



# 2025-26 Sem-II

# Student Information

# Manual

FYBTech



# Student Information Manual (SIM)

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# INSTITUTE INFORMATION

Dr J. J. Magdum College of Engineering was established by Dr J. J. Magdum Trust, Jaysingpur in the year 1992 with an objective to promote the cause of higher education. The institute is approved by All India Council of Technical Education (AICTE), New Delhi and Government of Maharashtra, affiliated to Shivaji University, Kolhapur. The college offers B. Tech program in Mechanical, Civil, Computer Science Engineering, Electronics.

Our Management extends its fullest support in building the institution as a center of excellence with technically superior, ethically strong and competent engineers.

The serene campus vibrant with aesthetic bliss in an exhilarating convenient location, well connected by road, rail and air is easily accessible. The eco-friendly ambience creates and bestows a healthy learning atmosphere.

The institution is meticulous with modern laboratory, workshop facilities and state of art computer center providing an excellent infrastructure.



The institution has spacious library with vast collection of Books, Newspapers, National & International Journals, Magazines, Reference books, Encyclopedia, World of science, ASM hand books and course materials. E-learning through NPTEL Video course by NIT and IIT Professors are available.

The Teaching and Non-Teaching Staff of the institute is a blend of senior experienced and young dynamic faculty members devoted to the noble cause of education. Qualified, experienced, versatile and efficient faculty members mold the students diligently in ethical, moral and academic aspects.

We impart technology based experiential learning through industry visits, live projects, expert talks, MOOC's, workshops, case studies, upscale labs, and virtual classroom sessions.

Industry-Institute interaction and real-time projects nurture and craft the budding engineers to bloom and flourish in the field with the prowess guidance in the campus. The college equips the students with the latest skills which make them employable and future ready.

Due to able and proper guidance and motivation, many of our students have topped at University. Our training and placement work meticulously to improve and develop life skills to the students and tries hard to seek good jobs for our students. In addition to the academics, the students are engaged in sports and cultural activities which helps them to develop versatile personality. Various Club activities are conducted to encourage, motivate and inspire students from diverse culture to harness the talent through their perseverance.

The institute is having spacious ground and the modern facilities for both indoor and outdoor games and ultra-modern Gymnasium. Due to proper guidance and motivation, many of our students have grabbed prizes at University level and different sport events.

We are committed to stakeholders for best results and produced more than 10000+ engineers getting campus placements.



# VISION OF INSTITUTE

To be a Leading academic organization, creating skilled and Ethical Human Resources by leveraging Technical Education for Sustainable Development of Society.



# MISSION OF INSTITUTE

- To produce competent technocrats to meet modern societal and industrial challenges.
- To create ethical and skilled human resources through quality education and various extension activities and outreach programs.
- To leverage technical expertise to solve societal issues for its sustainable development.

## QUALITY POLICY

We strive for continual improvement in our performance through methodical academic monitoring, student participation and use of innovative teaching learning process with management of Intellectual Property



## **PROGRAM OUTCOMES (POs)**

**PO1: Engineering Knowledge:** Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.

**PO2: Problem Analysis:** Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4)

**PO3: Design/Development of Solutions:** Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)

**PO4: Conduct Investigations of Complex Problems:** Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8).

**PO5: Engineering Tool Usage:** Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems. (WK2 and WK6)

**PO6: The Engineer and The World:** Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7).

**PO7: Ethics:** Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)

**PO8: Individual and Collaborative Team work:** Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.

**PO9: Communication:** Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences

**PO10: Project Management and Finance:** Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.

**PO11: Life-Long Learning:** Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change. (WK8)



## STUDENTS ROLES AND RESPONSIBILITIES

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

## **Responsibilities:**

1. Punctuality, 100% Attendance & Active participation in All Academic Activities
2. Self-Discipline & good relations with other students, teaching & support staff.
3. Positive attitude, motivation and technical thinking.
4. Participation in Co-Curricular & Extra-Curricular activities.
5. Always carrying Identity Card & following the College Dress Code.
6. Pursuing all-round personality development with good generic skills.
7. Following the Code-of-Conduct by the Department, Institute & University.



# CODE-OF-CONDUCT

- Every student must carry his/her identity card while being present on the College Premises. Use of Cell phones is strictly prohibited during class/Labs hour.
- Without the permission of the Principal, Students are not allowed to circulate any printed materials within the college campus.
- Every student is expected to maintain the general cleanliness within the classrooms, laboratories and the campus in general.
- Students should handle the college properties with care. Damage to the furniture or any other materials may lead to penalty or suspension from the college.
- Intoxication or possession of narcotics and other dangerous material is strictly prohibited.
- Playing cards, spitting and loitering are strictly prohibited inside the college campus and shall invite severe punishment/disciplinary action
- Attempted or actual theft of and/or damage to property of the College, or property of a member of the College community, or other personal or public property, on or off campus will be considered as a punishable act.
- Every student will remain answerable to the college authority for his/her activity and conduct on the College Premises.
- Any act which obstructs teaching, research, administrative activity and other proceedings of the college is strictly prohibited.
- Indulging ragging, anti-institutional, anti-national, antisocial, communal, immoral or political expressions and activities within the Campus and hostel are strongly prohibited as well as punishable.
- Students are required to check the Notice Board and also website of the college for important announcements.



# LABORATORY INSTRUCTIONS

- Students must present a valid ID card before entering the lab.
- Remove your shoes/chapels/sandals outside the lab.
- Playing of games on computer in the lab is strictly prohibited.
- Before leaving the lab, students must close all programs positively and keep the desktop blank.
- Students are strictly prohibited from modifying or deleting any important files and install any software or settings in the computer without permission
- Based on the prime priority, users may be requested by the lab in-charge, to leave the workstation any time and the compliance is a must.
- Eating and/or drinking inside the lab is strictly prohibited.
- Internet facility is only for educational/ study purpose.
- Silence must be maintained in the lab at all times.
- The lab must be kept clean and tidy at all times.
- If any problem arises, please bring the same to the notice of lab in-charge.
- No bags/ hand bags/ rain coats/ casual wears will be allowed inside the lab, however notebook may be allowed.
- Lab timing will be as per the academic time table of different classes
- Each student or visitor must take mobile phones in “Switched Off” mode while entering and or working in Lab.
- Conversation, discussion, loud talking & sleeping are strictly prohibited.
- Users must turn-off the computer before leaving the computer lab.
- Maintain silence in lab.
- Computer Lab Assistants are available to assist with BASIC computer and software problems.
- Food and drink are not permitted in the lab.
- The use of cell phones is prohibited in the lab.
- Please take your calls outside. We also ask that you put your cell phone on vibrate mode.
- Unauthorized copying and/or installing of unauthorized software is not permitted
- Tampering with the hardware or software settings will not be tolerated.

# CLASSROOM INSTRUCTIONS

- Students should know and obey rules and regulations of department as well as college.
- Students strive to meet Academic Expectations
- students are expected to take all tests at the scheduled times seriously.
- Maintain discipline in the class
- A student should maintain at least 75% attendance in the Lectures of every subject and 100% overall performance. Otherwise, he or she will be debarred from the Examination.
- Latecomers will not be entertained to enter into the classroom.
- Participate in the activities organized in the Department as well as in the College.
- While discussion, students should conduct and express themselves in a way that is respectful of all persons.
- Develop positive attitudes;
- Be cooperative and considerate.
- Welcome challenges.
- Be helpful to others
- Be kind, polite, and courteous to others
- Do the assigned work on time
- Be prepared for classes with all necessary supplies.
- Be Respectful and Punctual
- Be in the best of behaviors

DEPARTMENT  
ACADEMIC PLANNER



Dr.J.J.Magdum Trust's  
Dr. J. J. Magdum College of Engineering, Jaysingpur.  
An Autonomous Institute

F.Y.B.Tech. Department

Academic Calendar (A.Y.2025-26) ,SEM-II

Sr. No.	Activity	Period
1	Commencement of Semester II	1 <sup>st</sup> week of February 2026
2	Load Distribution	5 <sup>th</sup> week of January 2025
3	Timetable	5 <sup>th</sup> week of January 2025
4	Annual sports	2 <sup>nd</sup> week of February 2026
5	Commencement of academics	1 <sup>st</sup> week of February 2026
6	First CMC meeting	4 <sup>th</sup> week of February 2026
7	Test-I	4 <sup>th</sup> week of March 2026
8	Parent meet	1 <sup>st</sup> week of April 2026
9	Second CMC meeting	4 <sup>th</sup> week of March 2026
10	3 <sup>rd</sup> CMC meeting	4 <sup>th</sup> week of April 2026
11	Field visit under IKS subject	3 <sup>rd</sup> week of April 2026
12	Test-II	1 <sup>st</sup> week of May 2026
13	Semester End	2 <sup>nd</sup> week of May 2026
14	End semester examination	4 <sup>th</sup> week of May 2026

  
Academic Coordinator

F.Y.B.Tech.

