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

Padmabhooshan Vasantraodada Patil Institute of Technology, Budhgaon (Sangli)

Student Information Manual (SIM) 2023-24 SEM-I

First Year B. Tech.

Dr. V. P. Shetkari Shikshan Mandal's

Padmabhooshan Vasantraodada Patil Institute of Technology, Budhgaon– 416304

STUDENT'S INFORMATION MANUAL
(Academic Year: 2023-24)
Semester-I
Teaching and
Evaluation Scheme
for
First Year B. Tech.
Group A

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 intermingle 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.
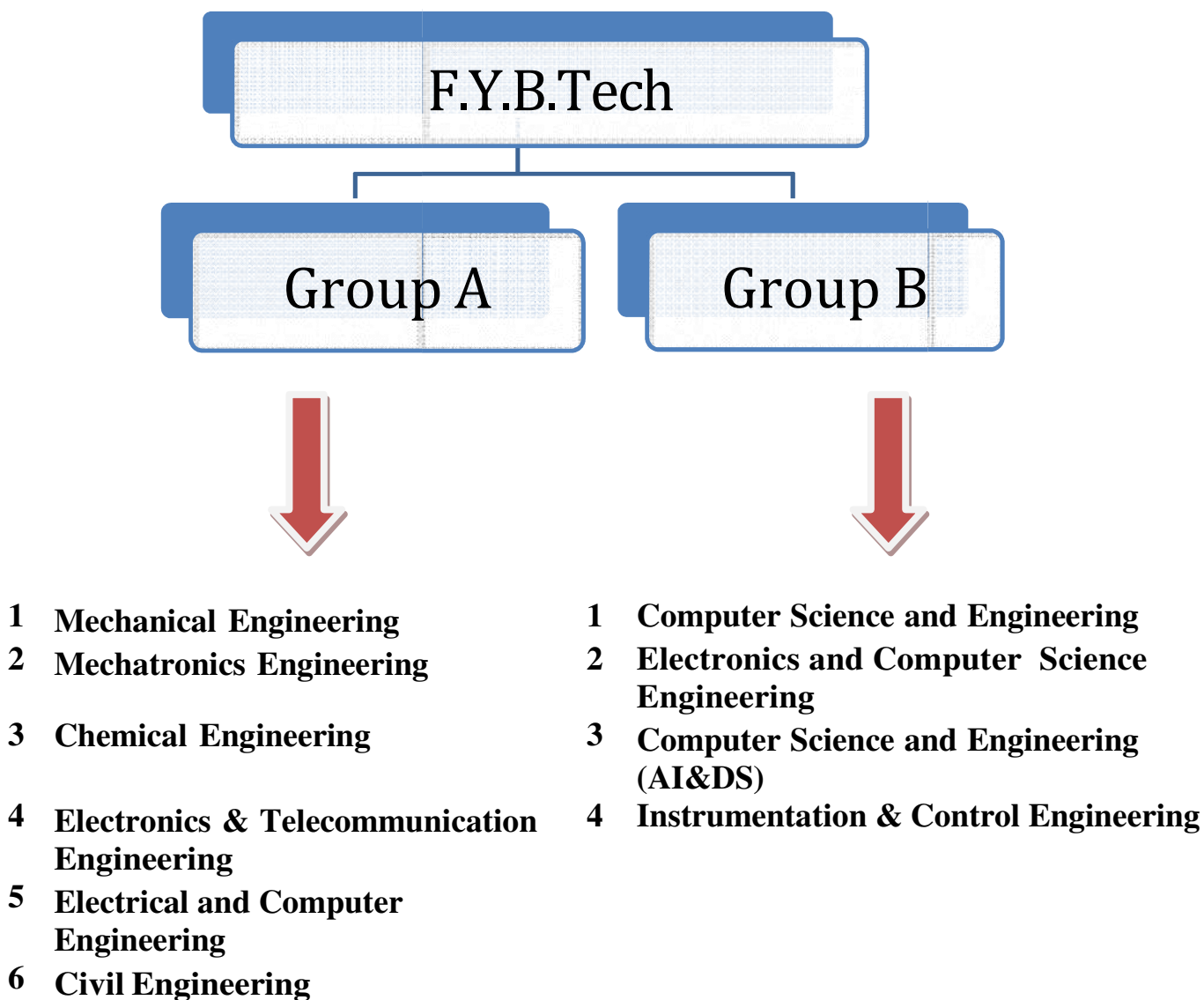3. To inculcate habbit of innovation and entrepreneurship.

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 C F FIRST YEAR ENGINEERING

(With effective from Academic Year 2023-24)

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                    F.Y.B.Tech
              ┌──────────┴──────────┐
          Group A                Group B
             ↓                      ↓
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Group A

1 **Mechanical Engineering**
2 **Mechatronics Engineering**
3 **Chemical Engineering**
4 **Electronics & Telecommunication Engineering**
5 **Electrical and Computer Engineering**
6 **Civil Engineering**

Group B

1 **Computer Science and Engineering**
2 **Electronics and Computer Science Engineering**
3 **Computer Science and Engineering (AI&DS)**
4 **Instrumentation & Control 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.
- ❖ Always carrying Identity Card and following the College Dress Code.
- ❖ 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 - A Semester- I

Mechanical / Mechatronics / Chemical / Civil/ Electrical and Comp. Science/ Electronics &Telecommunication 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 Physics	3	1	-	20	20	60	100	4
3	BTES103	Engineering Graphics	2	-	-	20	20	60	100	2
4	BTHM104	Communication Skills	2	-	-	20	20	60	100	2
5	BTES105	Energy and Environment Engineering	2	-	-	20	20	60	100	2
6	BTES106	Basic Civil and Mechanical Engineering	2	-	-	50	-	-	50	Audit
7	BTBS107L	Engineering Physics Laboratory	-	-	2	60	-	40	100	1
8	BTES108L	Engineering Graphics Laboratory	-	-	4	60	-	40	100	2
10	BTHM109L	Communication Skills Laboratory	-	-	2	60	-	40	100	1
		Total	**14**	**2**	**8**	**330**	**100**	**420**	**850**	**18**

COURSE CO-ORDINATOR

Sr. No.	Course	Corse Code	Course Coordinator	Email id	Contact No.
1	Engineering Mathematics-I	**BS101**	Mrs. S. P. Mandale	ruyadav.ge@pvpitsangli.edu.in	7776074138
2	Engineering Physics	**BS102**	Dr. S. L. Patil	slpatil.ge@pvpitsangli.edu.in	9423269875
3	Engineering Graphics	**BE103**	Mr. S. B. Khandagale	sbkhandagale@pvpitsangli.edu.in	7798934522
4	Communication Skill	**HM104**	Mr. S. E. Narwade	senarwade.ge@pvpitsangli.edu.in	9527057048
5	Energy and Environmental Engineering	**ES105**	Mr. A. J. Pawar	ajpawar@pvpitsangli.edu.in	7769033396
6	Basic Civil and Mechanical Engineering	**ES106**	Mr. M. S. Kakmare	mskakamare.civil@pvpitsangli.edu.in	9860681768

