STUDENT'S INFORMATION MANUAL

(Academic Year: 2020-21)

Semester-I

Teaching and
Evaluation Scheme
for
First Year B. Tech.
Group B

Department of First Year Engineering

Department of First Year Engineering

The Department of **First Year Engineering** is established in the year 1983 with the establishment of institute. The department has a good collaboration of experienced and young faculty which works as a team to strengthen the department.

VISION OF DEPARTMENT

To orient, educate and develop students in applying fundamentals of sciences to Engineering leading to smooth and successful transfer to an undergraduate degree engineering program.

MISSION OF DEPARTMENT

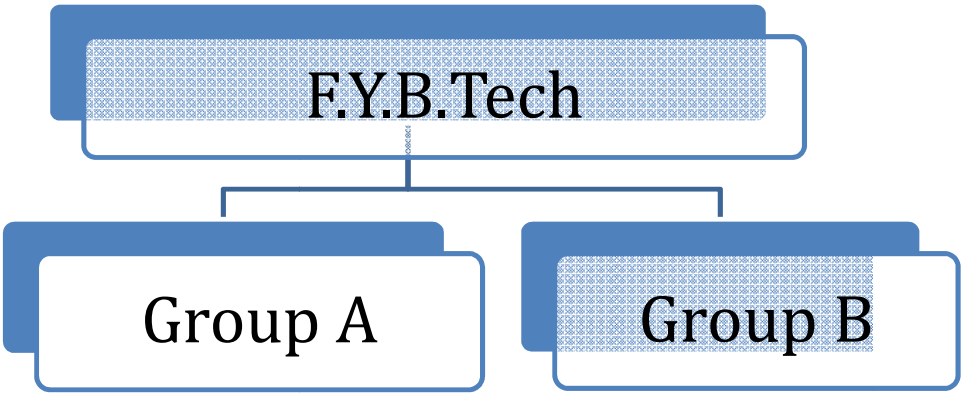
1. To create an environment where students can ascertain that career in engineering matches their interests and abilities.
2. To impart strong fundamental and technical knowledge in the basic science subjects to enable them to prepare themselves for successful career.
3. To inculcate habbit of innovation and entrepreneurship.

GOALS

1. To achieve 100 % results in academics.
2. To inculcate competitive attitude by supporting and guiding them to participate in national competition.
3. To develop basic skills and human values required to undertake further studies.

STRUCTURE OF FIRST YEAR ENGINEERING

(With effective from Academic Year 2020-21)



1) Chemical Engineering
2) Civil Engineering
3) Mechanical Engineering

1) Computer Science and Engineering
2) Electronics Engineering
3) Electrical Engineering
4) Electronics & Telecommunication Engg.
5) Instrumentation Engineering

INDEX

THE ROLE OF STUDENTS

As our society/ nation grows and becomes technologically more strong/ complex, it needs more trained Engineers. Students can contribute to this professional growth by playing an effective and disciplined role during their studies.

Responsibilities:

1. 100% Attendance and active participation in all academic activities.
2. Self-discipline and good relations with other students, teaching and support staff.
3. Positive attitude, motivation and technical thinking.
4. Participation in Co-Curricular and Extra-Curricular activities.
5. Carrying Identity Card and following the College Dress Code.
6. Pursuing all-round personality development with good generic skills.
7. Following the Code-of-Conduct laid down by the Department, Institute and University.

Code-of-Conduct: Students Shall

- Attend all Lecture's and Practical's in time.
- Not take common off, Leave without permission.
- Roaming in the campus premises during academic work or disturbing the campus activities through shouting/ misconduct is strictly not allowed.
- Use of personal unauthorized electronic gadgets without permission in department premises is not allowed.
- Attendance should be 100 % otherwise you will be ineligible for Exams.
- Not include themselves into any form of violence, ragging, use of tobacco, alcohol or drugs in campus.
- Let us all- Society, parents, teachers and students join hands and put our best efforts to imbibe the above mentioned behavior in our students.
- Maintain silence in class rooms
- Don't write anything on seating bench and walls of classroom
- Keep their mobiles switched off in classroom.
- Your reason of absence should be timely informed to your class teacher with written application.
- Help to conserve energy, Switch off fans and tubes before leaving the classroom.
- Keep the Classrooms clean.

Laboratory Instructions

Laboratory Instructions

- Read all the instructions carefully.
- Always keep silence in the laboratory.
- Keep your mobiles switched off in the laboratory.
- Always wear an apron before starting your laboratory work.
- Handle hazardous chemicals and concentrated chemicals carefully.
- Handle all electronics Devices/Equipment's carefully.
- Follow safety procedures and avoid damage to self and equipment.
- Be aware with what you are doing and why you are doing it.
- Except in emergency, don't run in laboratory.
- Inform the lab assistant or lab in-charge when any fault arises during the performance of an experiment.
- Report any not working equipment to the lab instructor; don't open/ remove the cover/ attempt to repair any equipment.
- Keep the working table always neat and clean.
- Be aware with the place of fire extinguisher and the method of using it.
- If any accident occurs, report it at once to the person concerned (Lab In charge).
- Use laboratory first aid box for any minor accident.
- Help to conserve energy, Switch off the equipment's tubes and fans before leaving the laboratory.
- Do not move the instruments from one laboratory to another, without permission.

First Year B. Tech. Teaching and Evaluation Scheme

Group B Semester I

(Computer Science/ Electronics / Instrumentation/ Electronics and Telecommunication/ Electrical Engineering)

Sr. No	Course Code	Name of Course	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
1	BTBS101	Engineering Mathematics-I	3	1	-	20	20	60	100	4
2	BTBS102	Engineering Chemistry	3	1	-	20	20	60	100	4
3	BTES103	Engineering Mechanics	2	1	-	20	20	60	100	3
4	BTES104	Computer Programming in C	3	-	-	20	20	60	100	2
5	BTES105	Workshop Practices	-	-	4	60	-	40	100	2
6	BTES106	Basic Electrical and Electronics Engineering	2	-	-	50	-	-	50	Audit
7	BTES107L	Computer Programming Laboratory	-	-	2	60	-	40	100	1
8	BTBS108L	Engineering Chemistry Laboratory	-	-	2	60	-	40	100	1
9	BTE109L	Engineering Mechanics Laboratory	-	-	2	60	-	40	100	1
		Total	**13**	**3**	**10**	**370**	**80**	**400**	**850**	**18**

COURSE CO-ORDINATOR

Sr. No.	Course	Corse Code	Course Coordinator	Email id	Contact No.
1	Engineering Mathematics-I	BS101	Dr. P. B. Kadam-Lugade	pbklugade.ge@pvpitsangli.edu.in	9970041879
2	Engineering Chemistry	BS102	Dr. V. J. Suryavanshi	vjsuryavanshi.ge@pvpitsangli.edu.in	9975758102
3	Engineering Mechanics	ES103	Ms. T. T. Shinde	tejaswinishinde.civil@pvpitsangli.edu.in	9405581370
4	Computer Programming in C	ES104	Ms. P. V. Phalle	pvphalle.it@pvpitsangli.edu.in	9960806786
5	Workshop Practice	ES105L	Mr. S. S. Gunjate	ssgunjate.mech@pvpitsangli.edu.in	9021040696
6	Basic Electrical and Electronic Engineering	ES106	Mr. S. D. Patil Mr. M. B. Dongare	sdpatil.it@pvpitsangli.edu.in	9423040805 8390099553

NOTE: Any query or suggestion in above subject should contact with respective subject Coordinator

CLASS TEACHERS

Sr. No.	Class/ Div	Class Teachers	Department	Email id	Contact No.
01	I	Dr. S. L. Patil	Physics	slpatil.ge@pvpitsangli.edu.in	9423269875
02	II	Dr. V. J. Suryavanshi	Chemistry	vjsuryavanshi.ge@pvpitsangli.edu.in	9975758102
03	III	Mr. A. K. Chavan	English	akchavan.ge@pvpitsangli.edu.in	9834750779
04	IV	Mrs. S. P. Mandal	Mathematics	spmandale.ge@pvpitsangli.edu.in	9172035381
05	V	Mr. M. R. Waikar	Physics	maqsoodwaikar.ge@pvpitsangli.edu.in	9860861758
06	VI	Mrs. D. A. Lavate	Chemistry	dalavate.ge@pvpitsangli.edu.in	8788009691

COURSE TEACHERS

SEM-I

Course \ Division/ Class	II	IV	VI
Engineering Mathematics-I	Dr. Mrs. A. A. Patil	Mrs. S. P. Mandale	Dr. Mr. P. B. Kadam Lugade
Engineering Chemistry	Dr. V. J. Suryavanshi	Mrs. D. A. Lavate	Mrs. D. A. Lavate
Engineering Mechanics	Mrs. T. T. Shinde	Mr. A. D. Dhangar	Mr.M. S. Kakamare
Computer Programming in C	Mrs. N. R. Chaus	Mr. P. V. Phalle	Mr. A. N. Jadhav
Basic Electrical and Electronic Engineering	Mr. M. V. DongareMr. S. D. Patil	Mr. M. V. Dongare Mr. S. D. Patil	Mr. M. V. Dongare Mr. S. D. Patil

Dr V P S S M's

PadmabhooshanVasantraodadaPatil Institute of Technology, Budhgaon (Sangli)

First Year Engineering Department

Academic Calender 2020-21

SEM I

FEBRUARY 2021 **Academic Days: 23**

MON	TUE	WED	THUR	FRI	SAT	SUN
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

Induction Programme :- 18th Jan. -31st Jan. 21
Commencement of Term :- 1th Feb. 21
Late Vishnu Anna Punyatithi :- 12th Feb. 21
Shiv Jayanti:-19th Feb.21
List of non-Reported students :- 28th Feb. 21
1st Defaulter students list :- 28th Feb. 21

MARCH 2021 **Academic Days: 26**

MON	TUE	WED	THUR	FRI	SAT	SUN
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Late Vasantdada Punyatithi:- 1st March 21
CA1 Evaluation :- 1st -6th March21
Mid Semester Exam(To be conduct on Zero Hours) :- 11th-15th March 21
Parents Meet :- 27th March 21
Holi:-29th March 21
2nd Defaulter students list :- 31st March 21

APRIL 2021 **Academic Days: 21**

MON	TUE	WED	THUR	FRI	SAT	SUN
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

AmbedkarJayanti:- 14th April 21
CA2 Evaluation :- 12th -17th March21
Annual Social Gathering :- 23rd and 24th April21
End of Classes:- 23rd April 21
Practical Exam.:-26th -29th April 21
3rd Defaulter students list :- 24th April 21

MAY 2021 **Academic Days: 23**

MON	TUE	WED	THUR	FRI	SAT	SUN
31					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Maharashtra Day :- 1st May 21
End Semester Examination :- 3rd-12th May 21
Result Declaration :- 20th May 21
SEM II starts :- 17th May21

Dr. Mrs. A. A. Patil
HoD, First Year Engg.