  
H.O.D.

F.Y.B.Tech.



# DEPARTMENTAL TIME TABLE



Dr.J.J.Magdum Trust's  
Dr.J.J.Magdum College of Engineering, Jaysingpur  
First Year Engineering & Technology Department

Academic Year: 2025-26  
Div: A(CSE)  
Class Teacher: Dr. U.B. Koli

Semester: II  
Classroom No.: G301  
w.e.f.: 09/03/2026

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
09.30am-10.30am	A1CHEM A2IKS	AMII	DSP	A1IKS	APM	
10.30am-11.30am	A3DSP	CC	CHEM	A2DSP A3BE	FAIL	
11.30am-11.40am	BREAK					
11.40am-12.40pm	AMII	A1DSP	FA II	AMII	A1BE	
12.40pm-01.40pm	CHEM	A2PL A3CHEM	FA II	DSP	A2CHEM A3APM	
01.40pm-02.30pm	LUNCHBREAK					
02.30pm-03.30pm	A1PL	BE	A1APM A2BE A3IKS	CHEM	AMII(T)	
03.30pm-04.30pm	A2APM A3PI	APM		IKS	BE	

Name of the Subject	Abb.	Practical Venue
Engineering Chemistry	CHEM	Chemistry Lab
Applied Mathematics-II	AM-II	Classroom G301
Applied Mechanics	APM	APM lab
Basic Electronics Engineering	BE	Design Lab
Data Structure & Programming Language	DSP	A1,A2,A3-MC A Dept.
Project Lab	PL	A1,A2,A3-G301
Indian Knowledge System	IKS	A1,A2,A3-G301
Fundamentals of Aptitude-II	FA-II	Classroom G301
Co-Curricular Course	CC	Classroom G301

Prof. R.M. Shaikh  
Timetable I/C

Dr. M.B. Bhilavade  
Head of Department




Dr.J.J.MagdumTrust's  
**Dr.J.J.MagdumCollegeofEngineering,Jaysingpur**  
**FirstYearEngineering&TechnologyDepartment**

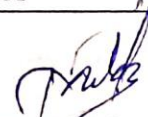
AcademicYear:2025-26  
Div:B(IT)  
ClassTeacher:Prof.P.S.Udgate

Semester:II  
ClassroomNo.:G001  
w.e.f.:09/03/2026

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
09.30am-10.30am	BE	B1APM	B1IKS	APM	FA II	
10.30am-11.30am	CHEM	B2PL B3 BE	B2BE B3CHEM	AMII	DSP	
11.30am-11.40am	BREAK					
11.40am-12.40pm	B1CHEM	CHEM	AMII	B1DSP	IKS	
12.40pm-01.40pm	B2DSP B3PL	AMII	APM	B2IKS B3APM	CHEM	
01.40pm-02.30pm	LUNCHBREAK					
02.30pm-03.30pm	AMII(T)	B1PL	CC	BE	B1BE	
03.30pm-04.30pm	FAII	B2CHEM B3DSP	DSP	FAII	B2APM B3 IKS	

NameoftheSubject	Abb.	PracticalVenue
EngineeringChemistry	CHEM	ChemistryLab
AppliedMathematics-II	AMII	ClassroomG001
AppliedMechanics	APM	APM lab
BasicElectronics Engineering	BE	DesignLab
DataStructure&Programming Language	DSP	CCFLab-Pr.B1,B3 MCA Dept.- B2
ProjectLab	PL	B1,B2,B3-G001
IndianKnowledgeSystem	IKS	B1,B2,B3-G001
FundamentalsOfAptitude-II	FA II	ClassroomG001
Co-CurricularCourse	CC	ClassroomG001

  
Prof.R.M.Shaikh  
TimetableI/C

  
Dr.M.B.Bhilavade  
Head of Department



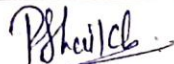
Dr.J.J.Magdum Trust's  
**Dr.J.J.Magdum College of Engineering, Jaysingpur**  
**First Year Engineering & Technology Department**

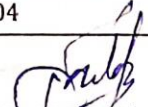
Academic Year: 2025-26  
Div: C(CSE/IT)  
Class Teacher: Prof. M.R. Naik

Semester: II  
Classroom No.: G004  
w.e.f.: 09/03/2026

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
09.30am-10.30am	AMII	C1 CHEM	BE	DSP	CHEM	
10.30am-11.30am	FAII	C2 IKS C3 PL	APM	AMI	IKS	
11.30am-11.40am	BREAK					
11.40am-12.40pm	FA II	C1 PL	C1 BE	BE	FA II	
12.40pm-01.40pm	APM	C2 APM C3 IKS	C2 CHEM C3 APM	CHEM	AMII	
01.40pm-02.30pm	LUNCH BREAK					
02.30pm-03.30pm	C1 IKS	CHEM	DSP	C1 APM	C1 DSP	
03.30pm-04.30pm	C2 BE C3 DSP	AMII(T)	CC	C2 DSP C3 BE	C2 PL C3 CHEM	

Name of the Subject	Abb.	Practical Venue
Engineering Chemistry	CHEM	Chemistry Lab
Applied Mathematics-II	AM II	Classroom G004
Applied Mechanics	APM	APM lab
Basic Electronics Engineering	BE	Design Lab
Data Structure & Programming Language	DSP	MCA Dept.-C1, CCF Lab-C2, C3
Project Lab	PL	C1, C2, C3-G004
Indian Knowledge System	IKS	C1,-G004 C2, C3-Tutorial Room
Fundamentals of Aptitude-II	FA II	Classroom G004
Co-Curricular Course	CC	Classroom G004

  
Prof. R.M. Shaikh  
Timetable I/C

  
Dr. M.B. Bhilavade  
Head of Department




Dr.J.J.MagdumTrust's  
**Dr.J.J.MagdumCollegeofEngineering,Jaysingpur**  
**FirstYearEngineering&TechnologyDepartment**

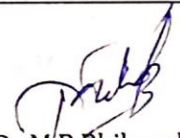
AcademicYear:2025-26  
Div:D(MECH)  
ClassTeacher:Dr.S.M.Attar

Semester:II  
ClassroomNo.:B208  
w.e.f.:09/03/2026

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
09.30am-10.30am	FA II	CHEM	D1IKS	D1APM	D1CHEM	
10.30am-11.30am	APM	IKS	D2PL D3APM	D2DSP D3CHEM	D2BE D3PL	
11.30am-11.40am	BREAK					
11.40am-12.40pm	D1BE	D1DSP	AMII	FAII	AMII	
12.40pm-01.40pm	D2APM D3DSP	D2IKS D3BE	CHEM	CHEM	FA II	
01.40pm-02.30pm	LUNCHBREAK					
02.30pm-03.30pm	AMII	APM	D1PL	AMII(T)	DSP	
03.30pm-04.30pm	BE	BE	D2CHEM D3IKS	CC	DSP	

NameoftheSubject	Abb.	PracticalVenue
EngineeringChemistry	CHEM	ChemistryLab
AppliedMathematics-II	AM II	ClassroomB208
AppliedMechanics	APM	APM lab
BasicElectronics Engineering	BE	DesignLab
Data Structure & ProgrammingLanguage	DSP	MCADept.
ProjectLab	PL	D1,D2,D3-B208
IndianKnowledgeSystem	IKS	LanguageLab
FundamentalsofAptitude-II	FA II	ClassroomB208
Co-CurricularCourse	CC	ClassroomB208

  
Prof.R.M.Shaikh  
TimetableI/C

  
Dr.M.B.Bhilavade  
Head of Department



Dr.J.J.Magdum Trust's  
**Dr.J.J.MagdumCollegeofEngineering,Jaysingpur**  
**FirstYearEngineering&TechnologyDepartment**

AcademicYear:2025-26

Div:E(CIVIL)

ClassTeacher:Prof.P.P.Kadam


Semester:II


ClassroomNo.:G303

w.e.f.:09/03/2026

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
09.30am-10.30am	PHY	DSP	E1PHY	E1CAED	PHY	
10.30am-11.30am	DSP	PHY	E2DSP E3CAED	E2PHY E3 DSP	AMII	
11.30am-11.40am	BREAK					
11.40am-12.40pm	E1DSP E2IKS E3 BEE	BEE	CAED	E1BEE	IKS	
12.40pm-01.40pm		AMII	AMII	E2PL E3 IKS	CAED	
01.40pm-02.30pm	LUNCHBREAK					
02.30pm-03.30pm	FA II	E1 PL E2CAED E3PL	BEE	FA II	E1IKS E2BEE E3PHY	
03.30pm-04.30pm	CC		FA II	AMII(T)		