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	Mr. A. A. Shaikh	Physics	aashaikh.ge@pvpitsangli.edu.in	9623819950
02	II	Mrs. S. S. Patil	CSE	sapnasajane@gmail.com	8788584742
03	III	Mr. S. E. Narwade	Communication Skill	senarwade.ge@pvpitsangli.edu.in	9527057048
04	IV	Ms. A. K. Patil	Mathematics	akpatil.ge@pvpitsangli.edu.in	9623653978
05	V	Mrs. A. V. Patil	Mathematics	avpatil.ge@pvpitsangli.edu.in	9561212878
06	VI	Ms. P. B. Patil	Chemistry	pbpatil.ge@pvpitsangli.edu.in	9518599062
07	VII	Mr. R. U. Yadav	Mathematics	ruyadav.ge@pvpitsangli.edu.in	8668386745

COURSE TEACHERS

SEM-I

Division/ Class Course	I	III	V
Engineering Maths-I	Ms. S. S. Kadam	Mrs. S. P. Mandale	Mrs. A. V. Patil
Communication Skills	Mr. S. E. Narwade	Mr. S. E. Narwade	Mr. A. K. Chavan
Engineering Physics	Mr. A. A. Shaikh	Dr. S. L. Patil	Dr. S. L. Patil
Engineering Graphics	Mrs. A. P. Lad	Mr. C. D. Patil	Mr. S. B. Khndagale
Basic Civil and Mechanical Engg.	Mr. M. S. Kakmare	Mr. M. S. Kakmare	Mr. M. S. Kakmare
Energy and Environment Engg.	Mr. A. J. Pawar	Mr. A. J. Pawar	Mr. P. V. Kadam

ACADEMIC CALENDAR 2023-24 SEM-I

Dr V P S S M's
Padmabhooshan Vasantraodada Patil Institute of Technology, Budhgaon (Sangli) First Year Engineering Department
Academic Calendar 2023-24
SEM I

August 2023 — Academic Days: 18

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			

Induction Program :- 8th -26st August 2023
Independence Day :- 15th August 2023
Parsi New Year :- 16th August 2023
Commencement of classes:-28th August 2023
List of non-Reported students :- 31st August 2023

September 2023 — Academic Days: 22

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	

Teachers Day :- 5th September 2023
Foundation Day :- 12th September 2023
Engineer's Day :- 15th September 2023
Vishveshwarya Knowledge Series :- 12th -14th September 2023
Ganesh Chaturthi :- 19th September 2023
Eid-E- Milad:- 28th September 2023
CA1 Evaluation: - 27th -30th September 2023
1st Defaulter students list :- 30th September 2023

October 2023 — Academic Days: 22

MON	TUE	WED	THUR	FRI	SAT	SUN
30	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

Mahatma Gandhi Jayanthi :- 2nd October 2023
Mid Semester Exam:-9th October -11th October2023
Dusshera :- 24th October 2023
Late Vishnuanna Patil Jayanti :- 4th October 2023
Late Madanbhau Patil Punyatithi :- 16th October 2023
Display of Mid Semester Marks :- 18th October -20th October2023
Parents Meeting :- 28th October 2023
2nd Defaulter students list :- 31st October 2023

November 2023 — 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			

Diwali :- 12th -14th November 2023
Padm. Vasantrao Patil Jayanti:- 13th November 2023
CA2 Evaluation: - 20th -22th November 2023
Guru Nanak Jayanti :- 27th November 2023
End of Classes :- 25th November 2023
Practical Exam :- 28th-30th November
3rd Defaulter students list :- 30th November2023

December 2023 — Academic Days: 0

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

End Semester Examination :- 1st December 2023 onwards

Every Thursday and Wednesday Guest Lecture Series

| SIP | Holiday | Exam |

Dr. Anushka A.Patil
HoD, First Year Engineering

Dr. K. K. Pandyaji
Dean Academic

Dr. B. S. Patil
I/C Principal

TIME TABLE

Dr. Vasantraodada Patil Shtekari Shikshan Mandal's

Padmabhooshan Vasantraodada Patil Institute Of Technology, Sangli (Budhgaon).
FIRST YEAR ENGINEERING DEPARTMENT (F. Y. B. Tech)
TIMETABLE 2023-24 SEM-I

With Effect From 28/08/2023

Class:- FE-I   Branch:- Mechanical + Chemical+ Mechatronics   PHYSICS Group   CL-03

SrN	TIME IN HRS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	10:00 TO 11:00	HM104-SEN	A1- BS107L A2- ES108L A3- HM109L	A1- HM109L A2-102(T) /101(T) A3- ES108L	ES106-APL	BS102-AAS	LVH-Library Visit Hour
2	11:00 TO 12:00	ES105-AJP			BS102-AAS	BS101-SSK	IITST-IIT Spoken Tutorial
	12:00 TO 12.45	LONG		RECESS			
3	12.45 TO 13:45	BS101-SSK	A1- ES108L A2- HM109L A3-102(T) /101(T)	BS102-AAS	ES106-MSK	A1- ES108L A2- BS107L A3- ES108L	(T)-Tutorial
4	13:45 TO 14:45	ES103-APL		ES103- APL	ES105- AJP		# - Alternate
	14:45 TO 15:00	SHORT		RECESS			*- Extra
5	15:00 TO 16:00	A1- 102(T) /101(T) A2- ES108L A3- BS107L	*ES103- APL	HM104-SEN	# TPO Session / Guest Lec. / M-M / Counselor Int.	BS101-SSK	# M-M / Counselor Int. Mentee –Mentor or Counselor Interaction
6	16:00 TO 17:00		*BS101-SSK	LVH/IITST		LVH/IITST	

SSK-/S S Kadam   AAS-A A Shaikh   APL- A P Lad   SEN- S E Narwade AJP-A J Pawar   MSK-M S Kakamare

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	HM104	Communication Skills	7	BS107L	Engineering Physics Laboratory
2	BS102	Engineering Physics	5	ES105	Energy and Environment Engineering	8	ES108L	Engineering Graphics Laboratory
3	ES103	Engineering Graphics	6	ES106	Basic Civil & Mechanical Engineering	9	HM109L	Communication Skills Laboratory

(Dr. Sanjay L. Patil)
Time-Table Coordinator
(F. Y. B. Tech.)

(Dr. Anushka A. Patil)
HOD
(F. Y. B. Tech.)

