

Dr. V.P.S.S.M's Padmabhooshan Vasantraodada Patil Institute of Technology, Budhgaon (Sangli) Student Information Manual

First Year B. Tech.



2022-23

Dr. V. P. Shetkari Shikshan Mandal's Padmabhooshan Vasantraodada Patil Institute of Technology, Budhgaon– 416304 STUDENT'S INFORMATION MANUAL (Academic Year: 2022-23) Semester-II 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.



1.

STRUCTURE C F FIRST YEAR ENGINEERING

(With effective from Academic Year 2022-23)



- 2. **Computer Science and Engineering** (AI&DS)
- 3. Electronics and Computer Science Engineering
- 2. Civil Engineering
- 3. **Mechanical Engineering**
- **Mechatronics Engineering** 4.
- 5. Instrumentation and control Engineering
- 6. Electronics & Telecommunication Engg.
- 7. Electrical and Computer Engineering



Sr. No.	Content	Page No.
	DEPARTMENTAL INFORMATION	
1	Role of Students	6
2	Laboratory Instructions	7
3	Teaching and Evaluation Scheme	8
4	Course Coordinators and Course Teachers	9
5	Class Teacher	10
6	Academic Calendar	11
7	Time Table	12-14
	DEPARTMENTAL ACTIVITIES	
11	Mentoring Activity	15
12	Counseling Activity	15
13	Class Teacher Activity	16
14	Remedial Lectures, Test Series (Unit Test, Open Book Test, Prelim), Co/Extra Curricular Activities	16
15	Anti-Ragging Activity	17
16	Library, Gymkhana, NSS, Hostel	18
17	Training and Placement Office	19
	SUBJECT INFORMATION	
18	Engineering Mathematics-I	20
19	Engineering Physics	24
20	Engineering Graphics	29
21	Communication Skills	34
22	Energy and Environment Engineering	38
23	Basic Civil and Mechanical Engineering	42
24	Credit System and Mode of evaluation	44

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- II

(Computer Science and Engineering/ Computer Science and Engineering (AI&DS)/ Electronics and Computer Science Engineering)

Sr.	Course Code	Name of Course	Te S	eachi chen	ng 1e	E	Evaluatio	on Sche	me	Credit
110.			L	Т	Р	CA	MSE	ESE	Total	
1	BTBS201	Engineering Mathematics-II	3	1	-	20	20	60	100	4
2	BTBS202	Engineering Physics	3	1	-	20	20	60	100	4
3	BTES203	Engineering Graphics	2	-	-	20	20	60	100	2
4	BTHM204	Communication Skills	2	-	-	20	20	60	100	2
5	BTES205	Energy and Environment Engineering	2	-	-	20	20	60	100	2
6	BTES206	Basic Civil and Mechanical Engineering	2	-	-	50	-	-	50	Audit
7	BTBS207L	Engineering Physics Laboratory	-	-	2	60	-	40	100	1
8	BTES208L	Engineering Graphics Laboratory	-	-	4	60	-	40	100	2
10	BTHM209L	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-II	BS201	Mr. R. U. Yadav	ruyadav.ge@pvpitsangli.edu.in	7776074138
2	Engineering Physics	BS202	Dr. S. L. Patil	slpatil.ge@pvpitsangli.edu.in	9423269875
3	Engineering Graphics	BE203	Mr. S. B. Khandagale	sbkhandagale@pvpitsangli.edu.in	7798934522
4	Communication Skill	HM204	Mr. S. E. Narwade	senarwade.ge@pvpitsangli.edu.in	9527057048
5	Energy and Environmental Engineering	ES205	Mr. A. J. Pawar	ajpawar@pvpitsangli.edu.in	7769033396
6	Basic Civil and Mechanical Engineering	ES206	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.	Class/	Class Taaabars	Donartmont	Email id	Contact
No.	Div	Class Teachers	Department	Eman ki	No.
01	Ι	Ms. P.B.Patil	Chemistry	patilprajakta9102@gmail.com	9518599062
02	Π	Dr. S. L. Patil	Physics	slpatil.ge@pvpitsangli.edu.in	9423269875
03	III	Ms. A. K. Patil	Mathematics	ashwinipatil10599@gmail.com	9623653978
04	IV	Mr. A. K. Chavan	Communication Skill	chavanak01@gmail.com	9834750779
05	V	Mrs. A. V. Patil	Mathematics	avpatil.ge@pvpitsangli.edu.in	9561212878
06	VI	Mr. A. A. Shaikh	Physics	aashaikh.ge@pvpitsangli.edu.in	9623819950