Mr.A.A.Kumbhojkar
Dean Academic

Dr. D.V.Ghewade
Principal

	Dr. Vasantraodada Patil Shtekari Shikshan Mandal's **Padmabhooshan Vasantraodada Patil Institute Of Technology, Budhgaon. (Sangli)** **FIRST YEAR ENGINEERING DEPARTMENT (F. Y. B. Tech)** **TIMETABLE 2020-21 SEM-I**	**With Effect From 01/02/2021**

TIME TABLE

	Class: FE-**II**	**Branch: -**	**Electrical/ Electronics/ E & TC / IT/ Instru.**			**Class Room:**	**C-13/14**
Sr. No.	**TIME IN HRS**	**MONDAY**	**TUESDAY**	**WEDNESDAY**	**THURSDAY**	**FRIDAY**	**SATURDAY**
	10:10 TO 11:10	**B1- ES103 (T)** **B2- ES105L** **B3- BS107L**	BS102/VJS	**B1- ES108L** **B2- ES105L** **B3- 102(T) /101(T)**	ES104/NRC	BS102/VJS	AAP- Dr. A A Patil VJS-Dr. V J Suryavanshi TSB – T S Bandger SDP-S D Patil TTS- T T Shinde NRC- N R Chouse
2	**11:10 TO 12:10**		ES104/NRC		BS101/AAP	BS101*/AAP	
	12:10 TO 12.45	**LONG RECESS**					
3	**12.45 TO 13:45**	BS101 /AAP	**B1- BS107L** **B2- ES108L** **B3- ES105L**	BS102/VJS	ES103/TTS	**B1- 102(T) /101(T)** **B2- ES103(T)** **B3- ES105L**	
4	**13:45 TO 14:45**	ES103 /TTS		BS101/AAP	ES106/SDP		
	14:45 TO 14:55	**SHORT RECESS**					
5	**14:55 TO 15:55**	**B1- ES105L** **B2- BS107L** **B3- ES108L**	***B1- ES109L** ***B2- ES109L** ***B3- ES109L**	ES104/NRC	**B1- ES105L** **B2- 102(T) /101(T)** **B3- ES103(T)**	ES106//TSB	**# M-M / Counselor Int.**Mentee –Mentor or Counselor Interaction
6	**15:55 TO 16:55**			**LVH**		**# M-M / Counselor Int.**	
	LVH-Library Visit Hour		****-Extra***	***# - Alternate***	***(T)-Tutorial***		

Sr. No	**Course Code**	**Name of the Course**	**Sr. No**	**Course Code**	**Name of the Course**	**Sr. No**	**Course Code**	**Name of the Course**
1	BS101	Engineering Mathematics-I	**4**	ES104	Computer Programming in C	**7**	BS107L	Engineering Chemistry Laboratory
2	BS102	Engineering Chemistry	**5**	ES105L	Workshop Practices	**8**	ES108L	Engineering Mechanics Laboratory
3	ES103	Engineering Mechanics	**6**	ES106	Basic Electrical and Electronics Engineering	**9**	ES109L	Computer Programming in C Laboratory*

	Dr. Vasantraodada Patil Shtekari Shikshan Mandal's **Padmabhooshan Vasantraodada Patil Institute Of Technology, Budhgaon. (Sangli)** **FIRST YEAR ENGINEERING DEPARTMENT (F. Y. B. Tech)** **TIMETABLE 2020-21 SEM-I**	**With Effect From 01/02/2021**

	Class: FE-**IV**		**Branch: -**	**Electrical/ Electronics/E & TC / IT/ Instru.**		**Class Room:**	**C-12/14**
Sr. No.	**TIME IN HRS**	**MONDAY**	**TUESDAY**	**WEDNESDAY**	**THURSDAY**	**FRIDAY**	**SATURDAY**
1	**10:10 TO 11:10**	ES104/PVP	**D1- ES103 (T) D2- ES105L D3- BS107L**	BS101/SPM	**D1- ES108L D2- ES105L D3- 102(T) /101(T)**	ES106/TSB	SPM-S P Mandale DAL-/D A Lavate TSB – T S Bandger SDP-S D Patil ADL- A D Dhangar PVP- P V Phalle
2	**11:10 TO 12:10**	BS102/ DAL		ES104/PVP		BS102/ DAL	
	12:10 TO 12.45	**LONG RECESS**					
3	**12.45 TO 13:45**	**D1- 102(T)/101(T) D2- ES103(T) D3- ES105L**	BS101/SPM	**D1- BS107L D2- ES108L D3- ES105L**	ES106/SDP	ES103/ALD	
4	**13:45 TO 14:45**		BS102/ DAL		ES104/PVP	BS101/SPM	
	14:45 TO 14:55	**SHORT RECESS**					
5	**14:55 TO 15:55**	ES103/ALD	**D1- ES105L D2- BS107L D3- ES108L**	BS101*/SPM	***D1- ES109L *D2- ES109L *D3- ES109L**	**D1- ES105L D2- 102(T)/101(T) D3- ES103(T)**	**# M-M / Counselor Int.**Mentee – Mentor or Counselor Interaction
6	**15:55 TO 16:55**	**LVH**		**LVH**			
	LVH-Library Visit Hour		****-Extra***	***# - Alternate***	***(T)-Tutorial***		

Sr. No.	**Course Code**	**Name of the Course**	**Sr. No.**	**Course Code**	**Name of the Course**	**Sr. No.**	**Course Code**	**Name of the Course**
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	Dr. Vasantraodada Patil Shtekari Shikshan Mandal's **Padmabhooshan Vasantraodada Patil Institute Of Technology, Budhgaon. (Sangli)** **FIRST YEAR ENGINEERING DEPARTMENT (F. Y. B. Tech)** **TIMETABLE 2020-21 SEM-I**	**With Effect From 01/02/2021**

	Class: FE-**VI**	**Branch: -**	**Electrical/ Electronics/ E &TC / IT/ Instru.**			**Class Room:**	**C-10/11**
Sr. No.	**TIME IN HRS**	**MONDAY**	**TUESDAY**	**WEDNESDAY**	**THURSDAY**	**FRIDAY**	**SATURDAY**
1	**10:10 TO 11:10**	BS101/PBKL	ES103/MSK	**F1- ES103 (T) F2- ES105L F3- BS107L**	BS102/DAL	**F1- ES108L F2- ES105L F3- 102(T) /101(T)**	/PBKL- Dr. P B Kadam Lugade ANJ- A N Jadhav TSB – T S Bandger SDP-S D Patil MSK- M S Kakemare DAL – D A Lavate
2	**11:10 TO 12:10**	ES106/SDP	ES104/ANJ		BS101/PBKL		
	12:10 TO 12.45		**LONG**	**RECESS**			
3	**12.45 TO 13:45**	BS102/DAL	**F1- 102(T) /101(T) F2- ES103 (T) F3- ES105L**	ES104/ANJ	**F1- BS107L F2- ES108L F3- ES105L**	BS102/DAL	
4	**13:45 TO 14:45**	ES104/ANJ		BS101/PBKL		ES106/TSB	
	14:45 TO 14:55		**SHORT**	**RECESS**			
5	**14:55 TO 15:55**	**F1- ES105L F2- 102(T) /101(T) F3- ES103(T)**	BS101*/PBKL	**F1- ES105L F2- BS107L F3- ES108L**	ES103/MSK	***F1- ES109L *F2- ES109L *F3- ES109L**	**# M-M / Counselor Int.**Mentee – Mentor or Counselor Interaction
6	**15:55 TO 16:55**		**# M-M / Counselor Int.**		**LVH**		
	LVH-Library Visit Hour		****-Extra***	***# - Alternate***	***(T)-Tutorial***		

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3	ES103	Engineering Mechanics	**6**	ES106	Basic Electrical and Electronics Engineering	**9**	*ES109L	Computer Programming in C Laboratory

DEPARTMENTAL ACTIVITY

1) MENTORING ACTIVITY:

Each faculty from respective branch has been **assigned some students for mentoring.** Mentoring Forms (Student Information Form) are maintained by mentor (faculty), which involves **details of students** such as Date of Birth, Blood Group, Mail –ID, Parents information, academic information, his/her involvement in different activities. **At least once in a week interaction with the concerned students is done by respective mentor.**

Through interaction their difficulties **from department, hostel and amenities are known.** The suggestions and difficulties from the interaction are **conveyed to higher authorities** on whom corrective actions are taken. **Personal difficulties** during the interaction are also shared by the students. On which appropriate guidance and help is provided. The mentoring batch allotted is continued till the student completes his/her graduation.