(Dr. K. K. Pandyaji)
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FIRST YEAR ENGINEERING DEPARTMENT (F. Y. B. Tech)
TIMETABLE 2023-24 SEM-I

With Effect From 28/08/2023

Class: FE-III   Branch: Elect. & Telecomm. Engg.   PHYSICS Group   CL-04

SrN	TIME IN HRS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	10:00 TO 11:00	ES103-CDP	ES105-AJP	BS101-SPM	C1- HM109L C2-102(T)/101(T) C3- ES108L	HM104-SEN	LVH- Library Visit Hour
2	11:00 TO 12:00	BS101-SPM	ES106-MSK	BS102-SLP		ES105-AJP	IITST- IIT Spoken Tutorial
	12:00 TO 12.45			LONG	RECESS		*-Extra
3	12.45 TO 13:45	C1- ES108L C2- BS107L C3- HM109L	ES103- CDP	C1-102(T)/101(T) C2- ES108L C3- BS107L	BS102-SLP	BS102-SLP	(T)-Tutorial
4	13:45 TO 14:45		BS101-SPM		*BS101-SPM	HM104-SEN	# - Alternate
	14:45 TO 15:00			SHORT	RECESS		
5	15:00 TO 16:00	ES106-CDP	C1- BS107L C2- HM109L C3- ES108L	*ES103-CDP	# TPO Session / Guest Lec. / M-M / Counselor Int.	C1- ES108L C2- ES108L C3-102(T)/101(T)	# M-M / Counselor Int.- Mentee –Mentor or Counselor Interaction
6	16:00 TO 17:00	LVH/IITST		LVH/IITST			

SPM-S P Mandale   SLP- S L Patil   CDP-C D Patil   SEN- S E Narwade   AJP-A J Pawar   MSK-M S Kakamare

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	HM104	Communication Skills	7	BS107L	Engineering Physics Laboratory
2	BS102	Engineering Physics	5	ES105	Energy and Environment Engineering	8	ES108L	Engineering Graphics Laboratory
3	ES103	Engineering Graphics	6	ES106	Basic Civil & Mechanical Engineering	9	HM109L	Communication Skills Laboratory

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Padmabhooshan Vasantraodada Patil Institute Of Technology, Sangli (Budhgaon).
FIRST YEAR ENGINEERING DEPARTMENT (F. Y. B. Tech)
TIMETABLE 2023-24 SEM-I

With Effect From 28/08/2023

Class:- FE-V Branch: Electrical & Computer +Civil Engg. PHYSICS Group CL-03/04/05

SrN	TIME IN HRS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	10:00 TO 11:00	HM104-AKC (CL-05)	BS101-AVP (CL-03)	ES103- SBK (CL-05)	ES105-PVK (CL-05)	E1- ES108L E2- ES108L E3- BS107L	LVH- Library Visit Hour
2	11:00 TO 12:00	BS101-AVP (CL-05)	BS102-SLP (CL-03)	BS101-AVP (CL-05)	BS102-SLP (CL-05)		IITST- IIT Spoken Tutorial
	12:00 TO 12.45		LONG	RECESS			*-Extra
3	12.45 TO 13:45	BS102-SLP (CL-04)	E1-102(T)/101(T) E2- BS107L E3- ES108L	ES106- SBK (CL-04)	E1- BS107L E2- HM109L E3-102(T) / 101(T)	ES105-PVK (CL-05)	# - Alternate
4	13:45 TO 14:45	ES103-SBK (CL-04)		ES106-MSK (CL-04)		HM104-AKC (CL-05)	(T)-Tutorial
	14:45 TO 15:00		SHORT	RECESS			
5	15:00 TO 16:00	E1- HM109L E2-102(T)/101(T) E3- ES108L	*ES103-SBK (CL-04)	E1- ES108L E2- ES108L E3- HM109L	# TPO Session / Guest Lec. / M-M / Counselor Int.	*BS101-AVP (CL-04)	# M-M / Counselor Int.Mentee –Mentor or Counselor Interaction
6	16:00 TO 17:00		LVH/IITST			LVH/IITST	

AVP- A V Patil   SLP-S L Patil   SBK- S B Khandagale   AKC-A K Chavan   PVK- P V Kadam   MSK-M S Kakamare

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	HM104	Communication Skills	7	BS107L	Engineering Physics Laboratory
2	BS102	Engineering Physics	5	ES105	Energy and Environment Engineering	8	ES108L	Engineering Graphics Laboratory
3	ES103	Engineering Graphics	6	ES106	Basic Civil & Mechanical Engineering	9	HM109L	Communication Skills Laboratory

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(Dr. K. K. Pandyaji)
Academic Dean

(Dr. B. S. Patil)
I/C Principal

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, advise, 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: 9823787214)

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, Vasantostav and Sports activity benefits the student toparticipate 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 vari us 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 house facility is available for visiting parents. The hostels have all necessary facilities such 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 PVPIT guide 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
- ❖ Motivate them 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 skill through 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	**Evaluation Scheme**
Lecture: 3 hrs/ week	Continuous Assessment:- 20 Marks
Tutorial: 1 hr/ week	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 systemof 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. Explain the concept of partial derivatives and calculate the Jacobian function and its properties and their applications to engineering problems.
3. Evaluate multiple integrals and their applications to area and volume by identifying and tracing curves in Cartesian, Polar and parametric coordinate systems.

Unit No.	Details of Content	Hrs
1.	**Linear Algebra- Matrices** Inverse of a matrix by Gauss-Jordan method; Rank of a matrix; Normal form 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) andits applications.	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; Change of variables.	6
3.	**Applications of Partial differentiation** Jacobians - properties; Taylor"s and Maclaurin"s theorems (without proofs) for functions of two variables; 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. Reduction formulae for $\int_0^{\frac{\pi}{2}} \sin^n x\, dx$, $\int_0^{\frac{\pi}{2}} \cos^n x\, dx$, $\int_0^{\frac{\pi}{2}} \sin^n x \cos^n x\, dx$	6

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; 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

End Semester Examination – Winter 2022

Course: B. Tech. (Common to all Branches)　　　　　Semester : I

Subject Code & Name: Engineering Mathematics – I (BTBS 101)

Max Marks: 60　　　　　Date:　　　　　Duration: 3 Hrs.

Instructions to the Students:
1. All the questions are compulsory.
2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.
3. Use of non-programmable scientific calculators is allowed.
4. Assume suitable data wherever necessary and mention it clearly.