2022-23



COURSE TEACHERS



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

ACADEMIC CALENDAR 2022-23 SEM-II





TIME TABLE

Kuin Antonia Antonia		FIRST	ΓYE	AR ENG TIM	INE ET.	ERING DEPAR ABLE 2022-23	TMEI B SEI	NT (F VI-II	. Ү. В.	Tech)	With Effec From 03/04/202
ss: FE	-II	Branch: -		Comput	er	Sci. and Engg	. (CS	E)	PHY	SICS Group	CL-05
FIME IN HI	RS	MONDAY	Т	TUESDAY		WEDNESDAY	ТН	URSD	AY	FRIDAY	SATURDAY
10:00 TO 11:	00	ES206- SSA	BS	201- AA	Р	B1- HM209L	BS2	201- A	AP	ES205- AJP	LVH
11:00 TO 12:	00	BS201- AAP	HN	1204- SE	N	B2- BS207L B3- ES208L	BS	202- 5	SLP	BS202- SLP	
12:00 TO 12.	45					LONG	R	ECES	S		
12.45 TO 13:	45	ES205-AJP	В	1- ES208L		BS202- SLP	ES2	203- s	BK	B1- ES208L	
13:45 TO 14:	45	ES203- SBK	B3-2	2- HM209L	(T)	HM204- SEN	ES2	206- N	ISK	B2- ES210S B3- BS207I	-
14:45 TO 15:	00		00-2		(1)	SHORT	R	ECES	S	DO DOZUIE	
15:00 TO 16:	00	B1- BS207L	В	1- ES210S		B1-202(T)/201(T)	# TP) Sess	ion / 🔺	BS201- AAP	
16:00 TO 17:	00	B2- ES208L B3- HM2091	B2-2	202(T)/201	(T)	B2- ES208L B3- ES210S	Guest	Lec. /	M-M /,	ES206-SBK	
P-/A A Patil	1	SLP-S L Patil SF	3K - S	B Khanda	gale	SEN-S E Narwade	AJP-	J Paw	ar SS	A-SSAwati MS	K- M S Kakmare
/ Counselor Int.	. Ment	ee –Mentor or Counselor	Interact	ion *-Extra	a	(T)-Tutorial		# - Al	ternate	LVH-Library Visit	Hour
o. Course Code	1	Name of the Course	Sr. No.	Course Code	0	Name of the Course		Sr. No.	Course Co	de Name of	the Course
BS201 BS202	Engi	neering Mathematics-II	4	HM204 F\$205	Ene	numcation Skills	arina	9	BS207L	Engineering Physics	Laboratory
ES202	Engi	neering Graphics	6	ES205	Basic	Civil and Mechanical Engine	eering	9	HM2091	Communication Skil	ls Lab
and the second s		and an and a second sec	-	A COLOR OF A		and the second second second		10	ESTING	C.	L'h streomi
	SS: FE FIME IN HI 10:00 TO 11: 11:00 TO 12: 12:00 TO 12: 12:45 TO 13: 13:45 TO 14: 14:45 TO 15: 15:00 TO 16: 16:00 TO 17: P-/A A Pati / Course Code BS201 BS202 ES203	Pad ss: FE-II FIME IN HRS 10:00 TO 11:00 11:00 TO 12:00 12:00 TO 12:45 12:45 TO 13:45 13:45 TO 14:45 13:45 TO 14:45 14:45 TO 15:00 15:00 TO 16:00 16:00 TO 17:00 P-/A A Patil / Course Code 2 BS201 Engin BS202 Engin ES203 Engin	Padmabhooshan FIRST SS: FE-II Branch: - FIME IN HRS MONDAY 10:00 TO 11:00 ES206- SSA 11:00 TO 12:00 BS201- AAP 12:00 TO 12:45 12:45 TO 13:45 ES205- AJP 13:45 TO 14:45 ES203- SBK 14:45 TO 15:00 15:00 TO 16:00 B1- BS207L B2- ES208L B3- HM209L P-/A A Patil SLP-S L Patil SE / Courselor Int. MenteeMentor or Courselor BS201 Engineering Mathematics-II BS202 Engineering Mathematics-II BS201 Engineering Mathematics-II BS202 Engineering Mathematics-II BS202 Engineering Mathematics-II	Padmabhooshan Vasi FIRST YE ss: FE-II Branch: - O FIRST YE MONDAY T 10:00 TO 11:00 ES206- SSA BS 11:00 TO 12:00 BS201- AAP HN 12:00 TO 12:45 ES205- AJP B 13:45 TO 14:45 ES203- SBK B3-2 16:00 TO 17:00 B1- BS207L B B2- ES208L B2-2 B 16:00 TO 17:00 B1- BS207L B B2- IS208L B2-3 B I6:00 TO 17:00 B1- BS207L B B2-1 B2-1 B I6:00 TO 17:00 B1- BS207L B B2-1 B2-1 B I6:00 TO 17:00 B1- BS207L B B2-1 B2-1 B I6:00 TO 17:00 B1- BS207L B B2-1 B2-1 B B I6:00 TO 17:00 B1- BS207L B B B2-1 Egineering Mathematics-II B B201 Engineering Mathematics-II A B202 Engineering Graphics	Padmabhooshan Vasantraoda FIRST YEAR ENG FIRST YEAR ENG TIM ss: FE-II Branch: - Compute TIME IN HRS MONDAY TUESDAY 10:00 TO 11:00 ES206- SSA BS201- AA 11:00 TO 12:00 BS201- AAP HM204- SE 12:00 TO 12:45 B1- ES208L B2- HM209L 13:45 TO 14:45 ES203- SBK B1- ES208L 13:45 TO 14:45 ES203- SBK B1- ES208L 15:00 TO 16:00 B1- BS207L B1- ES210S 16:00 TO 17:00 B1- BS207L B1- ES210S B2- ES208L B2- 202(T)/201 B3- ES208L B2- S208L P-/A A Patil SLP-S L Patil SBK – S B Khanda / course Code Name of the Course Sr. No. Course Code BS201 Engineering Mathematics-II 4 HM204 BS202 Engineering Physics 5 ES204 BS203 Engineering Graphics 6 ES206	Padmabhooshan Vasantraodada FIRST YEAR ENGINE SS: FE-II Branch: - Computer TIMET. SS: FE-II Branch: - Computer TIME IN HRS MONDAY TUESDAY 