Professional guidance is provided by arranging lectures of eminent personalities from Academic, Industry and Social spheres. Lectures of faculty from other institutions are organized. Mentoring includes **professional guidance, carrier advancement/ course work specific/ lab specific/ total development.**

Note:

i. Student should collect **Mentoring Forms (Student Information Form)** from Respective **Mentors** and fill this form within **one week from the Commencement of Term and classes.**
ii. Student should attend Mentoring Lectures as per Time Table Schedule.
iii. **At least once in a week** interaction with the concerned Mentor is done by respective student.

COUNSELING ACTIVITY

- **Encourage students** to discuss their ideas.
- Help to **lower stress and build confidence.**
- Increases personal knowledge and organizational awareness.
- Gives wisdom, advice, help and encouragement.
- Develops an environment that supports constructive criticism.
- Experiencing greater self-esteem and motivation to succeed.
- Improving interpersonal relationship such as with teacher and family.
- Receiving assistance in choosing a carrier path.

Counselor expert: Mrs. Archana Muley (Mobile: 9881667158)

Internal expert may be Dean, Head of department, Coordinators, Class Teachers, Mentors etc. whereas external expert may be related to medical field. **Counselor** as a mentor has been **assigned for each student.** Counseling sheets are maintained by

Counselor (Mentor), **at least once in each week interaction with the concerned class is done by respective counselor.**

CLASS TEACHER

- Receiving assistance with academic endeavors.
- Constructive interaction with a class teacher and participation in collective activities he or she arranges engagement in the field.
- Receiving encouragement to stay in college.
- Receiving assistance in the understanding of subject.
- It supports their advancement in research activity, conference, presentation, publication, pedagogical skill etc.
- Student should collect **Leave Application Form** from Class Teacher
- Defaulter Student should contact with their Class Teacher /Mentor/ Head of First Year Engg. Dept. (/Dr. Mrs. A. A. Patil) within 2-3 days after displaying Defaulter List on notice board as well as on college web site.

REMEDIAL LECTURES

Extra lectures are arranged for those students who are either weak in particular subject or failed in previous semester.

Note:1) Student should **attend Remedial Lectures** as per Time Table Schedule.
2) Time Table Schedule for Remedial Lectures will be display after completion of Mid/End Term Test.

CO/EXTRA CURRICULAR ACTIVITIES:

Paper/PPT Presentation, Nirmiti, Vasantotavand Sports activity benefits the student to participate in extracurricular activities.

Date	Activity Name	Participation level	Outcome

REMARKS: Student should submit Xerox copy of certificates obtained from Co/Extra Curricular Activities to Class Teacher .

ANTI-RAGGING ACTIVITY

ANTI-RAGGING RULES AND REGULATIONS

Ragging is a criminal offense as per act no.1098 (113/98) WISHI-3, 27-5-99.

What Constitutes Ragging?

Ragging constitutes one or more of any of the following acts:

- Any conduct by any student or students whether by words spoken or written or by an act which has the effect of teasing, treating or handling with rudeness a fresher or any other student.
- Asking any student to do any act which such student will not in the ordinary course do and which has the effect of causing or generating a sense of shame, or torment or embarrassment so as to adversely affect the physique or psyche of such fresher or any other student.
- Any act by a senior student that prevents, disrupts or disturbs the regular academic activity of any other student or a fresher.
- Exploiting the services of a fresher or any other student for completing the academic tasks assigned to an individual or a group of students.
- Any act of financial extortion or forceful expenditure burden put on a fresher or any other student by students.
- Any act of physical abuse including all variants of it: sexual abuse, homosexual assaults, and stripping, forcing obscene and lewd acts, gestures, causing bodily harm or any other danger to health or person.

ADIMINISTRATIVE ACTION IN THE EVENT OF RAGGING:

The institution shall punish a student found guilty of ragging after following the procedure and in the manner prescribed here in under

a) Suspension from attending classes and academic privileges.
b) Withholding/ withdrawing scholarship/ fellowship and other benefits.
c) Debarring from appearing in any test/ examination or other evaluation process.
d) Withholding results.
e) Debarring from representing the institution in any regional, national or international meet, tournament, youth festival, etc.
f) Suspension/ expulsion from the hostel.
g) Cancellation of admission.
h) Rustication from the institution for period ranging from one to four semesters.
i) Expulsion from the institution and consequent debarring from admission to any other institution for a specified period.

Library: Late Shri Vishnuanna Patil Technical Library – This specious Library of the Institute is enriched with more than 59000 Volumes of books with more than 78 Indian, 30 International Journals, 538 online journals and periodicals are subscribed per month. Total nontechnical journal are 09, 1800 digital books and 400 Videos.

Gymkhana and N.S.S.

PVPIT has been keen in providing sufficient time and facilities for sports and gymnasium. The Gymkhana is equipped with the cardio and strength machines. The facilities for outdoor and indoor games like table-tenis, Volleyball, basketball, badminton courts as well as cricket, kho-kho and kabaddi are available. PVPIT shares the athletics track and indoor multipurpose hall with its neighboring sport complex.

The National Service Scheme (NSS) is an Indian government-sponsored flagship for public service program conducted by the Ministry of Youth Affairs and Sports of the Government of India. Popularly known as NSS, it provides opportunity to the student youth of Technical Institution, Graduate and Post Graduate at colleges and University level of India to take part in various government led community service activities and programmes. Under this program we always serve/ help community various social activities arrange by NSS. e.g. Blood Donation and Health Checkup camp, Swachh Bharat Abhiyaan and various social and National activities as per the directions receive from UGC and University..

Hostel

The institute has multi storey hostel building inside the institute campus, which accommodates about 450 boys. There is separate girl's hostel where 225 girls can live comfortably with all amenities. Guest housefacility is available for visiting parents. The hostels have all necessary facilitiessuch as water purification plant, water coolers, T.V. Medical First aid center,Water heating plant, News Paper, Reading Room, Indoor games, Canteen, Mess, Laundry,Xerox Center, Public Telephone booth are available inside the campus.

Training and Placement Office (TPO)

Placement @PVPIT Sangli: All students those who are interested for industrial placement, are groomed and prepared to face the interview process. Efforts are made by all means to provide maximum opportunities to each and every student, so that every eligible and interested student get at least one offer

Objectives of Training and Placement

The **Training and Placement (TandP)** cell at PVPITguide and counsel every students to choose their proper career path, make them eligible and employable.

Here we groom future Technocrats as per their interest and make them industry-ready. The objective is to

- Provide opportunities for industrial placements
- Motivate them for other placement opportunities *
- Motivate them to become future entrepreneur
- Motivatethem to opt for Higher Education and research.

At PVPIT students can have their choice of placement other than job in industry. Accordingly we provide with the source of appropriate knowledge and skill which would be resourceful them. Training is given to improve their aptitude and soft skillthrough expert agencies.

We provide proper platform for *other placements like teaching as a profession, competitive exams, higher education, education abroad, jobs in government or semi government, defence services and research sector. We encourage and empower student to become an entrepreneur and provide them necessary awareness and orientation about it.

Our Recruiters

Engineering Mathematics – I (4 Credits)
BTBS101

Teaching Scheme
Lecture: 3hrs/week
Tutorial: 1 hr/week

Evaluation Scheme
Continuous Assessment:- 20 Marks
Mid Term Test:-20 Marks
End Semester Exam:-60 Marks

Course Objectives:

1. To know the application of the matrix technique (Linear algebra) to find solutions of system of linear equations arising in many engineering problem
2. To know and apply the concept partial derivatives and their applications to Maxima/ Minima, series expansion of multi valued functions.
3. To understand Computation of Jacobian of functions of several variables and their applications to engineering problems
4. To identify and sketch of curves in various coordinate system.
5. To evaluate multiple integrals and their applications to area and volume.

Course Outcomes:

Students will be able to :

1. Apply the matrix technique (Linear algebra) to find solutions of system of linear equations arising in many engineering problem
2. Demonstrate the concept partial derivatives and their applications to Maxima/ Minima , series expansion of multi valued functions.
3. Compute Jacobian of functions of several variables and their applications to engineering problems
4. Identify and sketch of curves in various coordinate system.

Evaluate multiple integrals and their applications to area and volume

Unit No.	Details of Content	Hrs
1.	**Linear Algebra- Matrices** Rank of a matrix; Consistency of non- homogeneous and homogeneous system of linear equations ; Eigen values and eigen vectors ; Properties of eigen values and eigen vectors (without proofs); Cayley-Hamilton's theorem (without proof) and its application **[Topic for Self Study Mode:Inverse of a matrix by Gauss-Jordan method; Normal form of a matrix]**	6
2.	**Partial Differentiation** Partial derivatives of first and higher orders; Homogeneous functions – Euler's Theorem for functions containing two and three variables (with proofs); Total derivatives; **[Topic for Self Study Mode: Change of variables]**	6
3.	**Applications of Partial differentiation** Jacobians - properties; Taylor's and Maclaurin's theorems (without proofs) for functions of two variables; **[Topic for Self Study Mode: Maxima and minima of functions of two variables; Lagrange's method of undetermined multipliers.]**	6
4.	**Reduction Formulae and Curve Tracing** Tracing of the curves given in Cartesian, parametric and polar forms. **[Topic for Self Study Mode:Reduction formulae for**	6

	$\int_0^{\frac{\pi}{2}} \sin^n x\,dx$, $\int_0^{\frac{\pi}{2}} \cos^n x\,dx$, $\int_0^{\frac{\pi}{2}} \sin^n x \cos^n x\,dx$]	
5.	**Multiple Integrals** Double integration in Cartesian and polar co-ordinates; Evaluation of double integrals by changing the order of integration and changing to polar form; Triple integral; **[Topic for Self Study Mode:Applications of multiple integrals to find area as double integral , volume as triple integral and surface area.]**	**8**

Text Books

1) Higher Engineering Mathematics by B. S. Grewal, Khanna Publishers, New Delhi
2) Advanced Engineering Mathematics by Erwin Kreyszig, John Wiley and Sons, New York
3) A Course in Engineering Mathematics (Vol I) by Dr. B. B. Singh, Synergy Knowledgeware, Mumbai.
4) A Text Book of Applied Mathematics (Vol I and II) by P. N. Wartikar and J. N. Wartikar, Pune, Vidyarthi Griha Prakashan, Pune.
5) Higher Engineering Mathematics by H. K. Das and Er. RajnishVerma, S. Chand and CO. Pvt. Ltd., New Delhi.