NameoftheSubject	Abb.	PracticalVenue
EngineeringPhysics	PHY	Physics Lab
AppliedMathematics-II	AMII	ClassroomG302
ComputerAidedEngineering Drawing	CAED	E1-MechCADLab E2- Language Lab E3-CivilComputerlab
BasicElectricalEngineering	BEE	ElectricalLab
DataStructure&Programming Language	DSP	MCA Dept.-E2 CCF Lab- E1,E3
Project Lab	PL	ClassroomG303
IndianKnowledgeSystem	IKS	E1,E2-G303, E3-Tutorial Room
FundamentalsofAptitude-II	FA II	ClassroomG303
Co-CurricularCourse	CC	ClassroomG303

  
Prof.R.M.Shaikh  
TimetableI/C

  
Dr.M.B.Bhilavade  
Head of Department



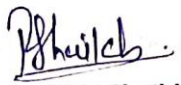
Dr.J.J.MagdumTrust's  
**Dr.J.J.MagdumCollegeofEngineering,Jaysingpur**  
**FirstYearEngineering&TechnologyDepartment**

AcademicYear:2025-26  
Div:F(ETC)  
ClassTeacher:Prof.A.A.Ainapure

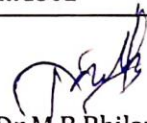
Semester:II  
ClassroomNo.:G302  
w.e.f.:09/03/2026

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
09.30am-10.30am	CAED	F1DSP F2CAED	BEE	IKS	F1CAED	
10.30am-11.30am	AMII	F3IKS	FA II	BEE	F2BEE F3DSP	
11.30am-11.40am	BREAK					
11.40am-12.40pm	PHY	AMII	F1IKS F2DSP	DSP	PHY	
12.40pm-01.40pm	FAII	PHY	F3PL	AMII	DSP	
01.40pm-02.30pm	LUNCHBREAK					
02.30pm-03.30pm	F1PL F2PHY	F1BEE F2IKS	AMII(T)	F1PHY F2PL	FA II	
03.30pm-04.30pm	F3BEE	F3PHY	CAED	F3CAED	CC	

NameoftheSubject	Abb.	PracticalVenue
EngineeringPhysics	PHY	Physics Lab
AppliedMathematics-II	AMII	ClassroomG302
ComputerAidedEngineering Drawing	CAED	CivilComputerlab
BasicElectricalEngineering	BEE	ElectricalLab
DataStructure&Programming Language	DSP	MCADept.-F1,F2 CCF Lab-F3
ProjectLab	PL	F1,F2,F3-G302
IndianKnowledgeSystem	IKS	F1-TutorialRoom,F2,F3- G302
FundamentalsOfAptitude-II	FA II	ClassroomG302
Co-CurricularCourse	CC	ClassroomG302

  
Prof.R.M.Shaikh

TimetableI/C

  
Dr.M.B.Bhilavade

Head of Department




Dr.J.J.Magdum Trust's  
**Dr.J.J.Magdum College of Engineering, Jaysingpur**  
**First Year Engineering & Technology Department**

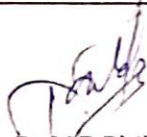
Academic Year: 2025-26  
Div: G(AIDS)  
Class Teacher: Prof. R.M. Shaikh

Semester: II  
Classroom No.: G304  
w.e.f.: 09/03/2026

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
09.30am-10.30am	G1PL G2 PHY G3CAED	DSP	FA II	G1IKS G2PL G3 BEE	IKS	
10.30am-11.30am		AMII	AMII		BEE	
11.30am-11.40am	BREAK					
11.40am-12.40pm	PH	G1PHY	PHY	BEE	G1BEE G2IKS G3PL	
12.40pm-01.40pm	CAED	G2CAED G3 DSP	DSP	FA II		
01.40pm-02.30pm	LUNCHBREAK					
02.30pm-03.30pm	G1 CAED	PHY	G1DSP	AMII	CAED	
03.30pm-04.30pm	G2DSP G3IKS	CC	G2BEE G3PHY	AMII(T)	FA II	

Name of the Subject	Abb.	Practical Venue
Engineering Physics	PHY	Physics Lab
Applied Mathematics-II	AM II	Classroom G304
Computer Aided Engineering Drawing	CAED	Civil Computer Lab
Basic Electrical Engineering	BEE	Electrical Lab
Data Structure & Programming Language	DSP	CCF Lab
Project Lab	PL	G1, G2, G3- G304
Indian Knowledge System	IKS	Language Lab
Fundamentals of Aptitude-II	FA II	Classroom G304
Co-Curricular Course	CC	Classroom G304

  
Prof. R.M. Shaikh  
Timetable/C

  
Dr. M.B. Bhilavade  
Head of Department

A decorative graphic consisting of several overlapping, semi-transparent blue and white shapes that create a layered, abstract effect. The shapes are primarily horizontal and have soft, wavy edges, giving the impression of a stylized landscape or a modern architectural element.

# STRUCTURE OF SYLLABUS

**Autonomy Syllabus Scheme  
of  
Bachelor of Technology for  
First Year (Common to All  
Branches)  
(Semester I & II) Academic  
Year 2024-25**



*Your Dream, Our Mission*

Approved by A.I.C.T.E., New Delhi | Recognized by Govt. of Maharashtra (D.T.E.) | Affiliated to Shivaji University, Kolhapur.

**NAAC 'A' Grade Institution & ISO 21001: 2018 Certified**

Gat. No. 289 (314/330), Shirol-Wadi Road, (Agarbhag), JAYSINGPUR - 416 101.

Tal. Shirol, Dist. Kolhapur (M.S.) Tel. No. (02322) 221123, Toll Free No. 1800 103 2133

■ Email : [campusdirector@jjmcoe.ac.in](mailto:campusdirector@jjmcoe.ac.in) / [principal@jjmcoe.ac.in](mailto:principal@jjmcoe.ac.in) / [registrar@jjmcoe.ac.in](mailto:registrar@jjmcoe.ac.in) ■ Website : [www.jjmcoe.ac.in](http://www.jjmcoe.ac.in)

## AUTONOMY SCHEME JJMCOE R-24

Sr. No.	Heading	Particulars
1	Title of the Course	<b>First Year of Bachelor of Technology</b>
2	Eligibility for Admission	<b>As per the Institute Examination Ordinance</b>
3	Theory Passing Marks	ESE <b>40%</b>
		CIE+ESE <b>40%</b>
4	Practical Passing Marks	CIE <b>40%</b>
		ESE <b>40%</b>
5	To be implemented from Academic Year	<b>With effect from Academic Year: 2024-2025</b>

Dr.M.B.Bhilwade  
BoS Chairperson

Prof.A.S.Sajane  
Dean-Academic

Dr. G. V. Mulgund  
Principal

## Preface

Dr. J. J. Magdum College of Engineering was established by Dr. J. J. Magdum Trust, Jaysingpur in the year 1992 with an objective to promote the cause of higher education. The institute is approved by All India Council of Technical Education (AICTE), New Delhi and Government of Maharashtra, affiliated to Shivaji University, Kolhapur. Notably, the institute has secured Autonomous status from AY 2024-25. The college offers B. Tech program in Mechanical, Civil, Computer Science Engineering, Electronics & Tele-Communication, Information Technology, Artificial Intelligence and Data Science, M. Tech program in Civil Engineering-Construction Management and Master of Computer Application.

The curriculum model is outcome based that focuses on learning by doing. Curriculum is designed to provide multiple learning opportunities for students to acquire and demonstrate competencies for rewarding careers. It ensures multiple choices to a learner acquiring skill through systematic planning. It has 7 verticals aligned to GR recommendations with strong science and mathematics foundation and program core, sequel of electives, multidisciplinary minor courses, humanities & management courses, and sufficient experiential learning through projects and semester-long industry/research internship along with employable skill-based courses. A learner gets an opportunity to acquire skills through NSDC aligned courses during summer vacations. Additional options of choosing from Honors/Double Minor/Honors with Research are also provided to a learner. The curriculum balances contact hours and total credits of the entire program. The total credits are 172, wherein focus is not only on providing knowledge but also on building skills, attitude and self-learning. Therefore, in the present curriculum, skill-based laboratories, mini-projects, multi-disciplinary projects, and internships are made mandatory across all disciplines of engineering, which will definitely facilitate self-learning of students. The overall credits and approach of curriculum proposed in the scheme and syllabus are in line with AICTE model curriculum. JJMCOE R-24 curriculum will be implemented for First Year of Engineering (All Branches) from the academic year 2024-25.