10:00 TO 11:00 ES206- SSA BS201- AAP 11:00 TO 12:00 BS201- AAP HM204- SEN 12:00 TO 12:45 B1- ES208L B2- HM209L 13:45 TO 14:45 ES203- SBK B1- ES208L 13:45 TO 14:45 ES203- SBK B1- ES210S 15:00 TO 16:00 B1- BS207L B1- ES210S 16:00 TO 17:00 B1- BS207L B3- ES208L P-/A A Patil SLP-S L Patil SBK – S B Khandagale / Counselor Int. Mentee -Mentor or Counselor Interaction *-Extra 0. Course Code Name of the Course Sr. No. Course Code BS201 Engineering Mathematics-II 4 HM204 comm BS202 Engineering Mathematics-II 4 HM204 comm BS203 Engineering Mathematics-II 4 HM204 comm BS204 Engineering Mathematics-II 4 HM204 comm BS205 Engineering Mathematics-II 4 <	Padmabhooshan Vasantraodada Patil Institute O FIRST YEAR ENGINEERING DEPAR TIMETABLE 2022-23 ISS: FE-II Branch: - Computer Sci. and Engg TIMETABLE 2022-23 ISS: FE-II Branch: - Computer Sci. and Engg TIMETABLE 2022-23 ISS: FE-II Branch: - Computer Sci. and Engg TIME IN HRS MONDAY MONDAY 10:00 TO 11:00 ES206- SSA BS201- AAP B1- HM209L 10:00 TO 12:00 BS201- AAP HM204- SEN B3- ES208L 12:00 TO 12:45 LONG ES202- SLP 13:45 TO 13:45 ES203- SBK B3-202(T)/201(T) HM204- SEN 13:45 TO 14:45 ES203- SBK B2-202(T)/201(T) B1- 202(T)/201(T) 13:45 TO 15:00 SHORT S1- ES208L B3- ES210S 14:45 TO 15:00 B1- ES210S B1- 202(T)/201(T) B2- ES208L 16:00 TO 17:00 B3- HM209L B3- ES208L B3- ES210S P-/A A Patil SLP-S L Patil SBK – S B Khandagale SEN-S E Narwade / / counselor Int. Mentee -Mentor or Counselor Interaction *-Extra (T)-Tutorial a. Cou	Padmabhooshan Vasantraodada Patil Institute Of Tecc FIRST YEAR ENGINEERING DEPARTMENT SINCE FIRST MODAY THE SINCE FIRST YEAR WEDNESDAY THE INTERTABLE 2022-23 SEK BS208L BS202 SINCE SINCESINCE SINCESINCE SINCE SINCE SINCE SINCE SINCE SINCE S	Padmabhooshan Vasantraodada Patil Institute Of Technolog FIRST YEAR ENGINEERING DEPARTMENT (F. TIMETABLE 2022-23 SEM-II ss: FE-II Branch: - Computer Sci. and Engg. (CSE) TIME IN HRS MONDAY TUESDAY WEDNESDAY THURSDAY 10:00 T0 11:00 ES206- SSA BS201- AAP B1- HM209L BS201- A 11:00 T0 12:00 BS201- AAP HM204- SEN B3- ES208L BS202- S 12:00 T0 12:45 LONG RECES3 12:45 T0 13:45 ES203- AJP B1- ES208L BS202- SLP ES203- S 13:45 T0 14:45 ES203- SBK B3-202(T)/201(T) HM204- SEN ES206- N 14:45 T0 15:00 SHORT RECES3 15:00 T0 16:00 B1- BS207L B1- ES210S B1- 202(T)/201(T) B2- ES208L 13:45 T0 14:45 ES208L B2- 202(T)/201(T) B2- ES208L Guest Lec. / 16:00 T0 17:00 B3- HM209L B3- ES210S B3- ES210S Guest Lec. / 16:00 T0 17:00 B3- HM209L B3- ES208L B3- ES208L Counselor 16:00 T0 17:00 B3- HM209L B3- ES208L B3- ES210S Guest Lec. /	Padmabhooshan Vasantraodada Patil Institute Of Technology, Sa FIRST YEAR ENGINEERING DEPARTMENT (F. Y. B. TIMETABLE 2022-23 SEM-II ss: FE-II Branch: - Computer Sci. and Engg. (CSE) PHY TIME IN HRS MONDAY TUESDAY WEDNESDAY THURSDAY 10:00 T0 11:00 ES206- SSA BS201- AAP B1-HM209L BS201- AAP B2-BS207L 11:00 T0 12:00 BS201- AAP HM204- SEN B3-ES208L BS202- SLP BS202- SLP 12:00 T0 12:45 LONG RECESS 12:45 TO 13:45 ES203- SBK B3-202(T)/201(T) HM204- SEN ES206- MSK 13:45 TO 14:45 ES203- SBK B3-202(T)/201(T) B1- ES208L B2-202(T)/201(T) B2-ES208L Guest Lec. / M-M / Counselor Int. * 16:00 TO 17:00 B1- BS207L B1- ES210S B1- 202(T)/201(T) B2-ES208L Guest Lec. / M-M / Counselor Int. * P-/A A Patil SLP-S L Patil SBK - S B Khandagale SEN-S E Narwade AJP-A J Pawar SS/ / Counselor Int. MenteeMentor or Counselor Interaction *-Extra (T)-Tutorial # - Alternate a. Course Code Name of the Course Sr. No. Course	Padmabhooshan Vasantraodada Patil Institute Of Technology, Sangli (Budhga FIRST YEAR ENGINEERING DEPARTMENT (F. Y. B. Tech) TIMETABLE 2022-23 SEM-II ss: FE-II Branch: - Computer Sci. and Engg. (CSE) PHYSICS Group TIME IN HRS MONDAY TUESDAY WEDNESDAY THURSDAY FINDAY Sign colspan="2">Sign colspan="2">Sign colspan="2">Sign colspan="2">Sign colspan="2">Sign colspan="2">Sign colspan="2">Sign colspan="2">COMPUTION COLSPAN Sign colspan="2">Sign colspan="2" Sign colspan= Sign colspan="2" Sign colspan="2" Sign colspan="2"