Reference Books

1) Higher Engineering Mathematics by B. V. Ramana, Tata McGraw-Hill Publications, New Delhi.
2) A Text Book of Engineering Mathematics by Peter O' Neil, Thomson Asia Pte Ltd. , Singapore.
3) Advanced Engineering Mathematics by C. R. Wylie and L. C. Barrett, Tata Mcgraw-Hill Publishing Company Ltd., New Delhi.

General Instructions

- The tutorial classes in Engineering Mathematics-I are to be conducted batchwise. Each class should be divided into three batches for the purpose.
- The internal assessment of the students for 20 marks will be done based on assignments, surprise tests, quizzes, innovative approach to problem solving and percentage attendance.
- The minimum number of assignments should be eight covering all topics.

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE – RAIGAD -402 103

Semester Winter Examination – Dec.- 2019

Branch: B. Tech. (Common to all) **Semester:- I**
Subject:- Engineering Mathematics – I (MATH 101) **Marks: 60**
Date:- 11/12/2019 **Time:- 3 Hr.**

Instructions to the Students

1. Attempt **any five** questions of the following.
2. Illustrate your answers with neat sketches, diagram etc., wherever necessary.
3. If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly

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Q.1

(a) Determine the consistency of the set of equations:

$x - 2y + z = -5$; $x + 5y - 7z = 2$; $3x + y - 5z = 1$. [6 *Marks*]

(b) Find the eigen values and eigen vectors of the matrix $A = \begin{bmatrix} 3 & 1 & 4 \\ 0 & 2 & 6 \\ 0 & 0 & 5 \end{bmatrix}$. [6 *Marks*]

Q.2

(a) If $y = x^n \log x$, prove that $y_{n+1} = \frac{n!}{x}$. [6 *Marks*]

(b) Using Taylor's theorem,

Prove that $\log \sin x = \log \sin a + (x-a)\cot a - \frac{1}{2}(x-a)^2 \operatorname{cosec}^2 x + \cdots$ [6 *Marks*]

Q.3 Solve any TWO:

(a) If $u = \log(x^3 + y^3 + z^3 - 3xyz)$, show that $\left(\frac{\partial}{\partial x} + \frac{\partial}{\partial y} + \frac{\partial}{\partial z}\right)^2 u = \frac{-9}{(x+y+z)^2}$. [6 *Marks*]

(b) If z is a homogeneous function of degree n in x *and* y , prove that

$x^2 \frac{\partial^2 z}{\partial x^2} + 2xy \frac{\partial^2 z}{\partial x \partial y} + y^2 \frac{\partial^2 z}{\partial y^2} = n(n-1)z$. [6 *Marks*]

(c) If $z = f(x, y)$ where $x = e^u + e^{-v}$ & $y = e^{-u} - e^v$,
then show that $\frac{\partial z}{\partial u} - \frac{\partial z}{\partial v} = x\frac{\partial z}{\partial x} - y\frac{\partial z}{\partial y}$. [6 *Marks*]

Q.4

(a) If $u = \frac{yz}{x}$, $v = \frac{zx}{y}$, $w = \frac{xy}{z}$, show that $\frac{\partial(u,v,w)}{\partial(x,y,z)} = 4$. [4 *Marks*]

(b) Find the percentage error in the measurement of the area of an ellipse when an error of **1.5 %** is made

in measuring its major and minor axes. [4 Marks]

(c) Find the points on the surface $z^2 = xy + 1$ nearest to the origin. [4 Marks]

Q.5 Solve any TWO:

(a) Evaluate the integral $I = \int_0^1 \int_0^x e^{x+y}\, dy\, dx$. [6 Marks]

(b) Change the order of integration and evaluate $\int_0^{\frac{\pi}{2}} \int_x^{\frac{\pi}{2}} \frac{\cos y}{y}\, dx\, dy$. [6 Marks]

(c) Evaluate the integral $I = \int_0^a \int_0^x \int_0^{x+y} e^{x+y+z}\, dz\, dx\, dy$. [6 Marks]

Q.6

(a) State D' Alembert's ratio test, and hence check the convergence of the series:
$\sum_{n=1}^{\infty} \left(\frac{n^2}{2^n} + \frac{1}{n^2}\right)$. [6 Marks]

(b) State Cauchy's root test, and hence check the convergence of the series:
$\sum \frac{[(2n+1)\,x]^n}{n^{n+1}}$ $(x > 0)$. [6 Marks]

**********Paper End**********

Engineering Chemistry (4 Credit)
BTBS102

Teaching Scheme
Lecture: 3hrs/week
Tutorial:1he/week

Evaluation Scheme
Continuous Assessment:- 20 Marks
Mid Term Test:-20 Marks
End Semester Exam:-60 Marks

Course Objectives:

1. To know the demonstration of knowledge of Chemistry in technical fields.
2. To bring adaptability to new developments in Engineering Chemistry and to acquire the skills required to become a perfect engineer.
3. To understand and develop the importance of water in industrial and domestic usage.
4. To identify the concepts of Chemistry to lay the ground work for subsequent studies in various engineering fields.
5. To examine a fuel and suggest alternative fuels.

Course Outcomes: Students will be able to:

1. Demonstrate knowledge of chemistry in technical fields.
2. Bring adaptability to new developments in Engineering Chemistry and to acquire the skills required to become a perfect engineer.
3. Develop the importance of water in industrial and domestic usage.
4. Identify the concepts of Chemistry to lay the ground work for subsequent studies in various engineering fields.
5. Examine a fuel and suggest alternative fuels.

Unit No.	Details of Content	Hrs
1.	**Water Treatment** Introduction , hard and soft water, softening of water – Zeolite process, Ion exchange process, Hot Lime –Soda process, **[Topic for Self Study Mode: W**ater characteristics- Hardness and its determination by EDTA method,Dissolve oxygen (DO) and its determination by Winkler's method].	6
2.	**Phase Rule** Phase Rule, statement, Explaination of the terms – Phase, Components, Degrees of freedom. One component system – Water and Sulphur. **[Topic for Self Study Mode:** Reduced phase rule equation, Two components alloy system- Phase diagram of Silver- Lead alloy system].	7
3.	**Corrosion and its control** Introduction, Electrochemical corrosion (Wet Corrosion) Direct Chemical Corrosion (Dry Corrosion), Types of Corrosion – galvanic, Microbiological Corrosion, Methods tio minimize the rate of corrosion - Proper Design, Cathodic and Anodic protection method. **[Topic for Self Study Mode:**Fundamental reason of Corrosion, factors affecting the rate of corrosion].	6
4.	**Fuels and Lubricants** **Fuels:** Introduction, classification of fuel, Calorific value of a fuel, characteristics of a good fuel, solid fuel- Coal, Analysis of coal- Proximate and Ultimate analysis, liquid fuel- Refining of Petroleum. **[Topic for Self Study Mode:** Various types of Coal].	7
	Lubricants: Introduction, classification of lubricants - Solid, Semi –solid and Liquid Lubricants , properties of lubricants,Physical properties – Viscosity, Viscosity index,**[Topic for Self Study Mode:S**urface tension, Flash point and Fire point. Chemical properties – Acidity, Saponification].	

5.	**Electrochemistry** Introduction - Debye- Huckel theory of strong electrolyte, Conductometric titrations, Ostwald's theory of acid base indicator, Quinonoid theory, Glass electrode.**[Topic for Self Study Mode: Basic concepts**: Definition and units of Ohm's law, Specific resistance, Specific Conductance, Equivalent conductance, Molecular conductance, Method of conductance measurement by Wheatstone bridge method, Cell constant].	**6**

Text books:

1. Jain P.C and Jain Monica, Engineering Chemistry, DhanpatRaiand Sons, Delhi, 1992.
2. BhalandTuli, Text book of Physical Chemistry (1995), S. Chand and Company, New Delhi.
3. O. G. Palanna , Engineering Chemistry, Tata McGraw-Hill Publication, New Delhi.
4. S. S. Dara, A textbook of Engineering Chemistry, McGraw-Hill Publication, New Delhi.

Reference books:

1. Barrow G.M., Physical Chemistry, McGraw-Hill Publication, New Delhi.
2. ShikhaAgarwal, Engineering Chemistry- Fundamentals and applications, Cambridge Publishers - 2015.
3. WILEY, Engineering Chemistry, Wiley India, New Delhi 2014.
4. Atkins, Physical chemistry.

Engineering Chemistry Laboratory
BTBS108L

Practical Scheme
Lecture: 2hrs/ Batch
External Exam:-40 Marks

Evaluation Scheme
Continuous Assessment:- 60 Marks

	List of Experiments: (Perform any 10 Experiments)
Sr. No.	**Practical**
1	Determination of Hardness of water sample by EDTA method.
2	Determination of Chloride content in water sample by precipitation titration method.
3	Determination of Dissolve Oxygen in water by Iodometric method.
4	Determination of percent purity of Bleaching Powder.
5	pH – metric Titration (Acid Base titration)
6	Conducto-metric Titration (Acid Base titration)
7	Surface tension
8	Viscosity
9	To determine acidity water sample.
10	To determine calorific value of a fuel.
11	Determination of Acid value of an oil sample.
12	Determination of Saponification value of an oil sample.
13	Experiment on water treatment by using Ion exchange resins.
14	To find out P-T curve diagram of steam.
15	To determine alkalinity water sample.