## Nomenclature

<b>Abbreviation</b>	<b>Title</b>	<b>Code</b>
BSC	Basic Science Courses	BS
ESC	Engineering Science Courses	ES
PCC	Program Core Courses	PC
PEC	Professional Elective Courses	PE
MDM	Multidisciplinary Minor	MD
OE	Open Elective	OE
SC	Skill Courses	SC
LLC	Liberal Learning Courses	--
VSEC	Vocational and Skill Enhancement Course	SE
VEC	Value Education Course	VE
AEC	Ability Enhancement Course	AE
EEMC	Entrepreneurship/Economics/Management Courses	EC
IKS	Indian Knowledge System	IK
RM	Research Methodology	RM
CEP	Community Engagement /Field Project	FP
PRO	Project	PR
OJT	Internship/On Job Training	OJ
CC	Co-curricular Courses	CC
MC	Mandatory Courses	MC
L	Lecture	L
P	Practical	P
T	Tutorial	--
T-I	Test-I	--
T-II	Test-II	--
ISE	In-Semester Evaluation	--
CIE	Continuous Internal Evaluation	--
ESE	End Semester Examination	--

## Subject Code

Sr. No.	Course Code	Course Title	Course Category
<b>Basic Science Courses</b>			
01	01FYBSL101	Applied Mathematics-I	BSC
02	01FYBSL102	Engineering Physics	BSC
03	01FYBSL103	Engineering Chemistry	BSC
04	01FYBSL121	Applied Mathematics-II	BSC
05	01FYBSP109	Engineering Physics Lab	BSC
06	01FYBSP110	Engineering Chemistry Lab	BSC
<b>Engineering Science Courses</b>			
07	01FYESL104	Basic Electrical Engineering	ESC
08	01FYESL105	Basic Electronics Engineering	ESC
09	01FYESL106	Engineering Drawing	ESC
10	01FYESL107	Applied Mechanics	ESC
11	01FYESL108	Fundamentals of Programming Languages	ESC
12	01FYESP111	Basic Electrical Engineering Lab	ESC
13	01FYESP112	Basic Electronics Engineering Lab	ESC
14	01FYESP113	Engineering Drawing Lab	ESC
15	01FYESP114	Applied Mechanics Lab	ESC
16	01FYESP115	Fundamentals of Programming Languages Lab	ESC
<b>Program Core Course</b>			
17	01FYPC122	Data Structure and Programming	PCC
18	01FYPC123	Data Structure and Programming Lab	PCC
<b>Vocational and Skill Enhancement Courses (VSEC)</b>			
19	01FYSEP117	Design Thinking and Idea Lab	VSEC
20	01FYSEP118	Project Lab	VSEC
<b>Ability Enhancement Course (AEC)</b>			
21	01FYAEP116	Professional Communication	AEC
<b>Indian Knowledge System (IKS)</b>			
22	01FYIKP124	Study of Indian Constitution & Historical Places	IKS
<b>Co-curricular - Liberal Learning courses</b>			
23	01FYCCP1XX	Co-Curricular Course* I	CC
24	01FYCCP1XX	Co-Curricular Course* II	CC
<b>Mandatory courses (Audit Courses)</b>			
25	01FYMCP119	Rural/Social Internship	MC
26	01FYMCP120	Fundamentals of Aptitude -I	MC
27	01FYMCP125	Capstone Project	MC
28	01FYMCP126	Fundamentals of Aptitude -II	MC

\*Subject to be selected from Co-curricular bucket

**Indicative List of Cocurricular courses I/II (CC):**

Sr. No	Course Code	Course Title
01	01FYCCP127	Dance
02	01FYCCP128	Fundamentals of Photography
03	01FYCCP129	Sport & Physical Fitness
04	01FYCCP130	Self-Défense for Women
05	01FYCCP131	Yoga Education
06	01FYCCP132	Art of Short Film Making / Cinematography
07	01FYCCP133	Fine/applied/visual/Performing arts
08	01FYCCP134	Basics of Fire Safety
09	01FYCCP135	Teaching Assistantship
10	01FYCCP1XX	Any other Course approved by Dean Academics & Principal

**Comparison of JJMCOE credit structure with the NEP 2020 GR recommendations:**

Dr. J J Magdum College of Engineering											
SEM	BSE	ESC	PCC	PEC	MDM	OE	VSEC	HSSM	ELC	CC	Total
I	8	9	-	-	-	-	1	2	-	2	22
II	8	6	3	-	-	-	1	2	-	2	22
Total	16	15	3	-	-	-	2	4	-	4	44
%	36.36	34.09	6.82	-	-	-	4.55	9.09	-	9.09	100
GR (NEP 2020) Recommended											
Total	18	16	2	-	-	-	4	4	-	4	48
%	37.50	33.33	4.17	-	-	-	8.33	8.33	-	8.33	100

**Note:**

Students can earn the certificates based on his/her exit from the program as follows:

- After a one-year (4 credits to be earned) and 8-week summer workshop: Certificate in Engineering.



**Teaching and Evaluation Scheme for Academic Year 2024-25**  
**Common to all UG Programs**  
**First Year B. Tech. (Semester – I) NCrF Level: 4.5 w.e.f. 2024-25**

Sr. No.	Course Code	Course Title	Course Category	Teaching scheme				Course Credits	Evaluation scheme							
									Theory				Practical		TOTAL	
									CIE			ESE	CIE	ESE		
				L	T	P	Contact Hrs/wk		T-I	T-II	ISE	ESE	CIE	ESE		
1	01FYBSL101	Applied Mathematics-I	BSC	3	1	---	4	4	20	20	10	50	---	---	100	
2	01FYBSL102/ 01FYBSL103	Engineering Physics / Engineering Chemistry	BSC	3	--	---	3	3	20	20	10	50	---	---	100	
3	01FYESL104/ 01FYESL105	Basic Electrical Engineering/ Basic Electronics Engineering	ESC	2	---	---	2	2	20	20	10	50	---	---	100	
4	01FYESL106/ 01FYESL107	Computer Aided Engineering Drawing /Applied Mechanics	ESC	2	---	---	2	2	20	20	10	50	---	---	100	
5	01FYESL108	Fundamentals of Programming Languages	ESC	2	---	---	2	2	20	20	10	50			100	
6	01FYBSP109/ 01FYBSP110	Engineering Physics Lab/ Engineering Chemistry Lab	BSC	---	---	2	2	1	---	---	---	---	50	---	50	
7	01FYESP111/ 01FYESP112	Basic Electrical Engineering Lab / Basic Electronics Engineering Lab	ESC	---	---	2	2	1	---	---			50	---	50	
8	01FYESP113/ 01FYESP114	Computer Aided Engineering Drawing Lab /Applied Mechanics Lab	ESC	---	---	2	2	1	---	---			50	---	50	
9	01FYESP115	Fundamentals of Programming Languages Lab	ESC	---	---	2	2	1					50	--	50	
10	01FYAEP116	Professional Communication	AEC	1	---	2	3	2	---	---			50	---	50	
11	01FYSEP117 / 01FYSEP118	Design Thinking and Idea Lab / Project Lab	VSEC	--	---	2	2	1	---	---			50	---	50	
12	01FYCCP1XX	Co-Curricular Course-I	CC	--	---	--	--	2	---	---	---	---	50	---	50	
<b>Total</b>				<b>13</b>	<b>01</b>	<b>12</b>	<b>26</b>	<b>22</b>	<b>100</b>	<b>100</b>	<b>50</b>	<b>200</b>	<b>350</b>	<b>0</b>	<b>850</b>	
<b>Mandatory Courses (Audit Courses)</b>																
13	01FYMCP119	Rural/Social Internship	MC	--	--	--	--	--	--	--	--	--	50	--	--	
14	01FYMCP120	Fundamentals of Aptitude -I	MC	2	--	--	2	--	--	--	--	--	50	--	--	
Course Category	BSC	ESC	PCC	PEC	MDM	OE	VSEC	AEC	Entrp/Mgmt	IKS	VEC	RM	CEP/FP	Proj	Int /OJT	CC
Credits	08	09	--	--	--	--	01	02	--	--	--	--	--	--	--	02
Cumulative Sum	08	09	--	--	--	--	01	02	--	--	--	--	--	--	--	02