Dr. Vasantraodada Patil Shtekari Shikshan Mandal's Padmabhooshan Vasantraodada Patil Institute Of Technology, Sangli (Budhgaon). FIRST YEAR ENGINEERING DEPARTMENT (F. Y. B. Tech) TIMETABLE 2022-23 SEM-II

With Effect From 03/04/2023

Clas	ss: FE-IV 1	Branch: Com	puter Scienc	e and Engg	.(CSE-AIDS)	PHYSICS Gr	oup CL-O
Sr. No.	TIME IN HRS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	10:00 TO 11:00	BS201- SPM	BS201- SPM	ES206- SSA	BS202- AAS	D1- HM209L	LVH
2	11:00 TO 12:00	BS202- AAS	BS202- AAS	HM204 -AKC	ES203- CDP	D3- ES208L	
	12:00 TO 12.45			LONG	RECESS		
3	12.45 TO 13:45	ES206- MSK	D1-ES208L	ES205- AJP	D1-ES210S	ES203- CDP	
4	13:45 TO 14:45	HM204-AKC	D2- ES2105 D3- BS207L	BS201- SPM	D3- ES207L	ES205- AJP	
	14:45 TO 15:00			SHORT	RECESS		
5	15:00 TO 16:00	D1-202(T)/201(T)	D1-ES208L	D1-BS207L	# TPO Session /	*BS201- SPM	
6	16:00 TO 17:00	D2- ES208L D3- ES210S	D2- HM209L D3-202(T)/201(T)	D2- ES208L D3- HM209L	Guest Lec. / M-M / Counselor Int.	*ES203- CDP	
РМ-/ м-м/	S P Mandale AA Counselor Int. Mentee	AS-A A Shaikh CDF	P-CDPatil AKC	- A K Chavan (T)-Tutoria	AJP- A J Pawar S I # - Altern	SSA- S S Awati MS ate LVH-Library Vi	K- M S Kakmar sit Hour

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	BS201	Engineering Mathematics-II	4	HM204	Communication Skills	7	BS207L	Engineering Physics Laboratory
2	BS202	Engineering Physics	5	ES205	Energy and Environment Engineering	8	ES208L	Engineering Graphics Laboratory
3	ES203	Engineering Graphics	6	ES206	Basic Civil and Mechanical Engineering	9	HM209L	Communication Skills Lab
						10	ES210S	Seminar

(Dr. Sanjay L. Patil) Time-Table Coordinator, FY BTECH (Dr. Mrs. Anushka Patil) HOD, First Year Engg. (Dr. K. K. Pandyaji) Academic Dean (Dr. D. V. Ghewade) Principal



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ss: FE	-VI	Branch:	Ele	ctronics	; an	d Comp. Sci.	Eng	g.(EC	S) PHY	SICS Grou	p CL-07
TIME IN	HRS	MONDAY		TUESDAY	Y	WEDNESDAY	TH	IURSD.	AY	FRIDAY	SATURDAY
10:00 TO	11:00	ES203- A	PL	ES205- A	JP	ES205- AJP	F1-	- HM20	9L B	S201- SPM	LVH
11:00 TO	12:00	HM204- A	кс	BS201- S	PM	BS202-AAS	F2-20)2(T)/2	01(T) E	S203- APL	
12:00 TO	12.45					LONG	F	RECES	S		
12.45 TO	13:45	F1- ES208	L	BS202- A	AS	F1-ES208L	BS	201- 5	SPM F	S206-PVK	
13:45 TO	14:45	F2-ES210	S -	ES206- N	ISK	F2-HM209L	BS	202-		M204- AKC	-
14:45 TO	15:00	F3- B3207		20200 1		SHORT	5	RECES	s		
15:00 TO	16:00	*BS201- S	РМ	E1. ES21(05	E1-202(T)/201(T)		0.5000	ion /	1- BS2071	<u> </u>
16:00 TO	17:00	*ES203- A	PL	F2- BS20 F3- ES20	7L 8L	F2- ES208L F3- ES210S	Guest Cou	t Lec. /	M-M/I	F2- ES208L	
16:00 TO -/S P Mand / Counselor In	17:00 ale AA t. Mentee	*ES203- A S-A A Shaikh Mentor or Couns	PL AP	F3- ES208 L-/A P Lad teraction *-Ex	BL AK ctra	F3- ES210S C- A K Chavan AJ (T)-Tutoria	Cou JP- A J I	Inselor Pawa # -	Int. F PVK-P Alternate	-3- HM209L V Kadam MSI LVH-Library	K- M S Kakmare Visit Hour
Course Code BS201	Engineeri	e of the Course ing Mathematics-II	Sr. No	5. Course Code HM204	Comm	unication Skills		Sr. No. 7	Course Code BS207L	Name of Engineering Physics	Laboratory
	Engineeri	ing Physics	5	ES205	Energ	gy and Environment Enginee	ring	8	ES208L	Engineering Graphic	cs Laboratory
BS202			6	F\$206	Basic (Civil and Mechanical Engine	eering	9	HM209L	Communication Skil	lls Lab
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Engg.(ECS) PHYSICS Grout TIME IN HRS MONDAY TUESDAY WEDNESDAY THURSDAY 10:00 T0 11:00 ES203- APL ES205- AJP ES205- AJP F1- HM209L BS201- SPM 11:00 T0 12:00 HM204- AKC BS201- SPM ES203- APL 12:00 T0 12:45 LONG 12:00 T0 12:45 LONG 12:00 T0 12:45 ES206- MSK 12:45 T0 13:45 F1- ES208L F2- ES210S F3- BS207L ES206- MSK F3-202(T)/201(T) BS202- AAS HM204- AKC 14:45 T0 15:00 SHORT SHORT RECESS 15:00 T0 16:00 *BS201- SPM F1- ES208L F3- BS207L F1- ES210S F2- BS207L F3- ES208L F3- ES208L F3- ES208L F3- ES208L F3- ES208L F3- ES208L F3- ES208L F3- ES208L F3- ES208L F3- HM209L //S P Mandale AAS-A A Shaikh APL-/A P Lad AKC- A K Chavan AJP- A J Pawar //Counselor Int. Mentee -Mentor o

DEPARTMENTAL ACTIVITY 1) <u>MENTORING ACTIVITY:</u>

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 /<u>Mentor/ Head of First Year</u> <u>Engg. Dept. (/Dr. Mrs. A. A. Patil)</u> 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 <u>Class Teacher</u>.