Reference Books:

1. Systematic experiments in Chemistry, A. Sethi, New Age International Publication, New Delhi.
2. Practical Inorganic Chemistry, A. I. Vogel, ELBS Pub.
3. Practical in Engineering Chemistry, S. S. Dara.

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,LONERE
Winter End Semester Examination –Dec 2019

Course: F.Y.B. Tech **Sem: I**
Subject: Engineering Chemistry (CHM103/CHM203) **Marks: 60**
Date: 16/12/2019 **Duration: 3 Hr.**

Instructions to the Student:
1 Each question carries 12 marks.
2 Attempt any FIVE questions of the following.
3 Illustrate your answers with neat sketches, Diagram etc. Whenever necessary.

		(Level / CO)	Marks
Q.1	Solve **Any Two** questions of the following.		
	A) Explain Zeolite process of softening of water with its advantages and disadvantages	01	06
	B) Write a note on Biological Oxygen Demand (BOD).	01	06
	C) How does the hardness of water determined by using EDTA method.	01	06
Q.2	Attempt the following questions.		
	A) Explain in detail Phase diagram of Water system	02	06
	B) State Phase Rule equation. Explain the term Phase and Component with suitable examples.	02	06
Q.3	Attempt the following questions.		
	A) Explain the Froth-Flotation & Magnetic separation method for concentration of ore.	03	06
	B) Explain the reduction of ore by Smelting process	03	06
Q.4	Solve **Any Two** questions of the following.		
	A) Explain Proximate Analysis of Coal.	04	06
	B) Give the classification of fuel and explain characteristics of a good fuel.	04	06
	C) Discuss the type of Lubrication with examples.	04	06
Q.5	Attempt the following questions.		
	A) Explain Synthesis, Physical, Chemical properties and uses of Pyridine.	05	06
	B) How does ethyl alcohol manufacture from molasses by fermentation Process	05	06
Q.6	Solve **Any Two** questions of the following.		
	A) Write a note on : Conductometric titrations	06	06
	B) Explain Ostwald's theory of acid base indicators.	06	06
	C) Write a note on: Glass electrode.	06	06

Paper End

Engineering Mechanics (3 Credits)
BTES103

Teaching Scheme
Lecture: 2hrs/week
Tutorial:1hr/week

Evaluation Scheme
Continuous Assessment:- 20 Marks
Mid Term Test:-20 Marks
End Semester Exam:-60 Marks

Course Objectives:

1. To know and apply fundamental Laws of Engineering Mechanics
2. To know and apply Conditions of static equilibrium to analyze given force system
3. To compute Centre of gravity and Moment of Inertia of plane surfaces
4. To compute the motion characteristics of a body/particle for a Rectilinear and Curvilinear Motion
5. To know and discuss relation between force and motion characteristics

Course Outcomes: Students will be able to:

1. Apply fundamental Laws of Engineering Mechanics
2. Apply Conditions of static equilibrium to analyze given force system
3. Compute Centre of gravity and Moment of Inertia of plane surfaces
4. Compute the motion characteristics of a body/particle for a Rectilinear and Curvilinear Motion
5. Know and discuss relation between force and motion characteristics

Unit No.	Details of Content	Hrs
1	**Basic Concepts** Objectives of Engineering Analysis and Design, Idealization of Engineering Problems, Simplification ofreal 3D problems to 2-D and 1-D domain,Basis of Assumptions, types of supports, types of load, freebody diagram, Laws of Motion, Varignon's theorem, [**Topics for self study mode:** Fundamental principles, Resolution and composition of a forces, Resultant, couple, moment, force systems. Ultrasonic waves, production of ultrasonics (Piezoelectric effect, magnetostriction effect) and its applications]	7
2	**Equilibrium** Static equilibrium, analytical and graphical conditions of equilibrium, Lami's theorem, Simple trusses(plane and space), method of joints for plane trusses, method of sections for plane trusses**Friction:**Coulomb law, friction angles, wedge friction, sliding friction and rolling resistance. [**Topics for self study mode:**Equilibrium of coplanar concurrent forces, coplanar non concurrent forces, parallel forces, beams reactions].	7
3	**Friction, and Analysis of trusses: (03 Hrs)** Friction: Coulomb law, friction angles, wedge friction, sliding friction and rolling resistance. [Topics for self study mode:- Simple trusses (plane and space), method of joints for plane trusses, method of sections for plane trusses.]	7
4	**Kinematics: (04 Hrs)** Types of motions, kinematics of particles, rectilinear motion, constant and variable acceleration, relative motion, motion under gravity, concept of instantaneous center of rotation, concept of relative velocity. [Topics for self study mode:- Study of motion diagrams, angular motion, tangential and radial acceleration, projectile motion, kinematics of rigid bodies.]	6
	Kinetics, and Work, Power, Energy: (04 Hrs)	

5	Principle of virtual work, virtual displacements for particle and rigid bodies, , kinetic energy of linear motion and rotation, power, impulse momentum principle, collision of elastic bodies. [Topics for self study mode:- Work done by a force, spring, potential energy, work energy equation, conservation of energy.]	**6**

Text Books

1. S. Timoshenko, D. H. Young, "Engineering Mechanics", McGraw Hill, 1995.
2. Tayal A. K., "Engineering Mechanics", Umesh Publications, 2010.
3. Bhavikatti S. S., Rajashekarappa K. G., "Engineering Mechanics", New Age International Publications,2nd Edition.
4. Beer, Johnston, "Vector Mechanics for Engineers", Vol. 1: Statics and Vol. 2: Dynamics, McGraw Hill Company Publication, 7th edition, 1995.
5. Irving H. Shames, "Engineering Mechanics - Statics and Dynamics", Pearson Educations, Fourth edition, 2003.
6. McLean, Nelson, "Engineering Mechanics", Schaum's outline series, McGraw Hill Book Company, N.Delhi, Publication.
7. Singer F. L., "Engineering Mechanics - Statics and Dynamics", Harper and Row Pub. York.
8. Khurmi R. S., "Engineering Mechanics", S. Chand Publications, N. Delhi

Engineering Mechanics Laboratory BTES109L	
Practical Scheme Lecture: 2hrs/ Batch External Exam:-40 Marks	**Evaluation Scheme** Continuous Assessment:- 60 Marks
Sr. No.	Students are expected to satisfactorily complete any ten experiments listed below. **List of Practical's/Experiments/Assignments**
1	Polygon law of coplanar forces.
2	Centroid of irregular shaped bodies.
3	Bell crank lever.
4	Support reaction for beam.
5	Problems on beam reaction by graphics statics method.
6	Simple / compound pendulum.
7	Inclined plane (to determine coefficient of friction).
8	Collision of elastic bodies (Law of conservation of momentum).
9	Moment of Inertia of fly wheel.
10	Verification of law of Machine using Screw jack
11	Verification of law of Machine using Worm and Worm Wheel
12	Verification of law of Machine using Single and Double Gear Crab.
13	Assignment based on graphics statics solutions
14	Application of Spreadsheet Program for conceptslike law of moments, beam reactions, problems in kinematics, etc.
15	Any other innovative experiment relevant to Engineering Mechanics

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE – RAIGAD – 402 103

Winter Semester Examination – December – 2019

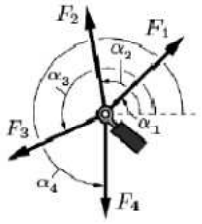
Branch: B. Tech. (Group A / Group B) | **Semester: I/II**
Subject with Subject Code: Engineering Mechanics (ME102/ME202) | **Marks: 60**
Date: 20 / 12 / 2019 | **Time: 3 Hrs.**

Instructions: 1] Attempt any **5 Questions**. Each Question Carry **12 Marks**.
2] Figures to the right indicate full marks.
3] Assume suitable data, if necessary. Neat diagrams must be drawn wherever necessary.

Q. No. 1 Solve any two:

A) Define: Rigid body, Statics, and Line of action of force. **(6)**

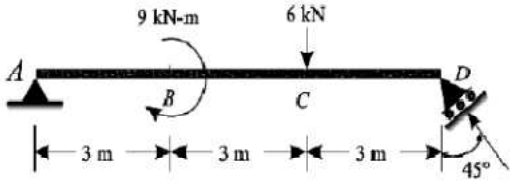
B) An eyebolt is subjected to four forces as shown in figure. F_1=12 kN, F_2 = 8 kN, F_3= 18 kN, F_4=4 kN that act at angles of $\alpha_1 = 45°$, $\alpha_1 = 45°$, $\alpha_2 = 100°$, $\alpha_3 = 205°$, $\alpha_4 = 270°$. Determine the magnitude and direction of the resultant force **(6)**



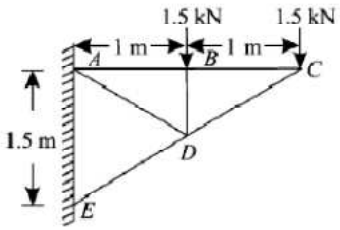
C) State: Parallelogram law of forces. **(6)**

Solve: Two persons are pushing a box so that the net force on the box is 12 N to the east. If one of the person is applying a force 5 N to the north, what is the force applied by the other person.