			(Level/CO)	Marks
Q. 1	Solve Any Three of the following.			12
A)	Reduce to the Normal form and find the rank of the given matrix. $$A = \begin{bmatrix} 1 & -2 & 0 & 1 \\ 2 & -1 & 1 & 0 \\ 3 & -3 & 1 & 1 \\ -1 & -1 & -1 & 1 \end{bmatrix}$$		Understand/ CO1	4
B)	Test the consistency and solve: $3x+y+2z=3, 2x-3y-z=-3, x+2y+z=4$		Understand/ CO1	4
C)	Find the eigen value & eigen vector for least positive eigen value of the matrix: $$A = \begin{bmatrix} 1 & 0 & -1 \\ 1 & 2 & 1 \\ 2 & 2 & 3 \end{bmatrix}$$		Understand/ CO1	4
D)	Verify Cayley Hamilton theorem for the matrix $A = \begin{bmatrix} 1 & 0 & 2 \\ 0 & 2 & 1 \\ 2 & 0 & 3 \end{bmatrix}$		Understand/ CO1	4
Q.2	Solve Any Three of the following:			12
A)	If $u = \log(x^2 + y^2) + \tan^{-1}\left(\dfrac{y}{x}\right)$ then find the value of $\dfrac{\partial^2 u}{\partial x^2} + \dfrac{\partial^2 u}{\partial y^2}$		Understand/ CO2	4
B)	If $v = \log(x^2 + y^2 + z^2)$, prove that $(x^2 + y^2 + z^2)\left(\dfrac{\partial^2 v}{\partial x^2} + \dfrac{\partial^2 v}{\partial y^2} + \dfrac{\partial^2 v}{\partial z^2}\right) = 2$		Understand/ CO2	4
C)	$u = \sin^{-1}\left(x^2 + y^2\right)^{\frac{1}{5}}$ then find the value of $x^2 \dfrac{\partial^2 u}{\partial x^2} + 2xy \dfrac{\partial^2 u}{\partial x \partial y} + y^2 \dfrac{\partial^2 u}{\partial y^2}$		Understand/ CO2	4
D)	Find $\dfrac{du}{dt}$ when $u = xy^2 + x^2 y$, $x = at^2$, $y = 2at$		Understand/ CO2	
Q. 3	Solve Any Three of the following:			12
A)	If $u = x^2 - 2y^2$, $v = 2x^2 - y^2$ Where $x = r\cos\theta$, $y = r\sin\theta$ then show		Understand/ CO3	4

	that $\dfrac{\partial(u,v)}{\partial(r,\theta)} = 6r^3 \sin 2\theta$			
B)	Show that $JJ' = 1$ if $x = u(1-v)$, $y = uv$		Understand/ CO3	4
C)	Discuss the maxima and minima of the function $x^2 + y^2 + 6x + 12$		Understand/ CO3	4
D)	Expand $f(x,y) = x^2y + 3y - 2$ in the powers of $(x-1)$ and $(y+2)$ using Taylor's theorem		Understand/ CO3	4
Q.4	Solve Any Three of the following:			12
A)	Prove that $\displaystyle\int_0^\infty \dfrac{t^4}{(1+t^2)^3}\,dt = \dfrac{3\pi}{16}$		Understand/ CO4	4
B)	Trace the Curve $a^2y^2 = x^2\left(a^2 - x^2\right)$		Understand/ CO4	4
C)	Trace the Curve $x = a(t - \sin t)$, $y = a(1 - \cos t)$		Understand/ CO4	4
D)	Trace the Curve $r = a \cos 2\theta$		Understand/ CO4	4
Q.5	Solve the following:			12
A)	Evaluate $\displaystyle\int_0^1 \int_0^y xy\,dxdy$		Understand/ CO5	4
B)	Change the order of integration $\displaystyle\int_0^a \int_0^{\sqrt{a^2-x^2}} f(x,y)\,dydx$		Understand/ CO5	4
C)	Find the volume bounded by paraboloid $x^2 + y^2 = az$, the cylinder $x^2 + y^2 = 2ay$ and the plane $z = 0$		Understand/ CO5	4
	*** End ***			

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Engineering Physics (4 Credits)
BTBS102

Teaching Scheme	**Evaluation Scheme**
Lecture: 3 hrs/ week	Continuous Assessment:- 20 Marks
Tutorial: 1 hr/ week	Mid Term Test:-20 Marks
	End Semester Exam:-60 Marks

Course Objectives:
1. To provide a firm grounding in the basic physics principles and concept to resolve many Engineering and technological problems.
2. To understand and study the Physics principles behind the developments of Engineering materials.

Course Outcomes: Students will be able to :
1. Define and explain basic laws, Principles and ideas of physics related to Engineering curriculum.
2. Apply basic principles of oscillation, Ultrasonics, Optics laser, fiber optics, nuclear physics and quantum mechanics to solve engineering problems.
3. Understand crystal structure, magnetic and super conducting properties of materials.

Unit No.	Details of Content	Hrs
1.	**Unit I: Oscillation and Ultrasonic's** Free oscillation, damped oscillation, Forced oscillation and Resonance, differential wave equation, Ultrasonic waves, production of ultrasonics (Piezoelectric effect, Magnetostriction effect) and its application.	7
2.	**Unit II: Optics, Fibre Optics and Laser:** Interference of light in thin film, wedge shaped film, Newton"s rings, polarization of light, methods for production of polarized light(Reflection, Refraction& Double refraction), Huygen"s theory of double refraction, Principle and structure of optical fibre, acceptance angle, acceptance cone, numerical aperture. Principle of laser, Types of laser – Ruby and He-Ne laser and their applications.	7
3.	**Unit III: Electron Optics, Nuclear and Quantum Mechanics:** G. M counter, Heisenberg"s uncertainty principle, Schrödinger"s time dependent and time independent wave equations, physical significance of wave function.	7

4.	**Unit IV: Crystal Structure, X-rays and Electrodynamics** Unit cell, Bravais lattice, cubic system, number of atoms per unit cell, coordination number, atomic radius, packing density, relation between lattice constant and density, lattice planes and Miller indices, X-ray diffraction, Line and Continuous Spectrum of X-ray, Introduction of Maxwell equations (no derivation).	7
5.	**Unit V: Magnetic, Superconducting and Semiconducting materials** Types of magnetic materials (Diamagnetic, Paramagnetic and Ferromagnetic), B-H curve, Superconductivity, types of superconductors, Meissner effect, properties and applications of superconductor, Band theory of solids, conductivity of semiconductors, Hall effect.	7

Text books
1. Engineering Physics M.N. Avadhanulu and P.G. Kshirsagar. S.Chand and Company LTD.
2. Engineering Physics – Dr. L. N. Singh. Synergy Knowledgeware-Mumbai.
3. Engineering Physics - R.K. Gaur and S. L. Gupta. DhanpatRai Publications Pvt. Ltd.- New Delhi.
4. Fundamental of Physics - Halliday and Resnik. Willey Eastern Limited.

Reference books
1. Introduction to Electrodynamics –David R. Griffiths
2. Concept of Modern Physics – Arthur Beizer. Tata McGraw-Hill Publishing Company Limited.
3. Optics – Ajay Ghatak. Mac Graw Hill Education (India) Pvt. Ltd.
4. Science of Engineering Materials- C.M. Srivastava and C. Srinivasan. New Age International Pvt. Ltd.
5. Solid State Physics – A.J. Dekker. McMillan India –Limited.
6. The Feynman Lectures on Physics Vol. I, II, III.
7. Introduction to solid state physics – Charles Kittel. John Willey and Sons

Engineering Physics Laboratory
BTBS107L

Practical Scheme
Lecture: 2 Hrs/ Batch

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

At least 10 experiments should be performed from the following list.