**Progressive Credits: 22**



**Teaching and Evaluation Scheme for Academic Year 2024-25**

**Common to all UG Programs**

**First Year B. Tech. (Semester – II) NCrF Level: 4.5 w.e.f. 2024-25**

Sr. No.	Course Code	Course Title	Course Category	Teaching scheme				Course Credits	Evaluation scheme							
									Theory				Practical		TOTAL	
									CIE			ESE	CIE	ESE		
				L	T	P	Contact Hrs/wk		T-I	T-II	ISE					
1	01FYBSL121	Applied Mathematics-II	BSC	3	1	---	4	4	20	20	10	50	---	---	100	
2	01FYBSL103/ 01FYBSL102	Engineering Chemistry / Engineering Physics	BSC	3	--	---	3	3	20	20	10	50	---	---	100	
3	01FYESL105/ 01FYESL104	Basic Electronics Engineering/ Basic Electrical Engineering	ESC	2	---	---	2	2	20	20	10	50	---	---	100	
4	01FYESL107/ 01FYESL106	Applied Mechanics / Computer Aided Engineering Drawing	ESC	2	---	---	2	2	20	20	10	50	---	---	100	
5	01FYPCP122	Data Structure and Programming	PCC	2	---	---	2	2	20	20	10	50			100	
6	01FYBSP110/ 01FYBSP109	Engineering Chemistry Lab/ Engineering Physics Lab	BSC	---	---	2	2	1	---	---	---	---	50	---	50	
7	01FYESP112/ 01FYESP111	Basic Electronics Engineering Lab/ Basic Electrical Engineering Lab	ESC	---	---	2	2	1	---	---	---	---	50	---	50	
8	01FYESP114/ 01FYESP113	Applied Mechanics Lab /Computer Aided Engineering Drawing Lab	ESC	---	---	2	2	1	---	---	---	---	50	---	50	
9	01FYPCP123	Data Structure and Programming Lab	PCC	---	---	2	2	1					50	---	50	
10	01FYIKP124	Study of Indian Constitution & Historical Places	IKS	1	---	2	3	2	---	---	---	---	50	---	50	
11	01FYSEP118/ 01FYSEP117	Project Lab /Design Thinking and Idea Lab	VSEC	--	---	2	2	1	---	---	---	---	50	---	50	
12	01FYCCP1X X	Co-Curricular Course-II	CC	--	---	--	--	2	---	---	---	---	50	---	50	
<b>Total</b>				<b>13</b>	<b>01</b>	<b>12</b>	<b>26</b>	<b>22</b>	<b>100</b>	<b>100</b>	<b>50</b>	<b>200</b>	<b>350</b>	<b>0</b>	<b>850</b>	
<b>Mandatory Courses (Audit Courses)</b>																
13	01FYYP125	Capstone Project	MC	--	--	--	--	--	--	--	--	--	50	--	--	
14	01FYYP126	Fundamentals of Aptitude -II	MC	2	--	--	2	--	--	--	--	--	50	--	--	
Course Category	BSC	ESC	PCC	PEC	MDM	OE	VSEC	AEC	Entrp/Mgmt	IKS	VEC	RM	CEP/FP	Proj	Int /OJT	CC
ast Cum. Sum	08	09	--	--	--	--	01	02	--	--	--	--	--	--	--	02
Credits	08	06	03	--	--	--	01	--	--	02	--	--	--	--	--	02

**Progressive Total Credits: 22 + 22 = 44**

## First Year B. Tech Semester – I

Course Code: 01FYBSL101

Course Title: Applied Mathematics - I

Teaching Scheme	Credits	Evaluation Scheme		Examination scheme		
		Name of the exam	Marks	Name of the exam	Marks	Duration
Lectures: 03 Hrs./week	3	T-I	20	T-I	20	1.0hour
		T-II	20	T-II	20	1.0hour
		ISE	10	ESE	70	2.5hours
		ESE	50			

### Course Objectives

The course objectives are

- To train the students to solve problems on chapters like partial differentiation, Matrices and its applications to solve simultaneous equations, Algebraic and Transcendental equations complex numbers, expansions of functions, indeterminate forms.
- To use knowledge of chapters of the course to solve engineering problems

### Course Outcomes

At the end of successful completion of course, the students will be able to—

**CO1. Identify, Formulate and Apply** knowledge of mathematics to solve Engg. Problems ( $K^2, K^3, K^6$ )

**CO2. Solve** problems on partial differentiation, Eigen Values and Eigen vectors, complex numbers, expansions of functions, indeterminate forms ( $K^3$ )

**CO3. Understand** matrices and **apply** such knowledge to solve linear system of equation, numerical solutions of Algebraic and Transcendental equations. ( $K^2, K^3$ )

### Course Contents

<b>Unit I</b>	<b>Matrices and Solution of Linear System of Equations</b>	<b>06hrs</b>
	Rank of matrix: definition, normal form and echelon form System of linear non-homogeneous equations System of linear homogeneous equations	
<b>Unit II</b>	<b>Eigen Values and Eigen vectors</b>	<b>06hrs</b>
	Eigen Values and its Properties Eigen vectors and its properties Cayley-Hamilton's theorem (Without proof)	
<b>Unit III</b>	<b>Complex Numbers</b>	<b>06hrs</b>
	De Moivre's Theorem (Without proof) Roots of complex numbers by using De Moivre's Theorem Expansion of $\sin n\theta$ and $\cos n\theta$ in powers of $\sin\theta$ and /or $\cos\theta$ . Circular functions of a complex variable - definitions Hyperbolic and Inverse Hyperbolic Functions- definitions.	
<b>Unit IV</b>	<b>Expansion of Functions and Indeterminate forms</b>	<b>06hrs</b>
	Expansion of Functions by using Taylor's theorem. Expansion in powers of h, Expansion in powers of x Expansion in powers of (x-a) Indeterminate forms and L' Hospital's rule. Form $0/0, \infty/\infty, \infty - \infty, 0 \cdot \infty$ Exponential form; $0^0, 1^\infty, \infty^0, 0^\infty$	

<b>Unit V</b>	<b>Numerical Solutions of Algebraic and Transcendental Equations</b>	<b>06hrs</b>
	Bisection Method, Secant Method, Newton Raphson Method	
<b>Unit VI</b>	<b>Partial Differentiation</b>	<b>06hrs</b>
	Introduction Total derivatives Differentiation of implicit function Euler's theorem on homogeneous function of two variables Maxima and Minima of functions of two variables	
<b>Text Books:</b>		
<ol style="list-style-type: none"> <li>1. A text book of Applied Mathematics, Vol.I, P. N. Wartikar &amp; J. N. Wartikar Pune Vidyarthi Griha Prakashan, Pune ,7<sup>th</sup> edition 2012</li> <li>2. Higher Engineering Mathematics Dr. B. S. Grewal Khanna Publishers, Delhi. 42<sup>nd</sup> edition 2012</li> </ol>		
<b>Reference Books:</b>		
<ol style="list-style-type: none"> <li>1. A text book of Engineering Mathematics N. P. Bali, Iyengar Laxmi Publications (P) Ltd., New Delhi. 7<sup>th</sup> edition 2008</li> <li>2. Advanced Engineering Mathematics Erwin Kreyszig Wiley India Pvt. Ltd 9<sup>th</sup> edition 2012</li> </ol>		
<b>Supplementary Reading:</b> Derivative, Integration.		
<b>List of Tutorials:</b>		
<ol style="list-style-type: none"> <li>1. Rank of a Matrices</li> <li>2. Solution of linear homogeneous and non-homogeneous equations</li> <li>3. Eigen Values</li> <li>4. Eigen vectors</li> <li>5. Complex Numbers</li> <li>6. Expansion of Functions and Indeterminate forms</li> <li>7. Numerical Solutions of Algebraic and Transcendental Equations</li> <li>8. Partial Differentiation</li> </ol>		

**First Year B. Tech Semester – I/II**

**Course Code: 01FYBSL102**

**Course Title: Engineering Physics**

Teaching Scheme		Credits	Evaluation Scheme		Examination scheme		
Lectures	3Hrs./week	3	Name of the exam	Marks	Name of the exam	Marks	Duration
			TI	20			
			TII	20	T-I	20	1.0 hour
			ISE	10	T-II	20	1.0 hour
			ESE	50	ESE	70	2.5 hours

**Course Objectives**

1. Provide the knowledge of fundamental concepts of physics useful in all Engineering disciplines.
2. To introduce new areas of Physics like LASER, Nanomaterial and their engineering applications

**Course Outcomes**

At the end of the Course, Student will be able to,

**CO1. State** & define various terms, laws etc. of Applied Physics. Draws diagrams, gives names to various parts of figure. Writes formulae. (K<sup>1</sup>).