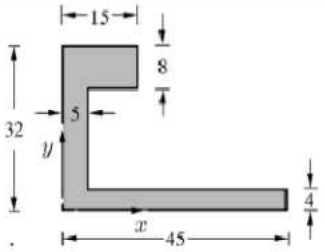
Q. No. 2 A) Find the support reactions for a simply supported beam shown in figure. **(6)**



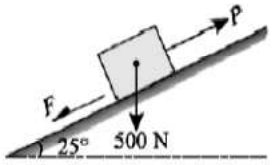
B) Determine the forces in the various members of a pin-joined frame as shown in figure. Tabulate the result stating whether they are in tension or compression. **(6)**



Q. No. 3 **A)** Determine the coordinates x_c and y_c of a plane lamina as shown in figure. **(6)**



B) A block of weight 500 N is lying on a rough plane inclined at an angle of 25° with the horizontal. It is supported by a pull (P) parallel to the plane as shown in figure. The angle of friction is 20°. Determine the minimum and maximum values of P, for which the equilibrium can exist. **(6)**



Q. No. 4 **A)** A ball is projected upwards with a velocity of 60 m/s and reaches a maximum height of 5 metres above ground level. Determine the angle of projection and point where it hits the ground. **(6)**

B) A wheel increases its speed from 45 r.p.m. to 90 r.p.m. in 30 seconds. Find (a) angular acceleration of the wheel, and (b) no. of revolutions made by the wheel in these 30 seconds. **(6)**

Q. No. 5 **A)** At a certain instant, a body of mass 10 kg, falling freely under the force of gravity, was found to be falling at the rate of 20 m/s. What force will stop the body in (i) 2 seconds and (ii) 2 metres? **(6)**

B) State and explain in brief D'Alembert's principle. **(6)**

Q. No. 6 **A)** A railway engine of mass 20 tonnes is moving on a level track with a constant speed of 45 km.p.h. Find the power of the engine, if the frictional resistance is 80 N/t. Take, efficiency of the engine as 80 %. **(4)**

B) What is meant by Newton's law of collision of elastic bodies? Write its mathematical expression. **(4)**

C) State: The work-energy principle for a system of particles. **(4)**

----- END OF PAPER -----

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Computer Programming in C (2 Credits)
BTES104

Teaching Scheme
Lecture: 2hrs/ week

Evaluation Scheme
Continuous Assessment:- 20 Marks
Mid Term Test:-20 Marks
End Semester Exam:-60 Marks

Course Objectives:

1. To give a broad perspective about the uses of computers in engineering industry and C Programming.
2. To develop the basic concept of algorithm, algorithmic thinking and flowchart.
3. To apply the use of C programming language to implement various algorithms and develops the basic concepts and terminology of programming in general.
4. To make familiar the more advanced features of the C language.
5. To identify tasks in which the numerical techniques learned are applicable and apply them to write programs and hence use computers effectively to solve the task.

Course Outcomes: Students will be able to:

1. Gain a broad perspective about the uses of computers in engineering industry and C Programming.
2. Develop the basic concept of algorithm, algorithmic thinking and flowchart.
3. Apply the use of C programming language to implement various algorithms and develops the basic concepts and terminology of programming in general.
4. Use the more advanced features of the C language.
5. Identify tasks in which the numerical techniques learned are applicable and apply them to write programs and hence use computers effectively to solve the task.

Unit No.	Details of Content	Hrs
1.	**Process of programming:** Editing, Compiling, Error Checking, executing, testing and debugging of programs. [Topics for self study mode:-IDE commands. Eclipse for C Program development, Flowcharts, Algorithms.]	4
2.	**Types, Operators and Expressions:** Variable names, Data types, sizes, constants, declarations, arithmetic operators, relational and logical operators, type conversions, increment and decrement operators, bitwise operators, assignment operators and expressions, [Topics for self study mode:-conditional expressions precedence and order of evaluation.]	4
3.	**Control Flow:** Statements and Blocks. If-else, else-if switch Loops while and for, do-while break and continue goto and Labels. Functions and Program Structure: Basic of functions, functions returning nonintegers [Topics for self study mode:-external variables scope rules.]	4
4.	**Arrays in C:** Initializing arrays, Initializing character arrays ,multidimensional arrays.	4
5.	**Structures C:** Basics of structures, structures and functions arrays of structures, [Topics for self study mode:-**Pointer in C**. Pointers to integers, characters, floats, arrays, structures]	4
	Special Note: Topic of Pointers in C is only for lab exercises and not for end semester examinations.	

Reference/Text Books:

1. Brain W. Kernighan and Dennis Ritchie, The C Programming Language, Prentice Hall, 2 ndEdition, 1988.
2. R. S. Bichkar, Programming with C, Orient Blackswan, 1 st Edition, 2012.
3. Herbert Schildit, C the Complete Reference, McGraw-Hill Publication, 2000.
4. Balguruswamy, Programming in C, PHI.
5. YashwantKanitkar, Let Us C, PHI

Computer Programming in C: Laboratory
BTES107L

Practical Scheme
Practical : 2hrs/ Batch
External Exam:-40 Marks

Evaluation Scheme
Continuous Assessment:- 60 Marks

List of Practical	
1	Assignment on Flow Chart.
2	A Simple program to display a message “Hello world” on screen.
3	A Program to take input from user and display value entered by user on screen.
4	Basic example for performing different C Operations using operator. (With and without using scanf()).
5	Basic Program on Operator. (Using scanf()).
a)	Program to find and print area, perimeter and volume of geometric objects.
b)	Program to check a number entered by user is Perfect number or not.
6	Program to find maximum and minimum between two numbers given by user using if-else and conditional Operators.
7	Program to swap two numbers.
8	Program to print square and factorial of an entered number using while loop.
9	Program to check a number is Palindrome number or not.
10	Program to check Armstrong number.
11	Program to check and generate prime numbers up to n.
12	Program to find GCD of two entered numbers.
13	Program to find maximum and minimum from n entered numbers.
14	Program to print alternate numbers from n entered numbers.
15	Program to search an element in an Array using linear and binary search.
16	Program to print entered numbers in ascending order using sorting.
17	Program to print addition, subtraction and multiplication of Matrices.
18	Program to find length of string. (With and without using library function).
19	Programs demonstrating use of Structures, Arrays of Structures and Structure containing arrays.
20	Programs demonstrating use of pointers to integers, floats, char, strings, structures and arrays.

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE - RAIGAD -402 103
Winter Semester Examination - Dec. - 2019

Branch: B. Computer Engineering **Sem.:-I**
Subject:- Computer Programming in C [CP1204] **Marks: 60**
Date:- 23/12/2019 **Time:- 3 Hr.**

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Instructions to the Students

1. Each question carries 12 marks.
2. Attempt **any five** questions of the following.
3. Illustrate your answers with neat sketches, diagram etc., wherever necessary.
4. If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly

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(Marks)

Q.1. Attempt any two (12)

a) What is algorithm? Write down its characteristics.

b) What are the different symbols, its purpose and give its description with which is used for different states in flow chart?

c) Explain language translators in details. Differentiate between compiler and interpreter.

Q.2. Solve the following (12)

a) Define variable. With suitable example explain variable declaration. Explain the rules for constructing variable names.

b) The length & breadth of a rectangle and radius of a circle are input through the keyboard. Write a program to calculate the area & perimeter of the rectangle, and the area & circumference of the circle.

Q.3. Attempt any two of following (12)

a) Write a program to print Fibonacci series up to the term entered by the user.

b) What is switch statement? Explain its syntax. What is the use of break statement?

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c) What is function prototype? Write a program to find sum of 4 digits by using function.

Q.4 Solve the following (12)

a) What is array? Write syntax of one-dimensional array. Write a program to read and print a matrix of 3X3.

b) What are the types of string manipulation functions in C? Write a program by using any three string manipulation functions.

Q.5. Solve the following (12)

a) Write a program in C by using structure to store information of student i.e. name, roll number and marks. And also display it.

b) Define structure. How to create structure? How to initialize structure? How to declare structure variable?

Q.6. Solve any **three** of the following (3x4=12)

a) Explain programming process in detail.

b) Explain relational and logical operators

c) Define function. How to pass values into function?

d) Write a short note on multidimensional array.

e) Explain array of structure

Paper End

Basic Electrical and Electronics Engineering (Audit)
BTES106

Teaching Scheme Lecture: 2hrs/week

Evaluation Scheme Continuous Assessment:- 50 Marks

Course Objectives:

1. To know and apply basic ideas and principles of electrical engineering.
2. To Identify protection equipment and energy storage devices.
3. To differentiate electrical and electronics domains and explain the operation of diodes and transistors.
4. To acquire knowledge of digital electronics
5. To design simple combinational and sequential logic circuits.

Course Outcomes: Students will be able to:

1. Apply basic ideas and principles of electrical engineering.
2. Identify protection equipment and energy storage devices.
3. Differentiate electrical and electronics domains and explain the operation of diodes and transistors.
4. Acquire knowledge of digital electronics.
5. Design simple combinational and sequential logic circuits.

Unit No.	Details of Content	Hrs
1	**Elementary Electrical Concepts:** Fundamental of Electrical system Potential difference, Ohm's law, Effect of temperature on resister, resistance temperature coefficient, Electrical wiring system: Study of different wire gauges and their applications in domestic and industry. Energy Resources and Utilization: Conventional and nonconventional energy resources; Introduction to electrical energy generation from different resources, transmission, distribution and utilization, Advantages and Disadvantages of AC and DC transmission. Concept of Supply Demand, Power Factor, Need of unity factor.	4
2	**Measurement of Electrical Quantities:** Measurement of Voltage, Current, and Power; Measurement of 3 phase power; Study of Energy meters. Study of Electrical Storage devices: Batteries such as Nickel-cadmium (NiCd), Lithiumion (Li-ion), Lithium Polymer (Li-pol.) batteries. Study of circuit breakers and Actuators (MCB andMPCB, Power Contactors and Aux contactors, Electro-Mechanical and Solid state Relays)	4
3	**Diodes and Circuits**: The P-N Junction Diode, V-I characteristics, Diode as Rectifier, specifications of Rectifier Diodes, Half Wave, Full wave, Bridge rectifiers, Equations for IDC VDC VRMS, IRMS, Efficiency and Ripple Factor for each configuration. Filters: Capacitor Filter, Choke Input Filter, Capacitor Input Filter(Π Filter), Zener Diode, Characteristics, Specifications, Zener Voltage Regulator, Types of Diodes: LED, Photodiode	4
4	**Semiconductor Devices and Applications:** Transistors: Introduction, Classification, CE, CB, and CC configurations, α, β, concept of gain and bandwidth. Operation of BJT in cut-off, saturation and active regions (DC analysis). BJT as an amplifier, biasing techniques of BJT,	4