Sr. No.	Practical
1.	Newton's rings - Determination of radius of curvature of Plano convex lens / wavelength of light
2.	Wedge Shaped film - Determination of thickness of thin wire
3.	Half shade Polarimeter - Determination of specific rotation of optically active material
4.	Laser - Determination of wavelength of He-Ne laser light
5.	Magnetron Tube - Determination of 'e/m' of electron
6.	G.M. Counter - Determination of operating voltage of G.M. tube
7.	Crystal Plane – Study of planes with the help of models related Miller Indices
8.	Hall Effect - Determination of Hall Coefficient
9.	Four Probe Method - Determination of resistivity of semiconductor
10.	Measurement of Band gap energy of Semiconductors
11.	Study of I-V characteristics of P-N junction diode
12.	Experiment on fibre optics
13.	Ultrasonics Interferometer
14.	B-H Curve Experiment
15.	Susceptibility measurement experiment

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular End Semester Examination – Summer 2023

Course: B. Tech.   Branch: All   Semester: II

Subject Code & Name: BTBS202P   (Engineering Physics)

Max Marks: 60   Date:14/07/2023   Duration: 3 Hr.

Instructions to the Students:
1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		
A)	Define Damped Vibrations. Set up differential equation for damped vibrations.	(CO1) (Remember & Understand)	6
B)	Explain the construction, working for production of ultrasonic waves using Piezoelectric oscillator.	(CO1) (Understand)	6
C)	State any two applications of ultrasonic waves. Calculate the length of iron rod which can be used to produce ultrasonic waves of 20 KHz. Density of iron is 7.23×10^3 kg/m^3, Young's modulus is 11.6×10^{10} N/m^2	(CO1) (Remember & Understand)	6
Q.2	**Solve Any Two of the following.**		
A)	In Newton's rings, derive an expression for diameter of nth bright ring and dark ring.	(CO2) (Understand)	6
B)	Explain the construction & working of Ruby laser.	(CO2) (Understand)	6
C)	Explain the structure of optical fiber with suitable diagram. Calculate the numerical aperture of a optical fiber with core index n_1=1.61 and cladding index n_2=1.55	(CO2) (Remember & Understand)	6
Q. 3	**Solve Any Two of the following.**		
A)	With neat diagram, explain the construction & working of Bainbridge mass spectrograph.	(CO3) (Understand)	6
B)	Write short note on Geiger Muller Counter.	(CO3) (Understand)	6
C)	State Heisenberg's Uncertainty Principle with formula.	(CO3)	6

If the uncertainty in position of an electron is 4×10^{-10} m, Calculate the uncertainty in its momentum. (h=6.62 $*10^{-34}$ J Sec)   (Understand)

Q.4   **Solve the following questions.**

A)   Calculate Atomic Packing Fraction for SC, BCC and FCC lattices.   (CO4) (Understand)   6

B)   Explain Continuous X-ray spectra.

Calculate the wavelength of X-rays when a potential difference of 30 KV is applied between filament and anode.   (CO4) (Understand)   6

Q.5   **Solve Any Two of the following.**

A)   Explain Diamagnetic, Paramagnetic and Ferromagnetic materials with examples and diagram.   (Understand)   6

B)   Distinguish between Type I and Type II superconductors.   (Understand)   6

C)   Derive an expression for conductivity of Intrinsic and extrinsic (P Type & N Type) Semiconductors.   (Understand)   6

*** End ***

Engineering Graphics (2 Credits)
BTES203

Teaching Scheme
Lecture: 2 hrs/ week

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

Course Objectives:
1. To make use of drawing instruments effectively for drawing and dimensioning.
2. To understand the conventions and methods of engineering drawing.
3. To know the concept of projections of points, lines, planes, solids and section of solids.
4. To understand the Construction isometric and orthographic views of given objects.

Course Outcomes: Students will be able to :
1. Understand basic concepts of engineering drawing and apply the concept of orthographics projection to solve problems.
2. Understand and apply concept of projection to solve problems on projection of point & Line.
3. Understand and apply concept of projection to solve problems on projection of plane, Solid and costruct the isometric view. Construct isometric and orthographic views of given objects.

Unit No.	Details of Content	Hrs
1.	**Drawing standards and geometrical construction:** Drawing standard SP: 46, Type of lines, lettering, dimensioning, scaling conventions. Geometrical construction: Dividing a given straight line into any number of equal parts, bisecting a given angle, drawing a regular polygon given one side, special methods of constructing a pentagon and a hexagon.	4
2.	**Orthographic Projections and Projections of Points:** Introduction to orthographic projection, drawing of orthographic views of objects from their isometric views. Projection of points lying in four quadrants.	4
3.	**Projections of Straight Lines and Planes and their Traces :** Projections of lines parallel and perpendicular to one or both planes, projections of lines inclined to one or both planes. Traces oflines. Projections of planes parallel and perpendicular to one or both planes, projection of planes inclined to one or both planes.	4
4.	**Projections of Solids** Types of solids, projections of solids with axis perpendicular and parallel to HP and VP, solids with axis inclined to one or both the planes. Projections of spheres touching each other.	4

| 5.	**Sectioning of Solids, Isometric Projections** Sectioning of solids: Section planes perpendicular to one plane and parallel or inclined to other plane. Isometric projections: Isometric scale, drawing of isometric projections from given orthographic views.	4

Reference/ Text Books
1. N. D. Bhatt, *Engineering Drawing*, Charotar Publishing House, 46th Edition, 2003
2. K. V. Nataraajan, *A text book of Engineering Graphic*, Dhanalakshmi Publishers, Chennai, 2006
3. K. Venugopal and V. Prabhu Raja, *Engineering Graphics*, New Age International (P) Ltd, 2008
4. Dhananjay A. Jolhe, *Engineering Drawing with an Introduction to Autocad*, McGraw Hill Education, 2017

Engineering Graphics Laboratory **BTES108L**	
Practical Scheme Lecture: 4 Hrs/ Batch	**Evaluation Scheme** Continuous Assessment:- 60 Marks External Exam:-40 Marks

List of Practical

| Sr. No.	Name of Experiment
1.	Lines, lettering and dimensioning.
2.	Geometrical Constructions.
3.	Orthographic projections.
4.	Projections of points and straight lines
5.	Projections of planes.
6.	Projections of solids.
7.	Section of solids.
8.	Isometric Projections.

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Summer Examination – 2023

Course: B. Tech.   Branch :First Year All Branches   Semester :II

Subject Code & Name: BTES103G Engineering Graphics

Max Marks: 60   Date: 17/07/2023   Duration: 3 Hrs.