**CO2. Explain**- various terms, concepts, phenomena of Engineering Physics. Explain applications and properties of some emerging fields of Applied Physics like LASER, Nanomaterial etc. Derive different formulae. (K<sup>2</sup>).

**CO3.** Using formula, **solves** problems on: grating, Sabine's formula, crystal Physics and quantum mechanics. Draw diagrams of crystal planes if Miller indices are known. (K<sup>5</sup>).

**Course Contents**

<b>Unit I</b>	<b>Optics</b>	<b>07hrs</b>
<p><b>Diffraction:</b> -Concept and types (Fresnel and Fraunhofer diffraction), Diffraction grating construction and theory of plane transmission grating, resolving power of grating, use of grating to determine wavelength of spectral lines.</p> <p><b>Polarization:</b> -Basic terms: Polarised &amp; unpolarised light, optic axis of a crystal, principal plane, principal section, isotropic &amp; anisotropic media, double refraction, Huygens' theory of double refraction, positive and negative crystals.</p>		
<b>Unit II</b>	<b>LASER</b>	<b>07hrs</b>
<p>Absorption, spontaneous emission, stimulated emission, active medium &amp; active centre, conditions of light amplification, population inversion, pumping techniques, Ruby laser, characteristics of laser, Holography (construction and reconstruction of hologram), applications of LASER</p>		
<b>Unit III</b>	<b>Acoustics Of Buildings</b>	<b>05hrs</b>
<p>Conditions for good acoustics, Reverberation, Reverberation time, Sabine's formula for reverberation time (no derivation), Factors affecting architectural acoustics and their remedy.</p>		

<b>Unit IV</b>	<b>Crystallography</b>	<b>07hrs</b>
Space Lattice, Basis and Crystal structure, Unit cell, Seven crystal systems & Bravais's lattices, number of atoms per unit cell, atomic radius, relation between density and lattice constant, Miller indices-procedure, features and sketches for different planes, symmetry elements of cubic crystal, Bragg's law for X-ray diffraction, Bragg's X-ray spectrometer.		
<b>Unit V</b>	<b>Physics of Nano material</b>	<b>06hrs</b>
Nanomaterial, Nano science and Nano technology, production techniques (Top down and bottom up), Ball milling and Colloidal technique for synthesis of Nano particles, Tools- Scanning Tunnelling Microscope and Atomic Force Microscope, properties and applications of nano-materials		
<b>Unit VI</b>	<b>Quantum Mechanics</b>	<b>07hrs</b>
Wave-particle duality of light, dual nature of matter (De-Broglie's concept of matter waves) Wavelength of matter wave in terms of K.E. and P.D., Properties of matter waves, Compton Effect-Statement, explanation, experimental arrangement to study Compton effect, formula for Compton shift (no derivation).		
<b>Text books:</b>		
<ol style="list-style-type: none"> <li>1) Engineering Physics- M.N.Awadhanulu, P.G.Kshirsagar S.Chand &amp; company</li> <li>2) Engineering Physics- B.K.Pandey , S.Chaturvedi Dhanpat Rai Publications</li> </ol>		
<b>Reference Books:</b>		
<ol style="list-style-type: none"> <li>1) Optics – N.Subrahmanyam Brijlal. S.Chand &amp; Company</li> <li>2) Engg. Physics- R.K.Gaur, S.L. Gupta Dhanpat Rai Publishers, 2012.</li> <li>3) Modern Physics- B.L.Theraja S.Chand &amp; Company Ltd., New Delhi</li> </ol>		

## First Year B. Tech Semester – I/II

**Course Code: 01FYBSL103**

**Course Title: Engineering Chemistry**

Teaching Scheme		Credits	Evaluation Scheme		Examination scheme		
Lectures	3Hrs./week	3	Name of the exam	Marks	Name of the exam	Marks	Duration
			TI	20	T-I	20	1.0 hour
			TII	20	T-II	20	1.0 hour
			ISE	10	ESE	70	2.5 hours
			ESE	50			

### Course Objectives: -

1. Students will apply their scientific knowledge related to Chemistry.
2. Students will operate modern analytical instruments.
3. To produce graduates with mathematical knowledge, computational skills and the ability to deploy these skills effectively in the solution of problems, principally in the area of engineering.

### Course Outcomes:-

At the end of successful completion of course, the students should be able to

**CO1.Integrate** pure Chemistry principles & fundamentals with engineering applications. (K<sup>3</sup>).

**CO2.Explains** the Chemistry behind the development of engineering materials. (K<sup>2</sup>).

**CO3.Analytical** ability of students for solving simple numerical problems in Engineering Chemistry. (K<sup>4</sup>).

### Course Content

<b>Unit I</b>	<b>Chemistry of Metallic and Composite Materials</b>	<b>6 hrs</b>
<p><b>Metallic materials:</b> Introduction, Alloy- definition and classification, purposes of making alloys. Ferrous alloys: Plain carbon steels (mild, medium and high), stainless steels. Nonferrous alloys: Copper alloy (Brass), Nickel alloy (Nichrome), Aluminium alloy (Duralumin and Alnico).</p> <p><b>Composite materials:</b> Introduction, Composition, properties and uses of Fiber reinforced Plastics (FRP) and glass reinforced plastic (GRP).</p>		
<b>Unit II</b>	<b>Instrumental methods of chemical analysis</b>	<b>6 hrs</b>
<p>Introduction, advantages and disadvantages of instrumental methods</p> <p><b>Spectrometry:</b> Introduction, Laws of spectrometry (Lamberts and Beer-Lambert's law), Single beam spectrophotometer (schematic, working and applications).</p> <p><b>Chromatography:</b> Introduction, types, gas-liquid chromatography (GLC), basic principle, instrumentation and applications.</p>		
<b>Unit III</b>	<b>Water</b>	<b>6 hrs</b>
<p>Introduction, impurities in natural water, water quality parameters total solids, acidity, alkalinity, chlorides, and dissolved oxygen (definition, causes, significance), hardness of water types of hardness, units of hardness, ill effects of hard water in steam generation in boilers (scale &amp; sludge formation), numerical on hardness, treatment of hard water (ion exchange and reverse osmosis).</p>		

<b>Unit IV</b>	<b>Fuels</b>	<b>6 hrs</b>
Introduction, classification, calorific value, definition, units (calorie, kcal, joules, kilojoules), characteristics of good fuels, comparison between solid, liquid and gaseous fuels, types of calorific value (higher and lower), Bomb calorimeter and Boy's calorimeter. Numerical problems on Bomb and Boy's calorimeter.		
<b>Unit V</b>	<b>Corrosion</b>	<b>6 hrs</b>
Introduction, causes, classification, atmospheric corrosion (oxidation corrosion), electrochemical corrosion (hydrogen evolution and oxygen absorption mechanism), factors affecting rate of corrosion. Prevention of corrosion by proper design and material selection, cathodic protection, Protective coatings-hot dipping (galvanizing and tinning,), electroplating.		
<b>Unit VI</b>	<b>Polymer</b>	<b>6 hrs</b>
Polymers and Polymerization. Types of polymerizations (addition and condensation). Plastics, types (thermo softening and thermosetting plastics), properties and applications of polythene, polystyrene, Bakelite, urea formaldehyde plastics, epoxy resin.		
<b>Reference Books: -</b>		
<ol style="list-style-type: none"> <li>1) Engineering Chemistry by Jain and Jain, Dhanpat Rai Publishing Company Ltd., New Delhi.</li> <li>2) A Textbook of Engineering Chemistry by S. S. Dara and S. S. Umare, S. Chand &amp; Company Ltd., New Delhi.</li> <li>3) A Textbook of Engineering Chemistry by C. P. Murthy, C. V. Agarwal and A. Naidu, BS Publications, Hyderabad.</li> <li>4) Chatwal and Anand, Instrumental Methods of Chemical Analysis, Himalaya Publishing House, New Delhi.</li> <li>5) Engineering Chemistry by Dr. A. K. Pahari and Dr. B. S. Chauhan, Laxmi Publications (P) Ltd, New Delhi.</li> <li>6) A text Book of Engineering Chemistry by ShashiChawla, DhanpatRai &amp; Co. (Pvt.) Ltd, Delhi.</li> <li>7) Engineering Chemistry by Wiley India.</li> <li>8) Engineering Chemistry by Renu Bapna and Renu Gupta, MacMillan Publishers (India) Ltd, Delhi.</li> </ol>		

**First Year B. Tech Semester – I/II**

**Course Code: 01FYESL104**

**Course Title: Basic Electrical Engineering**

Teaching Scheme		Credits	Evaluation Scheme		Examination scheme		
Lectures	2Hrs./ week	2	Name of the exam	Marks	Name of the exam	Marks	Duration
			TI	20			
			TII	20	T-I	20	1.0 hour
			ISE	10	T-II	20	1.0 hour
			ESE	50	ESE	70	2.5 hours

**Course Objectives**

1. To learn basic concepts involved in electrical & magnetic circuits.
2. To understand concepts of elements & parameters in single phase and three phase AC circuits.
3. To understand working and importance of electrical transformer.