	BJT as a switch. Introduction to Digital Electronics: Number System, Basic logic Gates, Universal Gates, Boolean Postulates, De-Morgan Theorems	

Reference/Text Books:

1. V. N. Mittal and Arvind Mittal, Basic Electrical Engineering, McGraw-Hill Publication.
2. BrijeshIyer and S. L. Nalbalwar, A Text book of Basic Electronics, Synergy Knowledgeware Mumbai, 2017. ISBN:978-93-8335-246-3
3. Vincent DelToro, Electrical engineering Fundamentals, PHI Publication, 2nd Edition, 2011.
4. Boylstad, Electronics Devices and Circuits Theory, Pearson Education.
5. Edward Hughes, Electrical Technology, Pearson Education.
6. D. P. Kothari and Nagrath, Theory and Problems in Electrical Engineering, PHI Publication, 2011.
7. B. L. Theraja, Basic Electronics, S. Chand Limited, 2007.
8. MillmanHalkias, Integrated Electronics-Analog and Digital Circuits and Systems, McGraw-Hill Publication, 2000.
9. Donald Neaman, Electronic Circuit Analysis and Design, McGraw-Hill Publication, 3rdEdition.
10. Donald Neaman, Electronic Circuit Analysis and Design, McGraw-Hill Publication, 3rd Edition.
11. Printed Circuit Boards Design and Technology, Walter C. Bosshart, McGraw-Hill Publication.

Note: Students are advised to use internet resources whenever required

Workshop Practices
BTES105

Practical Scheme
Lecture: 4hrs/Batch

Evaluation Scheme
Continuous Assessment:- 60 Marks
External Exam:- 40 Marks

Instructions to the student:
Each student is required to maintain a „workshop diary" consisting of drawing / sketches of the jobsand a brief description of tools, equipment, and procedure used for doing the job.

Sr. No.	List of Practical:
1.	Wood sizing exercises in planning, marking, sawing, chiseling and grooving to make half lap joint and cross lap joint.
2.	A job involving cutting, filing to saw cut, filing all sides and faces, corner rounding, drilling and tapping on M. S. plates.
3.	A job on use of plumbing tools and preparation of plumbing line involving fixing of water tap and use of elbow, tee, union and coupling, etc.
4.	Making a small parts using GI sheet involving development, marking, cutting, bending, brazing andsoldering operations- i)Tray ii) Funnel and similar articles.
5	Exercise in Arc welding (MMAW) to make a square butt joint.
6.	Exercise in Resistance (Spot) welding to make a lap joint.
7.	A job using power operated tools related to sheet metal work, Welding, Fitting, Plumbing, Carpentry and pattern making.
8.	A job on turning of a Mild Steel cylindrical job using center lathe.
	Contents:
a)	**Carpentry:** Technical Terms related to wood working, Types of wood, Joining materials, Types of joints - Mortise and Tenon, Dovetail, Half Lap, etc., Methods of preparation and applications, Wood working lathe, safety precautions.
b)	**Welding:** Arc welding - welding joints, edge preparation, welding tools and equipment, Gas welding -types of flames, tools and equipment, Resistance welding - Spot welding, joint preparation, tools and equipment, safety precautions.
c)	**Fitting and Plumbing:** Fitting operation like chipping, filing, right angle, marking, drilling, tapping etc., Fitting hand tools like vices, cold chisel, etc. Drilling machine and its operation, Different types of pipes, joints, taps, fixtures and accessories used in plumbing, safety precautions.
d)	**Sheet Metal Work:** Simple development and cutting, bending, Beading, Flanging, Lancing and shearing of sheet metal, Sheet metal machines - Bending Machine, Guillotine shear, Sheet metal joints, Fluxes and their use.
e)	**Machine shop**: Lathe machine, types of lathes, major parts, cutting tool, turning operations, safety precautions

Reference/ Text Books:

1. K. C. John, Mechanical Workshop Practice, Prentice Hall Publication, New Delhi, 2010.
2. Hazra and Chaudhary, Workshop Technology-I, Media promoters and Publisher private limited

1) CREDIT SYSTEM AND MODE OF EVALUATION

All the courses in the University and affiliated colleges shall be credit based and the evaluation will be grade based. Credit based grading system is a systematic way of describing an educational programme by attaching credits to its components. The definition of credits may be based on different parameters, such as student workload, learning outcomes and contact hours. It is a student-centric system based on the student workload required to achieve the objectives of a programme. It should facilitate academic recognition of the courses and mobility of the students. Credits assignment is based on the principle that Credits can only be obtained after successful completion of the work required and appropriate assessment of the learning outcomes achieved. Student workload consists of the time required to complete all prescribed learning activities such as attendance at lectures/practical, seminars, projects, etc. Credits are allocated to all the educational components of a study programme and indicate the quantity of work each component requires to achieve its specific objectives. Evaluation is an important component of any teaching-learning process. The University gives emphasis on continuous evaluation with considerable freedom to the teacher in deciding the mode of evaluation of the students. The performance of the student is documented by a grade at the end of the semester. The grading scale ranks the students on a statistical basis. Therefore, statistical data on student performance in his/her class is a prerequisite for applying the grading system.

2. Course Credits

In general, a certain quantum of work measured in terms of credits is laid down as the requirement for a particular degree. The student acquires credits by passing courses every semester, the amount of credits associated with a course being dependent upon the number of hours of instruction per week in that course. There are mainly two types of courses in the University - lecture courses and laboratory courses. Lecture courses consist of lecture (L) and tutorial (T) hours. Laboratory courses consist of practical (P) hours. As per the AICTE norms, the credit (C) for a course is dependent on the number of hours of instruction per week in that course, as given below: (1) 1h/week of lecture (L) or tutorial (T) = 1 credit (2) 2h/week of Practical's (P) = 1 credit (3) Credit (C) for a theory course = No. of hours of lectures per week + No. of hours of tutorials per week = L + T (4) Credits (C) for a Laboratory course = ½ x No. of hours of laboratory course per week Credits will be assigned

to Industrial Training, Seminar, Projects and other mandatory course requirements also and these will be mentioned in the respective syllabi. There may be some non-credit requirements. A student is required to earn credits as mentioned in the syllabus.

3. Evaluation

The weightages of different modes of assessments shall be as under.

In-Semester evaluation				
	Continuous mode(CA)	**Mid Semester Exam**	**EndSemesterExam**	**Components of continuous mode**
Theory	20%	20%	60%	Quizzes, class tests (open or closed book but minimum 2 in the semester if only mode of CA), home assignments, group assignments, viva-voce discussions
Practical's	60%	-	40%	Attendance, completion of experiments viva -voce, journal submission, assignments, project, experiments, announced test

4) In-Semester Evaluation

a) It is expected that the teacher would conduct at least two formal assessments of the students under the continuous assessment mode in a Semester

b) The teacher will announce at the beginning of the respective course the method of conducting the assessments under the continuous mode and the assignment of marks and inform the same to the Director- Academics or Dean in University or Principal/HoD in affiliated college in the first week of the semester. The same may be also displayed on the University/ College Portal.

c) The teacher shall keep the record of the continuous assessment of a class at least for three years and produce it to the Principal of the college or Director-Academics, if needed.

d) In-semester performance of all students, both continuous assessment and midsemester examination should be displayed on notice board as well on College / University Portal and sent to the academic office of the University/ College by the teacher before the end-semester examination. e) For the theory courses, there will be one Mid-semester test for

each course to be held as per the schedule fixed in the Academic Calendar of the University/college, preferably in the eighth week of the semester

e) A candidate who has not appeared for the in-semester continuous tests and/or midterm examination in one or more subjects shall be considered to have not completed the course and will have to re-register for the respective subjects/course in the following year.

5) End-Semester examination

The semester end examination will cover the full syllabus of the course and will be conducted as per the University time table at the end of each semester.

5.1) Pass and Fail

(Revised as per the Item 8 of the Minutes of the Academic Council Meeting held on 19th August 2017)

(a) The candidates who obtain 40% and more marks in a subject head of the end semester examination AND 40% or more of the total marks of a subject head shall be deemed to have passed the respective subject head.

(b) The candidates who obtain less than 40% of marks in a subject head of the end semester examination and less than 40% the total marks of a subject head shall be deemed to have failed in the respective subject head (Grade FF).

5.2) Grades

(a) The performance of a student shall be documented by a Letter grade. Each letter grade has a Grade point associated with it. The Grades and Grade points shall be assigned to each head of passing and both will be indicated in the mark-list of the semester examination.

(b) A teacher shall assign absolute marks to all the in-semester tests and the end-semester tests for the respective subject head. The teacher shall collate the marks in the midsemester and continuous mode examinations convert them to prescribed 20% and 20% mark, respectively and submit the same to the office.

(c) The total marks (continuous assessment + mid-semester + end-semester) of a candidate in a subject head are converted into a letter grade, based on the relative performance of the student in the class taking examination in the subject. The performance of the students who have passed the said subject shall be considered for the allotment of the relative grade on statistical basis.

Letter Grade	Grade Point
EX	10
AA	9.5
AB	9
BB	8.5
BC	8.0
CC	7.5
CD	7
DD	6.5
DE	6.0
EE	5

(d) The grades to be allotted in the case of students who fail or do not appear at the end semester examination shall be as under.