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.

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Our Recruiters

	Engineeri	ng Mathematics – II (4 Credits) BTBS201	
Teachi	ng Scheme	Evaluation Scheme	
Lecture	: 3 hrs/ week	Continuous Assessment:- 20 Marks	
Tutoria	1: 1 hr/ week	Mid Term Test:-20 Marks	
		End Semester Exam:-60 Marks	
Course 1. 4. 3. 4. 3. 4. 5. 5. 5. 5. 5. 5. 6a Course Studen 1. 4. 2. 5. 3. 4. 3. 4. 3. 5. 5. 1. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.	Objectives: To know and discuss the n separate complex antities and to establish relation To understand and solve fir em as amathematical modelin To determine Fourier series n To Demonstrate the concept d geometricalmeaning of gra To know and apply the print faceintegral, surface to volum uss divergence theorems. Outcomes: ts will be able to : Discuss the need and use of antities and toestablish relati Solve first and higher order thematical modeling inelect Determine Fourier series rep Demonstrate the concept of volume the principles of vect egral , surface tovolume integree vergence theorems.	End Semester Exam:-60 Marks need and use of complex variables to find roots ,to between circular and hyperbolic functions. rst and higher order differential equations and apply ng in electric and mechanical systems. representation of periodic functions over different intervo to of vector differentiation and interpret the physical adient, divergence &curl in various engineering streams ciples of vector integration to transform line integral to ne integral &vice versa using Green''s , Stoke''s and f complex variables to find roots ,to separate complex ion between circular and hyperbolic functions. r differential equations and apply them as a tric and mechanical systems. resentation of periodic functions over different intervals vector differentiation and interpret the physical and t, divergence &curl in various engineering streams. tor integration to transform line integral to surface gral &vice versa using Green''s , Stoke''s and Gauss	vals.
No.		Details of Content	nrs
1.	Unit 1: Complex Numbers		7
	Definition and geometrical re of complex numbers by usin variable – definition ; Hypert	presentation ; De-Moivre ^{**} s theorem(without proof) ; Roots ng De-Moivre ^{**} s theorem ; Circular functions of complex bolic functions ; Relations between circular and hyperbolic	
	functions ; Real and imaginar Complexquantities.	ry parts of circular and hyperbolic functions ; Logarithm of	
2.	Unit 2: Ordinary Differential Their Applications	l Equations of First Order and First Degree and	7



3.	Unit 3: Linear Differential Equations with Constant Coefficients Introductory remarks - complementary function, particular integral ; Rules for finding complementary functions and particular integrals ; Method of variation of parameters ; Cauchy's homogeneous and Legendre's linear equations.	7
4.	Unit 4: Fourier Series Introductory remarks- Euler"s formulae ; Conditions for Fourier series expansion - Dirichlet"s conditions ; Functions having points of discontinuity ; Change of interval ; Odd and even functions expansions of odd and even periodic functions ; Half- rangeseries.	7
5.	Unit 5: Vector Calculus Scalar and vector fields:Gradient, divergence and curl; Solenoidal and irrotational vector fields; Vector identities (statement without proofs); Green's lemma, Gauss'' divergence theorem and Stokes'' theorem (without proofs)	7

Text Books

- a. Higher Engineering Mathematics by B. S. Grewal, Khanna Publishers, NewDelhi.
- b. Advanced Engineering Mathematics by Erwin Kreyszig, John Wiley & Sons, NewYork.
- c. A Course in Engineering Mathematics (Vol II) by Dr. B. B. Singh, Synergy Knowledge ware, Mumbai.
- d. A Text Book of Applied Mathematics (Vol I & II) by P. N. Wartikar and J. N. Wartikar, PuneVidyarthi Griha Prakashan,Pune.
- e. Higher Engineering Mathematics by H. K. Das and Er. Rajnish Verma, S. Chand & CO. Pvt.Ltd., New Delhi.

Reference Books

- a. Higher Engineering Mathematics by B. V. Ramana, Tata McGraw-Hill Publications, New Delhi.
- b. A Text Book of Engineering Mathematics by Peter O" Neil, Thomson Asia Pte Ltd., Singapore.
- c. Advanced Engineering Mathematics by C. R. Wylie & L. C. Barrett, Tata Mcgraw-Hill Publishing Company Ltd., NewDelhi.

General Instructions:

- 1. The tutorial classes in Engineering Mathematics-II are to be conducted batchwise. Eachclass should be divided into three batches for thepurpose.
- 2. The internal assessment of the students for 20 marks will be done based on assignments, surprise tests, quizzes, innovative approach to problem solving and percentageattendance.
- 3. The minimum number of assignments should be eight covering alltopics.