**Course Outcomes**

At the end of the Course, Student will be able to

**CO1. Define** various laws & concepts of basic electrical engineering (K<sup>1</sup>).

**CO2. Solve** Numerical on mesh, nodal analysis, 1Phase AC, Transformers (K<sup>3</sup>).

**CO3. Analyze** the behavior of resistance, inductance and capacitance with respect to AC supply (K<sup>4</sup>).

**CO4. Explain** the knowledge of Transformer (K<sup>2</sup>).

**Course Contents**

<b>Unit I</b>	<b>D.C. Circuits</b>	<b>08 Hrs</b>
Concept of E.M.F, Potential Difference, Current, Resistance, Ohm’s Law Kirchhoff’s laws, mesh and node analysis		
<b>Unit II</b>	<b>Magnetic Circuits</b>	<b>04 Hrs</b>
Concept of mmf, reluctance, magnetic flux, Magnetic Flux density, Magnetic field strength, BH curve, magnetic leakage, fringing, Comparison of Electric and Magnetic circuit, series magnetic circuits.		
<b>Unit III</b>	<b>Single Phase A.C. Circuits</b>	<b>08 Hrs</b>
Introduction to A.C. supply, advantages A.C. supply, Faraday’s Laws, Lenz’s Law, types of emfs, generation of sinusoidal voltage, R.M.S. & Average value, form factor, peak factor, phasor representation of A.C. quantities, impedance, R-L, R-C, R-L-C series circuits, powers, power factor and its improvement by capacitor method.		
<b>Unit IV</b>	<b>Three Phase A.C. Circuits</b>	<b>04 Hrs</b>
Advantages of 3 phase system, Generation of 3 phase AC supply, balanced 3 Phase load, relation between line and phase quantities for star connected circuit and delta connected circuit.		
<b>Unit V</b>	<b>Single phase Transformer</b>	<b>06 Hrs</b>
Construction, operating principle, Types, emf equation, Ratios of voltage and current, operation on no load and with load, power losses, efficiency, voltage regulation, applications. Numericals		

**Text Book:**

1. Basic Electrical Engineering by U.A. Bakshi, Technical Publications, Pune.
2. Electrical Technology by U.A. Bakshi, Technical Publications, Pune.

**Reference Books:**

1. P.V.Prasad and S.Shivan Raju – Electrical Engineering concepts and Applications – Cengage learning.
2. B.L.Theraja – Electrical Technology vol.1. – S.Chand.
3. B.L.Theraja – Electrical Technology vol.2. – S.Chand.
4. NagrathI.J. and D.P.kothari – Basic Electrical Engineering (2001) – Tata McGraw Hill.
5. Bharati Dwivedi and AnurasgTripathi – Fundamentals of Electrical Engineering – Willey Precise

**Supplementary Reading:**

1. <https://www.schandpublishing.com/books/tech-professional/electrical-engineering-electronics/abc-electrical-engineering/9788121939096/>
2. MOOC / NPTEL/YouTube Links: <https://nptel.ac.in/courses/108105112>

## First Year B. Tech Semester – I/II

**Course Code: 01FYESL105**

**Course Title: Basic Electronics Engineering**

Teaching Scheme		Credits	Evaluation Scheme		Examination scheme		
Lectures	2Hrs./week	2	Name of the exam	Marks	Name of the exam	Marks	Duration
			TI	20			
			TII	20	T-I	20	1.0 hour
			ISE	10	T-II	20	1.0 hour
			ESE	50	ESE	70	2.5 hours

**Course Objectives:-**

1. Study of basics of Semiconductor Devices and Applications
2. Study of basics of Number Systems and binary codes
3. Study of basics of Digital circuits and reduction Techniques
4. Study and design of combinational circuits.
5. Study and design of sequential circuits
6. Study of Logic Families.

**Course Outcomes: -**

At the end of the Course, Student will be able to

**CO1. Understand** different semiconductor devices and their application (K<sup>2</sup>).

**CO2. Perform** various logical and arithmetic operations on various number systems as well as conversion of one representation to another. (K<sup>3</sup>).

**CO3. Apply** Boolean algebra for the implementation and minimization of logic functions(K<sup>3</sup>).

**CO4. Analyze,** Design and Implement combinational and sequential logic circuits(K<sup>4</sup>).

**CO5. Differentiate** between logic families TTL and CMOS(K<sup>5</sup>).

### Course Contents

<b>Unit I</b>	<b>Semiconductor Devices and Applications:</b>	<b>05 hrs</b>
Semiconductor Diode, Half wave, Full wave, Bridge rectifier, CE configuration, CE as an amplifier. Load Line, Operating Point, Leakage Currents, Saturation and Cut off Mode of Operations.		
<b>Unit II</b>	<b>Number Systems and Codes:</b>	<b>04 hrs</b>
Decimal number system, Binary number system, Octal number system, Hexadecimal number system Binary Codes: Binary Coded Decimal, Octal Code, Hexadecimal Code and their conversions.		
<b>Unit III</b>	<b>Logic Gates and Boolean Algebra:</b>	<b>04 hrs</b>
Digital logic gates, Realization using NAND, NOR gates, Boolean Laws and Expression using Logic Gates, Realization of different gates using Universal gates, De-Morgan's Theorem, Duality Theorems.		

<b>Unit IV</b>	<b>Combinational Logic Circuits:</b>	<b>04 hrs</b>
<b>Arithmetic Circuits:</b> Adders/ Subtractor: Half adder, Full adder, Half Subtractor, Full Subtractor <b>Multiplexer and De-multiplexer:</b> Multiplexer, Boolean Function implementation using single multiplexer and basic gates, De-multiplexer.		
<b>Unit V</b>	<b>Sequential Logic Principles:</b>	<b>04 hrs</b>
<b>Latches and Flip flops:</b> Difference between latches and flip flops, RS, JK, Master slave flip flops, Conversion of flip flops		
<b>Unit VI</b>	<b>Logic Families and Semiconductor Memories:</b>	<b>05 hrs</b>
TTL NAND gate, Specifications, Noise margin, Propagation delay, fan-in, fan-out, Tristate TTL, ECL, CMOS families, Concept of Programmable logic devices like FPGA.		
<b>Text Books</b>		
<ol style="list-style-type: none"> <li>1. Digital Design by “Morris Mano”</li> <li>2. Digital Logic Design By “Anand Kumar”.</li> <li>3. R. P. Jain, Modern Digital Electronics, Tata McGraw Hill Education, Third Edition 2003.</li> <li>4. Electronic Devices and Circuits Millman &amp; Halkias    Tata McGraw Hill</li> <li>5. Principles of Electronics    V.K. Mehta    S Chand &amp; Co Ltd</li> </ol>		
<b>Reference Books</b>		
<ol style="list-style-type: none"> <li>1. Willim I. Fletcher. 'An Engineering Approach to Digital Design'—PHI/ Pearson</li> <li>2. Norman Balabanian, Bradle Carlson. 'Digital Logic Design Principals,' Wiley Publication</li> <li>3. Rajkamal 'Digital Systems Principals and Design'—Pearson</li> <li>4. A.P. Malvino, D.P. Leach 'Digital Principles &amp; Applications' -VIth Edition-Tata McGraw Hill, Publication</li> <li>5. John F. Warkerly, Digital Design Principles and Practices, Pearson Education, Fourth Edition, 2008.</li> </ol>		

## First Year B. Tech- Semester – I/II

Course Code: 01FYESL106

Course Title: Computer Aided Engineering Drawing

Teaching Scheme	Credits	Evaluation Scheme		Examination scheme		
Lectures: 02 Hrs./week	2	Name of the exam	Marks	Name of the exam	Marks	Duration
		T-I	20			
		T-II	20	T-I	20	1.0hour
		ISE	10	T-II	20	1.0hour
		ESE	50	ESE	50	2.5hours

### Course Objectives

The course objectives are to cultivate students' ability to conceptualize physical objects and effectively translate them onto paper for communication in engineering contexts. It focuses on enhancing manual drawing skills, honing drawing interpretation abilities, and fostering a practical understanding of object dimensions. Additionally, the course seeks to introduce students to essential drawing and design software tools for a well-rounded skill set.