Instructions to the Students:
1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

			(Level/CO)	Marks
Q. 1	Solve <u>Any Two</u> of the following.			12
A)	Construct a regular heptagon of 30 mm side by General method.		Remember	6
B)	Inscribe a regular pentagon in a circle of 70 mm diameter.		Remember	6
C)	Explain the two systems of placing dimensions with the help of sketches.		Understand	6
Q.2	Solve <u>Any One</u> of the following.			12
A)	Draw the following views of the object (in X – direction) shown below, by using first angle projection method.		Apply	
	(a) Front View			6
	(b) Top View			6
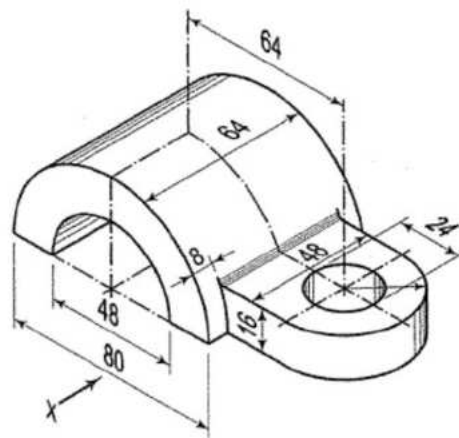
B)	Draw the following views of the object (in X – direction) shown below, by using first angle projection method.	Apply	
	(a) Front View		6
	(b) Right Hand Side View		6

First Year B. Tech Engineering
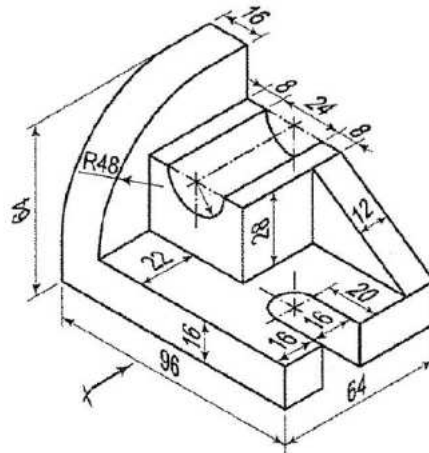
Q. 3 Solve **Any One** of the following.   12

A) The front view of a line AB makes an angle of 30^0 with xy. The HT of the   Apply   12
line is 45 mm in front of the VP, while its VT is 30 mm below the HP. The
end A is 10 mm above the HP and the end B is 100 mm in front of the VP.
Draw the projections of the line and determine (i) its true length, and (ii) its
inclinations with the HP and the VP.

B) A regular hexagon of 40 mm side has a corner in the HP. Its surface is   Apply   12
inclined at 45^0 to the HP and the top view of the diagonal through the corner
which is in the HP makes an angle of 60^0 with the VP. Draw its projections.

Q.4 Solve **Any One** of the following.   12

A) A cube of 50 mm long edges is resting on one of its corners on the HP   Apply   12
such that one of the body diagonals is parallel to both the HP and the VP.
Draw its three views.

B) A cone, base diameter 50 mm and axis length 60 mm is resting on the HP on   Apply   12
a point of its base circle in such a way that the apex is 50 mm above the HP.
Draw the projections of the cone when the top view of the axis is making
45^0 to the VP.

**Q. 5** Solve **Any One** of the following.   12

A) A hexagonal prism, side of the base 30 mm and axis 70 mm long is resting   Apply   12
on one of its bases on the HP with the edge of base perpendicular to the VP.
It is cut by section plane inclined to the HP such that the true shape of the

section is a trapezium of maximum size. Draw the sectional top view and the true shape of the section. What will be the inclination of the cutting plane with the HP?

B) Draw the isometric view of the following object having FV and TV drawn   Apply   12
by first angle projection method.

F. V.

T. V.
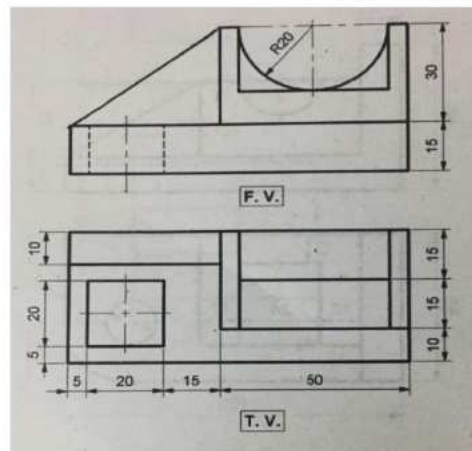
*** End ***

Communication Skills (2 Credits) BTHM104	
Teaching Scheme	**Evaluation Scheme**
Lecture: 2 Hrs/ week	Continuous Assessment:- 20 Marks
Mid Term Test:- 20 Marks	End Semester Exam:- 60 Marks

Course Objectives:
1. To know and apply speaking and writing skills in professional as well as social situations
2. To Overcome Mother Tongue Influence and demonstrate neutral accent while exercising English
3. To know and apply communication skills for Presentations, Group Discussion and interpersonal interactions.
4. To know and apply grammar correctly during Speaking and Writing situations especially in context with Presentations, Public Speaking, Report writing and Business Correspondence

Course Outcomes: Students will be able to:
1. Demonstrate LSRW skills and develop communicative competence in professional presentations.
2. Apply phonetics in spoken English.
3. Make use of grammar correctly with accepted tone and style in technical and business communication.

Unit No.	Details of Content	Hrs
1.	**Communication and Communication Processes** Introduction to Communication, Forms and functions of Communication, Barriers to Communication and overcoming them, Verbal and Non-verbal Communication Reading: Introduction to Reading, Barriers to Reading, Types of Reading: Skimming, Scanning, Fast Reading, Strategies for Reading, Comprehension. Listening : Importance of Listening, Types of Listening, Barriers to Listening.	4
2.	**Verbal and Non-verbal Communication** Use of Language in Spoken Communication, Principles and Practice of Group Discussion, Public Speaking (Addressing Small Groups and Making Presentation), Interview Techniques, Appropriate Use of Non-verbal Communication, Presentation Skills, Extempore,Elocution.	4
3.	**Study of Sounds in English** Introduction to phonetics, Study of Speech Organs, Study of Phonemic Script, Articulation of Different Sounds in English.	2
4.	**English Grammar** Grammar: Forms of Tenses, Articles, Prepositions, Use of Auxiliaries and Modal Auxiliaries, Synonyms and Antonyms, Common Errors.	5

5.	**Writing Skills, Reading Skills and Listening Skills** Features of Good Language, Difference between Technical Style and Literary Style, Writing Emails, Formal and Informal English, Technical Reports: Report Writing: Format, Structure and Types Letter Writing: Types, Parts, Layouts, Letters and Applications, Use of Different Expressions and Style, Writing Job Application Letter and Resume.	4

Reference Books:

1) Sanjay Kumar, Pushp Lata, *Communication Skills*, Oxford University Press, 2016

2) Meenakshi Raman, Sangeeta Sharma, *Communication Skills*, Oxford University Press, 2017

3) Teri Kwal Gamble, Michael Gamble, *Communication Works*, Tata McGraw Hill Education,2010

4) Anderson, Kenneth. Joan Maclean and Tossny Lynch. Study Speaking: A Course in Spoken English for Academic Purposes. Cambridge: CUP, 2004.

5) Aswalthapa, K. *OrganisationalBehaviour*, Himalayan Publication, Mumbai (1991).

6) Atreya N and Guha, *Effective Credit Management*, MMC School of Management, Mumbai (1994).