DR. BABASAHEB AMBEDRAR TECHNOLO LONERE – RAIGAD 402 10 Summer End Semester Examinatio	on –2022
Branch: B. Tech. (Common to all)	Semester: II
Subject with Subject Code: Engineering Mathematics – II (BTBS 2	01) Marks: 60
Date: 17/08/2022	Time: 3.45 Hrs.
Instructions to the Students 1. Illustrate your answers with neat sketches, diagrams, etc., whe 2. If some part or parameter is noticed to be missing, you may approximate it and should mention it clearly.	erever necessary. opropriately
Q. 1	
(a) If the sum and product of two complex numbers are real, show that real or conjugate.	those two numbers must be eithe [4 Marks
(b) Solve the equation $x^6 - i = 0$.	[4 Mark
(c) If $\tan(A + iB) = x + iy$, prove that	23
(i) $\tan 2A = \frac{2x}{1-x^2-y^2}$ (ii) $\tanh 2B = \frac{2y}{1+x^2+y^2}$	[4 Marks
Q. 2	
(a) Solve: $\cos^2 x \frac{dy}{dx} + y = \tan x$.	[4 Marks
(b) Solve: $(x^2 + y^2)dx - xy dy = 0$.	[4 Marks
(c) Solve: $\frac{dy}{dx} + x \sin 2y = x^3 \cos^2 y$.	
	[4 Marks
Q. 3 Solve any THREE:	
(a) Solve $(D^6 - D^4)y = x^2$.	[4 Marks
(b) Solve $(D^2 - 2D + 1)y = x e^x \cos x$.	[4 Marks
88848808855840 12.	x. [4 Marks
(c) Solve by the method of variation of parameters: $\frac{d^2y}{dx^2} + y = \cos e c$.	







Engineering Physics (4 Credits) BTBS202

Teaching Scheme Lecture: 3 hrs/ 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 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	Details of Content	Hr
No.		S
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). 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, Halleffect. 7 Text books Engineering Physics – Dr. L. N. Singh. Synergy Knowledgeware-Mumbai. Engineering Physics - Dr. L. N. Singh. Synergy Knowledgeware-Mumbai. Engineering Physics - R.K. Gaur and S. L. Gupta. DhanpatRai Publications Pvt. LtdNew Delhi. Fundamental of Physics - Halliday and Resnik. Willey Eastern Limited. Reference books Introduction to Electrodynamics –David R. Griffiths Concept of Modern Physics – Arthur Beizer. Tata McGraw-Hill Publishing Company Limited. Optics – Ajay Ghatak. Mac Graw Hill Education (India) Pvt. Ltd. Solid State Physics – AJ. Dekker. McMillan India –Limited. The Feynman Lectures on Physics Vol. I, II, III. Introduction to solid state physics – Charles Kittel. John Willey and Sons 			
 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, Halleffect. 7 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
 Text books Engineering Physics M.N. Avadhanulu and P.G. Kshirsagar. S.Chand and Company LTD. Engineering Physics – Dr. L. N. Singh. Synergy Knowledgeware-Mumbai. Engineering Physics - R.K. Gaur and S. L. Gupta. DhanpatRai Publications Pvt. LtdNew Delhi. Fundamental of Physics - Halliday and Resnik. Willey Eastern Limited. Reference books Introduction to Electrodynamics –David R. Griffiths Concept of Modern Physics – Arthur Beizer. Tata McGraw-Hill Publishing Company Limited. Optics – Ajay Ghatak. Mac Graw Hill Education (India) Pvt. Ltd. Science of Engineering Materials- C.M. Srivastava and C. Srinivasan. New Age International Pvt. Ltd. Solid State Physics – A.J. Dekker. McMillan India –Limited. The Feynman Lectures on Physics Vol. I, II, III. Introduction to solid state physics – Charles Kittel. John Willey and Sons 	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, Halleffect.	7
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 Reference books Introduction to Electrodynamics –David R. Griffiths Concept of Modern Physics – Arthur Beizer. Tata McGraw-Hill Publishing Company Limited. Optics – Ajay Ghatak. Mac Graw Hill Education (India) Pvt. Ltd. Science of Engineering Materials- C.M. Srivastava and C. Srinivasan. New Age International Pvt. Ltd. Solid State Physics – A.J. Dekker. McMillan India –Limited. The Feynman Lectures on Physics Vol. I, II, III. Introduction to solid state physics – Charles Kittel. John Willey and Sons 	4.	Fundamental of Physics - Halliday and Resnik. Willey Eastern Limited.	
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 The Feynman Lectures on Physics Vol. I, II, III. Introduction to solid state physics – Charles Kittel. John Willey and Sons 	5.	Solid State Physics – A.J. Dekker. McMillan India –Limited.	
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	7.	Introduction to solid state physics - Charles Kittel. John Willey and Sons	



Engineering Physics Laboratory BTBS207L

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	
	Winter Examination – 2022 Course: B. Tech. Subject Code & Name: Engineering Physics (BTB\$102P)	er : I	
	Max Marks: 60 Date:23/03/23 Duratio		-
	 All the questions are compulsory. The level of question/expected answer as per OBE or the Course Outcome which the question is based is mentioned in () in front of the question. Use of non-programmable scientific calculators is allowed. Assume suitable data wherever necessary and mention it clearly. 	ome (CO) on	
Q. 1	Solve Any Two of the following.	(Level/CO)	Marks
A)	Describe the construction and working		12
B)	using magnetostriction method. Define free oscillation Set	CO1	6
C)	and find it's solution. Define ultrasonic wayes List their	CO1	6
	the details of any one application with labeled diagram.	CO1	6
Q.2	Solve Any Two of the following		
A)	Derive an expression for darkness 1		12
	interference.	CO2	6
B)	Explain the production of polarization due to birefringence (Double refraction) with neat diagram.	CO2	6
C)	Explain the construction and working of He-Ne laser with neat and labeled diagram.	CO2	6
Q. 3	Solve Any Two of the following.		
A)	Derive Schrodinger's time independent wave equation		12
B)	With neat diagram, explain the construction & months	CO3	6
0	Muller Counter.	CO3	6
C)	Explain with neat diagram, how isotopes can be separated with the help of Bainbridge mass spectrograph.	CO3	6
Q.4	Solve the following.		12
A)	Describe the production of characteristic X-rays.	C04	12
	Calculate the minimum wavelength of X-rays, if the X-ray is operated	04	c



	at 20 kV.		
B)	Calculate the relation between atomic radius and lattice constant for BCC and FCC.	CO4	6
Q. 5	Solve Any Two of the following.		12
A)	Differentiate between conductor, semiconductor and insulator on the basis of energy band diagram and discuss their properties.		6
B)	Explain Meissner effect in superconductors. State any two applications of superconductors.		6
C)	Explain B-H curve for ferromagnetic materials. Write the significance of B-H curve.		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	Details of Content	Hrs
No.		
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



4

Sectioning of Solids, Isometric Projections

5. 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.