Letter Grade	Grade Point	Explanation
FF	0	The candidate fails in subject head. The candidate will be allowed to take end-semester repeat or subsequent examinations as per rule
XX	0	(i) The candidate has not kept term for the subject head due to attendance less than requisite 75%. (ii) The in-semester performance of the candidate is very poor. Further see 7.3.5(g) In the above cases, the candidate has to repeat the respective course by paying the fees in the following year
I	0	The candidate has kept term for the subject head, has taken all the internal examinations with satisfactory performance, but has failed to take the end-semester examination due to genuine reasons. The candidate will be allowed to take subsequent examinations as per rule
FR	0	The candidate has exhausted all the permissible chances to clear the end-semester examinations. The candidate has to register for the respective semester again for all the subject heads or will be out of the respective degree course as per the rules

DR	0	(i) The candidate hasn't participated in academic programme. (ii) The candidate has taken a drop for the subject head;- provided he/she intimates the same (i or ii) at least 7 days in advance of the commencement of the end-semester examination for the respective year.

(e) Grades FF and I are place-holders only and do not enter into CGPI/SGPI calculations directly. These grades get converted to one of the regular grades after the end-semester examination.

(f) A candidate with an FR grade has appeared for maximum number of permissible six end semester examinations and has to re-register for that course by paying the appropriate fees.

(g) I grade will not be continued beyond the permissible number of six consecutive end semester examinations, irrespective of whether the candidate fails to take any of these exams.

(h) 'XX' Grade: The grade XX in a course is awarded if – (i) a candidate does not maintain the minimum 75% attendance in the Lecture/Tutorial/Practical classes, (ii) the student has bad or incomplete in-semester records, for example, a candidate missing all internal tests and mid-semester examination, etc., (iii) a candidate indulges in a misconduct/uses unfair means in the examination, assignments, etc., of a nature serious enough to invite disciplinary action in the opinion of the teacher. (Note: Award of the XX grade in the case of g(iii) above shall be done by Disciplinary Action Committee (DAC)).

(i) The names/roll numbers of students to be awarded the XX grade should be communicated by the teacher to the Academic office as per academic calendar before the last date of submission of the application for end-semester examination

5.3. Awarding the grades

(1) The grading scale ranks the students on a statistical basis on the basis of the overall performance of the students of a given class in the given subject head. Therefore, statistical data on students' performance is a prerequisite for applying the grading system. While assigning grades in a given subject head, it is essential to know the average marks (AM) obtained by the students who have passed the subject head and the highest marks (HM) obtained in the same subject head.

(a) EX Grade shall be awarded to the candidate(s) who scored highest mark (HM) in the concerned subject head provided the marks obtained are 80% or higher in the given subject head.

(b) If the average marks (AM) obtained by the students who have passed the subject head is such that $60\% \leq AM < 70\%$, the interval AM shall be awarded grade CC and the other grades shall be decided as follows:

(c) AA, AB, BB grades shall be decided between the AM and HM by dividing the range in equal intervals.

(d) CC, CD, DD, DE and EE grades shall be decided between the AM and minimum marks required for passing the head (i.e. 40%) by dividing the range in equal intervals.

(2) If the average marks (AM) obtained by the students who have passed the subject head is ≥ 70%, the interval AM shall be awarded grade BB and the other grades shall be decided as follows:

(a) AA, AB and BB grades shall be decided between the AM and HM by dividing the range in equal intervals.

(b) BC CC, CD, DD, DE and EE grades shall be decided between the AM and minimum marks required for passing the head (i.e. 40%) by dividing the range in equal intervals

(3) Illustration of award of different grades are explained in the following examples:

i) Example 1: HM = 92, AM = 76

Hence, IL = (76-40)/6 = 6, IU = (92-76)/3 = 5.33 ≈ 5

ii) Example 2: HM = 84, AM = 62

Hence, IL = (62-40)/5 = 4.4 ≈ 4, IU = (84-62)/4 = 5.5 ≈ 6

Marks distribution for different grades

Sr. No.	Letter Grade	Example 1 (HM=92, AM= 76, IL = 6, IU = 5	Example 2 (HM=84, AM= 62, IL = 4, IU = 6
1	EE	40 to 45	40 to 43
2	DE	46 to51	44to45
3	DD	52 to 57	48to 50
4	CD	58 to 63	52 to 55
5	CC	64to 69	56to 62
6	BC	70 to 76	63 to 68
7	BB	77 to 81	69 to 74
8	AB	82 to 86	75 to 80
9	AA	87 to 91	81 to 83
10	EX	92	84

6. Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA)

(a) Semester Grade Point Average (SGPA)

The performance of a student in a semester is indicated by Semester Grade Point Average (SGPA) which is a weighted average of the grade points obtained in all the courses

taken by the student in the semester and scaled to a maximum of 10. (SGPI is to be calculated upto two decimal places). A Semester Grade Point Average (SGPA) will be computed for each semester as follows:

$$SGPA=\frac{(\sum_{i=1}^{n} c1g1)}{(\sum_{i=1}^{n} c1)}$$

Where

'n' is the number of subjects for the semester,

'ci' is the number of credits allotted to a particular subject, and

'gi' is the grade-points awarded to the student for the subject based on his performance as per the above table.

SGPA will be rounded off to the second place of decimal and recorded as such.

(b) Cumulative Grade Point Average (CGPA):

An up to date assessment of the overall performance of a student from the time he entered the Institute is obtained by calculating Cumulative Grade Point Average (CGPA) of a student. The CGPA is weighted average of the grade points obtained in all the courses registered by the student since s/he entered the Institute. CGPA is also calculated at the end of every semester (up to two decimal places). Starting from the first semester at the end of each semester (S), a Cumulative Grade Point Average (CGPA) will be computed as follows:

$$CGPA=\frac{(\sum_{i=1}^{m} c1g1)}{(\sum_{i=1}^{m} c1)}$$

Where,

'm' is the total number of subjects from the first semester onwards up to and including the semester S
'ci' is the number of credits allotted to a particular subject, and
'gi' is the grade-points awarded to the student for the subject based on his/her performance as per the above table.

CGPA will be rounded off to the second place of decimal and recorded as such.

(c) The CGPA, SGPA and the grades obtained in all the subjects in a semester will be communicated to every student at the end of every semester/ beginning of the next semester.

(d) When a student gets the grade 'FF', or I' in any subject head during a semester, the SGPA and CGPA from that semester onwards will be tentatively calculated, taking only 'zero' grade point for each such 'FF' or 'I' grade. When the 'FF' grade(s) has/ have been substituted by better grades after the repeat examination or subsequent semester examination, the SGPA and CGPA will be recomputed and recorded.

7. Supplementary End-Semester Examination

(Revised as per the item 7 of Minutes of the Academic Council meeting held on 19th August 2017)

(1) For those candidates who fail in a subject head or are eligible for appearing at the repeat examination, A Supplementary End-Semester Examination of odd semester will be conducted before the regular End semester examination of the even semester.
(2) A Supplementary End-Semester Examination of even semester will be conducted before the regular End semester examination of the odd semester.
(3) The marks obtained by candidates in the in-semester examinations (continuous assessment and mid-term examination) will be carried forward in such cases.
(4) Grading the performance in the Supplementary Examination: The grades will be assigned as per 3.5 and 3.6 above
(5) Revaluation of end-semester and Supplementary examination: Candidate's performance in these examinations will be announced on web portal of the University and after one month of such announcement the grade statements will be sent to the concerned Department for distribution to the students. Those who want to get the photocopy of their answer books are required to pay the requisite fee. Revaluation of these examinations shall be allowed. Those who would like to have the revaluation of their answer books are required to pay a requisite fee.
(6) Remedial examination the candidate will have an option of appearing for an Online Remedial Examination, after the declaration of each End-semester examination results, to pass the subject head where he/she has failed in regular end-semester examination of the semester. The candidate will get only EE grade if he clears the remedial examination and can continue with the next semester. However, for improving his grade in the same subject head, the candidate will have an option of appearing in the 'same' subject in the Supplementary Examination before the regular end-Semester examination.

8. Passing of a Semester Examination

A candidate shall be declared as 'PASSED' any semester examination if he/she has

(a) Cleared all heads of passing by securing grades EE or higher in all the heads;
(b) Passed all the heads of passing such as project, seminar, training, etc as per the rules;
(c) Satisfactorily completed all the mandatory requirements of the course;
(d) paid all the University/college dues;
(e) No case of indiscipline pending against him/her.

9. Eligibility for the Award of a Degree

A candidate shall be declared eligible for the award of a degree, if he/she has cleared all the semester examinations as given in (6) above.

10. Award of Degree of Honors'

Major Degree

The concept of Major and Minors at B.Tech level is introduced , to enhance learning skills of students, acquisition of additional knowledge in domains other than the discipline being pursued by the student, to make the students better employable with additional knowledge and encourage students to pursue cross-discipline research.

A. Eligibility Criteria for Majors

i. The Student should have Minimum CGPA of 7.5 up to 4th Semester
ii. Student willing to opt for majors has to register at the beginning of 5th Semester
iii. The Student has to complete 5 additional advanced courses from the same discipline specified in the curriculum. These five courses should be of 4 credits each amounting to 20 credits. The students should complete these credits before the end of last semester.
iv. Student may opt for the courses from NPTEL/ SWAYAM platform. (if the credits of NPTEL/ SWAYAM courses do not match with the existing subject proper scaling will be done).

Student complying with these criteria will be awarded B.Tech (Honours) Degree.

B. Eligibility Criteria for Minors

i. The Student should have Minimum CGPA of 7.5 up to 4th Semester
ii. Student willing to opt for minors has to register at the beginning of 5th Semester
iii. The Student has to complete 5 additional courses from other discipline of their interest, which are specified in the respective discipline. These five courses should be of 4 credits each amounting to 20 credits.
iv. Student may opt for the courses from NPTEL/ SWAYAM platform. (if the credits of NPTEL/ SWAYAM courses do not match with the existing subject proper scaling will be done)

Student complying with these criteria will be awarded with B. Tech Degree in ------- Engineering with Minor in ------ --Engineering. (For e.g.: B. Tech in Civil Engineering with Minor in Computer Engineering)