7) Balan,K.R. and Rayudu C.S., *Effective Communication*, Beacon New Delhi (1996).

8) Bellare, Nirmala. *Reading Strategies*. Vols. 1 and 2. New Delhi. Oxford University Press, 1998.

9) Bhasker, W. W. S and Prabhu, N. S.: *English through Reading*, Vols. 1 and 2. Macmillan,1975

10) Black, Sam. *Practical Public Relations*, E.L.B.S. London (1972).

11) Blass, Laurie, Kathy Block and Hannah Friesan. *Creating Meaning*. Oxford: OUP, 2007.

12) Bovee Courtland L, and Thrill, John V. *Business Communication*, Today McGraw Hill, New York, Taxman Publication (1989).

Text book:

1) Mohd. Ashraf Rizvi, *Communication Skills for Engineers*, Tata McGraw Hill

Communication Skill Lab:

Atleast 10 experiments should be performed from the following list

1) How to introduce oneself?

2) Introduction to Phonemic symbols

3) Articulation of sounds in English with proper manner

4) Practice and exercises on articulation of sounds

5) Read Pronunciations/transcriptions from the dictionary

6) Practice and exercises on pronunciations of words

7) Introduction to stress and intonation

8) Rapid reading sessions

9) Know your friend

10) How to introduce yourself

11) Extempore

12) Group discussion

13) Participating in a debate

14) Presentation techniques

15) Interview techniques

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Regular Summer Examination – 2022-23

Course: B. Tech.   Branch :   Semester : II

Subject Code & Name:BTHM204, Communication Skills

Max Marks: 60   Date: Duration: 3 Hr.

Instructions to the Students:
1. All the questions are compulsory.
2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.
3. Assume suitable data wherever necessary and mention it clearly.

		(Level/CO)	Marks
Q. 1	Solve any TWO of the following:		12
A)	Explain the types/forms of communication.	Understand/1	6
B)	Discuss any three barriers to communication?	Understand/1	6
C)	Write a short note on importance of reading skills.	Understand/1	6
Q.2	Solve any TWO of the following:		12
A)	What are the principles of practicing Group Discussion (GD)?	Remember/3	6
B)	Write a detailed note on non-verbal communication.	Remember/1	6
C)	Discuss interview techniques.	Understand/3	6
Q. 3	Solve any TWO of the following:		12
A)	Write the spelling for the following transcriptions. i. /kəmˈpjuːtə(r)/ ii. /ɪɡˌzæmɪˈneɪʃn/ iii. /ˈjestədeɪ/	Remember/2	6
B)	Draw a diagram of Organs of Speech. Explain any three organs of speech.	**Apply/2**	6
C)	What is the role of phonetics in effective English communication?	Remember/2	6
Q.4	Solve any TWO of the following:		12
A)	I) Fill in the blanks with the appropriate article/s (a, an and the). i. Vinod wants to join _____university. ii. You are _____honest person. iii. Rahul is _____Mahendra Singh Dhoni of our college.	Apply/4	6

	II) Fill in the blanks with the appropriate preposition (from, since, up, between, on, under).
	
	   i. He has been writing _____ morning.
	   ii. Sudha sits _____ Saroj and Usman.
	   iii. What is the documentary _____ ?		

B)	I) Rewrite the sentences using the correct tense.
	
	   i. Simran _____(go) to her village last week. (Simple Past Tense)
	   ii. I _____(teach) this subject for ten years(Present Perfect Continuous Tense)
	   iii. He _____(open) the shop everyday (Simple Present Tense)
	
	II) Write the synonyms of the following words:
	
	   i. Abandon
	   ii. Illiterate
	   iii. Zenith
		Apply/4	6

C)	1) Write the antonyms of the following words:
	
	   i. Arrogant
	   ii. Ancient
	   iii. Virtue
	
	2) Correct the following sentences:
	
	   iv. He is my older brother.
	   v. My friend lives in abroad.
	   vi. I love travel.
		Apply/4	6

Q. 5	Solve any ONE of the following:		12
A)	1) Write a detailed report on an activity arranged by your college. (For example, Blood Donation Camp, Tree Plantation Drive, etc....) 2) Write an application to your H o D requesting three days leave for yours sister's marriage ceremony.	Remember/4	6 6
	OR		
B)	Use Full Block Format and write an application for the post of Asst. Engineer in Tata Consultancy Services (TCS), No. 11/2 Palace Road, Bangalore. (The Times of India, 10th July 2023) Attach your CV/Resume.	Remember/4	12
	*** End ***		

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Energy and Environment Engineering (2 Credits)
BTES105

Teaching Scheme	Evaluation Scheme
Lecture: 2hrs/week	Continuous Assessment:- 20 Marks
Mid Term Test:-20 Marks	End Semester Exam:-60 Marks

Course Objectives:

1. To Identify conventional, non conventional energy sources.
2. To understand the power consuming and power developing devices for effective utilization and power consumption
3. To Identify various sources of air, water pollution and its effects.
4. To understand noise, soil, thermal pollution and Identify solid, biomedical and hazardous waste.

Course Outcomes: Students will be able to:

1. Identify and aware about Conventional and Renewable energy sources.
2. Know the principle of Energy conservation to implement the energy conservation techniques.
3. Identify and control various sources of air, water and noise pollution and their effects.

Unit No.	Details of Content	Hrs
1.	**Conventional Power Generation:** Steam power station, Nuclear power plant – Gas turbine power plant- Hydro power station: Schematicarrangement, advantages and disadvantages, Thermo electric and thermionic generators, Environmental aspectsfor selecting the sites and locations of power plants.	4
2.	**Renewable Power Generation:** Solar, Wind, Biogas and Biomass, Ocean Thermal energy conversion (OTEC), Tidal, Fuel cell, Magneto Hydro Dynamics (MHD): Schematic arrangement, advantages and disadvantages.	4
3.	**Energy conservation**: Scope for energy conservation and its benefits Energy conservation Principle– Maximum energy efficiency, Maximum cost effectiveness, Methods and techniques of energy conservation in ventilation and air conditioners, compressors, pumps, fans and blowers, Energy conservation in electric furnaces, ovens and boilers., lighting techniques.	4
4.	**Air Pollution:** Environment and Human health - Air pollution: sources- effects- control measures - Particulate emission, air quality standards, and measurement of air pollution.	4
5.	**Water Pollution:** Water pollution- effects- control measures- Noise pollution –effects and control measures, Disposal of solid wastes, Bio-medical wastes-Thermal pollution – Soil pollution -Nuclear hazard.	4

Reference/ Text Books:

1. A Chakrabarti, M. L Soni, P. V. Gupta, U. S. Bhatnagar, A Text book of Power System Engineering,Dhanpat Rai Publication.
2. Rai. G. D., Non Conventional Energy Sources, Khanna Publishers, Delhi,2006.
3. Rao S., Parulekar B.B., Energy Technology-Non conventional, Renewable And Conventional, KhannaPublishers, Delhi,2005.
4. Glynn Henry J., Gary W. Heinke, Environmental Science and Engineering, Pearson Education,Inc,2004.
5. J. M. Fowler, Energy and the Environment, McGraw-Hill, 2 nd Edition,1984.
6. Gilbert M. Masters, Introduction to Environmental Engineering and Science, 2nd Edition, PrenticeHall,2003.