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 BTES2081			
Practical Scheme Ex Lecture: 4 Hrs/ Batch Co Ex		Evaluation Scheme Continuous Assessment:- 60 Marks External Exam:-40 Marks		
	List of Practic	cal		
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			

Section of solids.

Isometric Projections.

7.

8.





First Year B. Tech Engineering



	1°		
-	to the thickness and diameter 80 mm has a point A or its	\mathbf{R}/\mathbf{A}	12
в)	A circular plate of negligible intechess and eplate is inclined to the VP in such a circumference in the VP. The surface of the plate is inclined to the VP in such a way that the FV is seen as an ellipse of 50 mm long minor axis. Draw the projections of the plate when FV of diameter AB makes 45° with the HP. Find		
C)	FV of a line measures 70 mm and makes an angle of 30° with X [*] . The end A is in the HP and the VT of the line is 10 mm below XY. The line is inclined at 45° to the VP. Draw the projections of the line and find its TL and true inclinations with the HP. Also locate the HT.	R/A	12
Q. 3	Answer Any Two of the following.		
A)	A cone of diameter 60 mm and height 60 mm is resting on the HP on one of its	R/A	12
B)	A pentagonal pyramid having a base side of 45 mm and a slant length of 80 mm rests on its base on the HP with a base edge AB perpendicular to the VP. A section plane passing through corner D and perpendicular to the slant face ABO cuts the solid. Draw FV and sectional TV. (8)	R/A	12
	without changing its orientation with respect to the VP. Draw the two views of		
C)	the part of the pyramid. (4) Figure shows FV and TV of an object. Draw the isometric view that will show maximum details of the object. (Points in the figure are marked for your reference)	R/A	12



Communication Skills (2 Credits) BTHM204

Teaching Scheme

Evaluation Scheme

Lecture: 2 Hrs/ week Mid Term Test:- 20 Marks Continuous Assessment:- 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	Details of Content	Hrs
No.		
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



4

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.

Reference Books:

5.

- 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
- 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



	Courses D. m.	nter 2022-23		
	Branch: Civil, Mechanical, Chemical	& Petrochemics	l Engineering	1
	Subject Code a st		Semester: I	
	Max Marke: 60	ation Skills		
	Instructions to the Stud	Dura	tion: 3 Hours	
	 All the guestions are compulsory. The level of question/expected answer as per OBE or the which the question is based is mentioned in () in front. Use of non-programmable scientific calculators is allow Assume suitable data wherever necessary and mention 	he Course Outcoi of the question. wed. it clearly.	me (CO) on	
0.1	Solucion Sont, volue.		(Level/CO)	Marks
4.1	Solve any Two of the following		(2010) (20)	Initiation
A)	How does listening play an important role in the process of lang acquisition? Explain.	guage ,	L3/C01	6
ы	Write short notes on:		L3/CO2	6
	i) Features of good writing	1		
C)	According to you, whether all			
	According to you, what are the ways to overcome (nervousness	, mood,	L3/C01	6
	anxiety, attitude, etc.) the psychological barriers to communicat	ion.		
Q.2	Solve any Two of the following			
A)	Explain in your own words the DOs and DON'Ts of ef discussion.	fective group	L3/CO1	6
B)	Assume you are going to face an interview next week how	will you get	12/002	
	prepared for this interview?	will you get	L2/CO2	0
C)	'Proper use of PPT slides can make the presentation effective',	elaborate.	L3/CO3	6
Q. 3	Solve the following			
A)	a) Transcribe the following:	19	L2/CO3	6
	i) University			U
	ii) Examination		*	
	iii) Engineering	215		
ł	b) Spell the following:			
	i) /pjuə/ ii) /ˈsætədeɪ/ iii) /hiə/		*) ^{* 1}	
B) H	How the study of RP and IPA contribute to the process of star	ndardization of	L3/C03	6
E	inglich longues-0		201000	



Q.4	Solve the following.		
A)	Use proper articles and rewrite the sentences:	13/004	, ,
	a) Human being is intelligent animal.	15/004	' 4
	b) Mumbai is capital of Maharashtra.		
	d) It is always as it the		
B)	Fill in the blank:		
	i. Sairaj submitted the assignment Communication Skills	L2/CO4	4
	ii. The workers are recruited to a solution skills the last		
	the proper medium.		
C)	Do as directed:	12/005	
	i) Ashalata is leaving this company. (Rewrite using past perfect tense)	L3/C05	4
	ii) Saroj has returned the bunch of the research reports to the library		
	yesterday. (Rewrite the correct sentence)		
	iii) Pessimistic (Suggest a synonym)	69	
	iv) Dearth (Suggest an antonym)		
Q. 5	Solve Any One of the following.		
A)	Compose a resume and write an application for the post of engineer in	12/005	1 12
	Siemens Limited, Birla Aurora, Plot No. 1080, Dr. Annie Besant Road	12/005	12
	Worli, Mumbai - 400030. (The Indian Express 25 March 2023)		
B)	a) Explain the difference between technical writing and literary writing?	L2/C05	6
	b) According to you, what are ways to make the email writing effective?	L2/C05	6
	*** End ***	12/005	0

Energy and Environment Engineering (2 Credits) BTES205

Teaching Scheme Lecture: 2hrs/week Mid Term Test:-20 Marks **Evaluation Scheme** Continuous Assessment:- 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.



	Reguls	ar End Semester Exami-	nation - Winter 2022			
	Course: B. Tech.	Branch:	Semeste	r: 1		
	Subject Code & Name:	BTES105/BTE205E	Energy and Environme	ent Engineering		
	Max Marks: 60	Date: 29/03/202	3 Durati	on: 3 Hr.		
	Instructions to the Studen	its:				
	 All the questions at 2. Illustrate your answ The level of question which the question Use of non-program Assume suitable da 	re compulsory. vers with neat sketches, a m/expected answer as per is based is mentioned in mmable scientific calcula ata wherever necessary a	diagram etc., wherever no r OBE or the Course Out () in front of the questio. tors is allowed. nd mention it clearly.	ecessary tcome (CO) on n.		
				(Level/CO)	Marks	
Q. 1	Solve Any Two of the foll	owing.				
A)	What are the advantages of Explain with a simple diag	conventional energy sou gram the working of a gruch power plants in India	irces? as based thermal power	Remember/CO1	6	
B)	Why nuclear power plants are important for the development of the nation? Remember/CO1 6 Explain with a neat diagram the function of nuclear reactor and its					
C)	What are the disadvantages of coal based thermal power plants over the Remember/CO1 6 hydroelectric power plant? Write any four. Discuss coal and ash circuit of a coal based thermal power plant.					
Q.2	Solve Any Two of the follo	owing.				
A)	With a neat diagram, explai	n how wind energy can b	be converted into	Understand/CO2	6	
B)	electrical energy. Explain how ocean tides are generated and how the power can be tapped? Understand CO2 Discuss the limitations of this method.				6	
C)	What is the main advantage and disadvantage of biogas power? What are Remember /CO2 6 the main constituents? What are the factors affecting on the performance of biogas digester?					
0.3	Solve Any Two of the follo	owing.				
A)	Why should you look for BI How the energy efficiency i	EE star labels when buyir in industries can be impro	ng appliances? oved?	Remember/CO3	6	
B)	Define energy conservation. What energy conservation practices can be Remember CO3 6 implemented while transportation by vehicles on roads.					
C)	How one can improve the energy conservation in home appliances like Remember CO3 refrigerator and Air conditioner? Explain.					
Q.4	Solve Any Two of the follo	wing.			11	
A)	Define primary and seconda pollution and write their rem	ry air pollutants. Give the nedies. Any four.	e various causes of air	Dimensional CO4	0	
B)	Why deforestation is consid- the measures to be taken to o	ered as major reason for a control the air pollution.	air pollution? Explain Any six.	Kememcer (04	6	



• *				
	C)	What are the four causes of particulate matter? What are their categories? How does it affect the environment? And how do you reduce the pollution arises due to particulate matter?	Remember/CO4	6
Q	. 5	Solve Any Two of the following.		
	A)	Define Noise pollution. What are the effects of noise pollution on humans	Remember/CO5	6
	B)	Explain the concept of BOD and COD used for measuring water pollution.	Remember/CO5	6
	C)	What causes the thermal pollution? How can we prevent thermal pollution? How can thermal pollution be prevented?	Remember/CO5	6
		*** End ***		

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	Basic Civil and Mechanical Engineering (Audit) BTES206				
Teac	hing Scheme Evaluation Scheme				
Lectu	Lecture: 2 Hrs/ week Continuous Assessment:- 50 Marks				
Audi	t Course				
Cou	rse Objectives:				
1.	To identify various Civil Engineering materials and choose suitable material among va	arious			
2	options. To know and apply principles of surveying to solve angineering problem				
2.	To Identify various Civil Engineering structural components and select appropriate stru	etural			
5.	system among various options	ciurai			
4	To Explain and define various properties of basic thermodynamics materials and				
^{-1.}	manufacturing processes				
5	To know and discuss the working principle of various power consuming and power				
5.	developing devices				
	ucveloping devices rse Autcomes: Students will be able to:				
1. 2. 3.	 To understand principals of surveying in actual practice to prepare plan or map. To understand concepts of building planning, building component and uses of building material 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	ng of			
TI	Dete:la of Content	TT			
Unit	Details of Content	HLS			
N0.					
	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			

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	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	Rooks		
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, VolII, VolIII, 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. 200	5	
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 Techo	ology"	
	Addision Wsley Laongman India 6th Edition 2009		
12)	V. B. Bhandari, "Deisgn of Machine Elements", Tata McGraw Hill Publications	, New	
	Delhi.		
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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 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 endsemester 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
АА	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	Explanation	
Grade	Point		
FF	0	The candidate fails in subject head. The candidate will be allowed to take end-semester repeat or subsequent examinations	
		as per rule	
		(i) The candidate has not kept term for the subject head due to	
xx	0	attendance less than requisite 75%. (ii) The in-semester	
	0	the above cases, the candidate has to repeat the respective course	
		by paying the fees in the following year	
		The candidate has kept term for the subject head, has taken all	
		the internal examinations with satisfactory performance, but has	
Ι	0	failed to take the end-semester examination due to genuine	
		reasons. The candidate will be allowed to take subsequent	
		examinations as per rule	
		The candidate has exhausted all the permissible chances to clear	
FR	8 0	the end-semester examinations. The candidate has to register for	
	0	the respective semester again for all the subject heads or will be	
		out of the respective degree course as per the rules	
		(i) The candidate hasn't participated in academic programme. (ii)	
DR	0	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	



- (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 $60\% \le AM < 70\%$, 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.	Letter	Example 1	Example 2
No.	Grade	(HM=92, AM= 76, IL = 6, IU = 5	(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:

 $CGPA = \frac{(\sum_{i=1}^{m} c^{1}g^{1})}{(\sum_{i=1}^{m} c^{1})}$

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)