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular & Supplementary Semester Examination – Summer 2023

Course: B. Tech. **Branch: Civil Engineering** **Semester: II**

Subject Code & Name: BTES205/BTES205E Energy and Environment Engg.

Max Marks: 60 **Date: 21/7/2023** **Duration: 3 Hrs.**

Instructions to the Students:
1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q. 1	**Solve the following.**		**12**
A)	Explain the working of a Hydro electric power plant with neat diagram.	CO1	6
B)	What is the nuclear chain reaction? Explain the importance of moderator and control rods in a nuclear reactor with respect to chain reaction	CO1	6
C)	What are the fossil fuels used for generation of conventional power? Explain in detail Steam power plant.	CO1	6
Q.2	**Solve Any Two of the following.**		**12**
A)	How the wind mills are classified? Sketch the diagram of HAWT, and explain the function of its main components.	CO2	6
B)	What is Bio-mass? Write construction and working of bio-gas plant, with a neat diagram. Also write down the advantages of it.	CO2	6
C)	Define solar energy. What is flat plate collector? Describe its components with suitable sketch.	CO2	6
Q. 3	**Solve Any Two of the following.**		**12**
A)	What do you mean by energy conservation? Explain the measures to be taken to reduce the energy conservation in domestic activities. List any four measures.	CO2	6
B)	What do you understand by maximum energy efficiency in context with energy conservation principle? Discuss with a suitable example.	CO1	6
			6
Q.4	**Solve Any Two of the following.**		**12**
A)	Define Air Pollution. Write down the different classification of air pollution sources.	CO3	6
B)	Explain briefly effect of air pollution on human being and vegetation.	CO1	6
C)	What is radioactive pollution? What are its effects? How we can control Radioactive Pollution?	CO3	6
Q. 5	**Solve the following.**		**12**
A)	What are the main causes of water pollution? How can water pollution be controlled?		

B) Explain the following terms: CO3   6
     a. Thermal pollution
     b. Acid rain

C) What are the various methods of safe disposal of solid wastes?   CO3   6

*** End ***

Basic Civil and Mechanical Engineering (Audit)
BTES106

Teaching Scheme	Evaluation Scheme
Lecture: 2 Hrs/ week	Continuous Assessment:- 50 Marks
Audit Course	

Course Objectives:
1. To identify various Civil Engineering materials and choose suitable material among various options.
2. To know and apply principles of surveying to solve engineering problem
3. To Identify various Civil Engineering structural components and select appropriate structural system among various options
4. To Explain and define various properties of basic thermodynamics, materials and manufacturing processes.
5. To know and discuss the working principle of various power consuming and power developing devices

Course Outcomes: Students will be able to:
1. To understand principals of surveying in actual practice to prepare plan or map.
2. To understand concepts of building planning, building component and uses of building material.
3. Define and explain basic terms of thermodynamics, laws of thermodynamics and working of IC Engine & different power plants.
4. Define and explain basic terms related to machine, mechanism, engg. materilas and working of machine tools.

Unit No.	Details of Content	Hrs
	Part I Basic Civil Engineering	
	Module 1: Introduction to civil engineering Various Branches, role of civil engineer in various construction activities, basic engineering properties and uses of materials: earth, bricks, timber, stones, sand, aggregates, cement, mortar, concrete, steel, bitumen, glass, FRP, composite materials.	4
	Module 2: Building Components & Building Planning Foundation and superstructure, functions of foundation, types of shallow and deep foundations, suitability in different situation, plinth, walls, lintels, beams, columns, slabs, roofs, staircases, floors, doors, windows, sills, Study of Building plans, ventilation, basics of plumbing and sanitation	4
	Module3: Surveying Principles of survey, elements of distance and angular measurements, plotting of area, base line and offsets, introduction to Plane table surveying, introduction to levelling, concept of bench marks, reduced level, contours	4

	Part II Basic Mechanical Engineering	
1.	**Introduction to Mechanical Engineering:** Introduction to Laws of Thermodynamics with simple examples pertaining to respective branches, IC Engines: Classification, Applications, Basic terminology, 2 and 4 stroke IC engine working principle, Power Plant: Types of Power plant; Gas power plant, Thermal power plant, Nuclear power plant, Automobiles: Basic definitions and objectives	4
2.	Design Basics, Machine and Mechanisms, Factor of safety, Engineering Materials: types and applications, basics of Fasteners Machining and Machinability, Introduction to Lathe machine, Drilling machine, Milling machine, basics of machining processes such as turning, drilling and milling, Introductiontocasting	4

Text Books

1) Anurag Kandya, "Elements of Civil Engineering", Charotar Publishing, Anand

2) M. G. Shah, C. M. Kale, and S. Y. Patki, "Building Drawing", Tata McGraw Hill

3) Sushil Kumar, "Building Construction", Standard Publishers Distributors

4) M. S. Palani Gamy, "Basic Civil Engineering", Tata Mc-Graw Hill Publication

5) Kanetkar T. P. and Kulkarni S. V., "Surveying and Levelling", Vols. I, II and III, Vidyarthi Gruh Prakashan, Pune

6) B. C. Punmia, "Surveying", Vol.- I, Vol.-II, Vol.-III, Laxmi Publications

7) G. K. Hiraskar, "Basic Civil Engineering", Dhanpat Rai Publications

8) Gopi Satheesh, "Basic Civil Engineering", Pearson Education

9) P. K. Nag "Engineering Thermodynamics", Tata McGraw Hill, New Delhi 3rd ed. 2005

10) A. Ghosh, A. K. Malik, "Theory of Mechanisms and Machines", Affiliated East West Press Pvt. Ltd. New Delhi.

11) Serope Kalpakaji and Steven R. Schimd "Amanufacturing Engineering and Techology" Addision Wsley Laongman India 6th Edition 2009

12) V. B. Bhandari, "Deisgn of Machine Elements", Tata McGraw Hill Publications, New Delhi.

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	End Semester Exam	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 mid semester 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.

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).

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 mid semester 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

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<tr><td></td><td></td><td>the commencement of the end-semester examination for the respective year.</td></tr>
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(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

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 $\geq 70\%$, 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 $\approx$ 5

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

Hence, IL = (62-40)/5 = 4.4 $\approx$ 4, IU = (84-62)/4 = 5.5 $\approx$ 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:

First Year B. Tech Engineering

$$SGPA = \frac{(\Sigma_{i=1}^{n} c_1 g_1)}{(\Sigma_{i=1}^{n} c_1)}$$

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:

$$CGPA = \frac{(\Sigma_{i=1}^{m} c_1 g_1)}{(\Sigma_{i=1}^{m} c_1)}$$

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 Honours

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)