### Course Outcomes

At the end of successful completion of course, the students will be able to--

**CO1. Explain** the fundamentals of Engineering Graphics and apply the knowledge of Projections, Methods to prepare the drawings for lines (K<sup>2</sup>)

**CO2. Explain** the commands in AutoCAD to draw and modify the lines to prepare the drawings. (K<sup>2</sup>)

**CO3. Apply** the types of Projections, Methods to prepare the drawings for planes (K<sup>3</sup>)

**CO4. Apply** the concept of orthographic projection of an object to draw several 2D views for visualizing the physical state of the object (K<sup>3</sup>)

**CO5. Apply** the basic knowledge of Engineering practices to draw building sections, circuit diagrams, distribution systems of wiring, sections of machine parts (K<sup>3</sup>)

### Course Contents

<b>Unit I</b>	<b>Fundamentals of Engineering Drawing</b>	<b>06 hrs.</b>
	Introduction to drawing instruments and their uses, drawing sheets sizes and their layouts, Types of Lines, BIS conventions and standards, Dimensioning methods, General rules of dimensioning.	
<b>Unit II</b>	<b>Introduction to computer aided Drawing</b>	<b>06 hrs.</b>
	Computer Screen, Layout of Software, Commands and Creation of Line (Line and modify commands), Coordinate System (UCS), Reference Planes, HP, VP, RPP, LPP Of 2d Environment, Scale,	
<b>Unit III</b>	<b>Projection of planes</b>	<b>06 hrs.</b>
	Introduction, Projection of plane when plane is Parallel to one and perpendicular to other, Projection of plane when plane is inclined to one plane and perpendicular to other Projections of planes when it is inclined to both reference planes.	
<b>Unit IV</b>	<b>Orthographic Projection</b>	<b>06 hrs.</b>
	Introduction, Principle of projection, Plane of Projection, Method of Projection, Orthographic Projection First and Third angle method of projection, Hidden features, curved features, circular features. etc. Typical problems by first angle projection method	

<b>Unit V</b>	<b>Multidisciplinary Applications and Practice</b>	<b>06 hrs.</b>
	Basic building drawing- floor plan, cross section of wall, steel structures and trusses using AutoCAD Electric wiring and lighting Diagram- Automatic fire alarm, call bell system, UPS system, basic power distribution system Drawing simple mechanism- gear trains, bicycles, tricycles, two-wheeler cart, four-wheeler cart Electronics engineering drawing- Simple electronic design drawing (Layer Concept)	
<b>Text Books:</b> <ol style="list-style-type: none"> <li>1. Bhatt, N. D. and Panchal, V. M., (2016), "Engineering Drawing", Charotar Publication, Anand, India</li> <li>2. K. Venugopal, K, (2015), "Engineering and Graphics", New Age International, New Delhi</li> <li>3. Jolhe, D. A., (2015), "Engineering Drawing with introduction to AutoCAD", Tata McGraw Hill, New Delhi</li> <li>4. Rathnam, K., (2018), "A First Course in Engineering Drawing", Springer Nature Singapore Pte. Ltd., Singapore</li> </ol>		
<b>Reference Books:</b> <ol style="list-style-type: none"> <li>1. Madsen, D. P. and Madsen, D. A., (2016), "Engineering Drawing and design", Delmar Publishers Inc., USA</li> <li>2. Bhatt, N. D., (2018), "Machine Drawing", Charotar Publishing House, Anand, India</li> <li>3. Dhawan, R. K., (2000), "A Textbook of Engineering Drawing", S. Chand, New Delhi</li> <li>4. Luzadder, W. J. and Duff, J. M., (1992), "The Fundamentals of Engineering Drawing: With an Introduction to Interactive Computer Graphics for Design and Production", Peachpit Press, USA</li> <li>5. Giesecke, F. E., Mitchell, A., Spencer, H. C., Hill, I. L., Loving, R. O., Dygon, J. T., (1990), "Principles of engineering graphics", McMillan Publishing, USA</li> </ol>		

**First Year B. Tech- Semester – I/II**

**Course Code: 01FYESL107**

**Course Title: Applied Mechanics**

Teaching Scheme	Credits	Evaluation Scheme		Examination scheme		
		Name of the exam	Marks	Name of the exam	Marks	Duration
Lectures: 02Hrs./week	2	T-I	20	T-I	20	1.0hour
		T-II	20	T-II	20	1.0hour
		ISE	10	ESE	50	2.5hours
		ESE	50			

**Course Objectives**

The objective of this course is to make students to learn basics of engineering Mechanics concepts and its application to the real-world problems, solve problems involving Forces, loads and Moments and know their applications in allied subjects.

**Course Outcomes**

At the end of successful completion of course, the students will be able to--

**CO1. Understand** basic concept of force System and free body diagram (K<sup>2</sup>)

**CO2. Apply** concept of static equilibrium in two-dimension force system (K<sup>3</sup>)

**CO3. Locate** Centroid and Calculate Moment of Inertia of composite areas (K<sup>2</sup>)

**CO4. Apply** Newton’s second law, work energy and impulse momentum principles for particles (K<sup>3</sup>)

**CO5. Understand** the phenomenon of Impact and behavior after impact (K<sup>2</sup>)

**Course Contents**

<b>Unit I</b>	<b>Force System</b>	<b>06hrs</b>
	Introduction, fundamental concepts and principle, force system, resolution and composition of forces, Varignon's theorem, resultant of coplanar & non coplanar force system, moment of a force & couple	
<b>Unit II</b>	<b>Equilibrium</b>	<b>06hrs</b>
	Introduction, free body diagram, equilibrium of coplanar forces, equilibrium of two forces, three force principle, equilibrium of concurrent, parallel and general force system, type of load, type of support, type of beam and support reaction.	
<b>Unit III</b>	<b>Centroid and Moment of Inertia</b>	<b>06hrs</b>
	Introduction-centroid of basic figures, centroid of composite figure, moment of inertia of simple geometrical figure, parallel axis theorem, perpendicular axis theorem, moment of inertia of composite figure.	
<b>Unit IV</b>	<b>Kinetics of particle</b>	<b>06hrs</b>
	Introduction to Kinematics and Kinetics, equation of motion, work energy principle, impulse momentum principle, D'Alembert's principle	
<b>Unit V</b>	<b>Impact and Collision of bodies</b>	<b>06hrs</b>
	Impact, Types of Impact, Laws of Conservation of Momentum, Coefficient of Restitution, Numerical on Direct Central Impact.	

**Text Book**

1. Engineering Mechanics, Ferdinand Singer, 3rd edition, Harper and Row
2. Engineering Mechanics (Statics and Dynamics) by Hibbeler R. C., Pearson Education

**Reference Books**

1. Engineering Mechanics, S Timoshanko and Young, Tata McGraw Hill Education Pvt. Ltd. New Delhi.
2. Vector Mechanics for Engineers – Statics, Beer and Johnston, Tata McGraw Hill
3. Vector Mechanics for Engineers – Dynamics, Beer and Johnston, Tata McGraw Hill.
4. Engineering Mechanics - Statics and Dynamics, Meriam J. L. and Kraige L.G., John Wiley and Sons

## First Year B. Tech- Semester – I

**Course Code: 01FYESL108**

**Course Title: Fundamentals of Programming Languages**

Teaching Scheme		Credits	Evaluation Scheme		Examination scheme		
			Name of the exam	Marks	Name of the exam	Marks	Duration
Lectures	2Hrs./ week	2	TI	20			
			TII	20	T-I	20	1.0 hour
			ISE	10	T-II	20	1.0 hour
			ESE	50	ESE	70	2.5 hours

### Course Objectives: -

1. To introduce basic programming concept
2. To make students familiar with representing solution with algorithm and flowchart.
3. To develop program applying concept in C Language.

### Course Outcomes: -

At the end of the Course, Student will be able to

**CO1. Explain** terminology in C Language (K<sup>2</sup>)

**CO2. Design** algorithm to solve the problem using arrays, functions, pointer (K<sup>6</sup>)

**CO3. Execute** a program for developed algorithm in C Language (K<sup>3</sup>)

**CO4. Understand** the concept of file handling a C program (K<sup>2</sup>)

## Course Contents

<b>Unit I</b>	<b>Introduction to C Language</b>	<b>04 Hrs</b>
The Form of a C Program, The Basic Data Types, Modifying the Basic Types, Identifies Names, Operators, Variables, Statements - Input and Output Statements, Keywords and Identifiers, Constants, Variables, Data types, Declaration of variables, Storage Class, Assigning Values to variables		
<b>Unit II</b>	<b>Control Flow</b>	<b>04 Hrs</b>
Decision Making and Branching: Simple If Statement, If-Else, Else-If, Switch Statement, Goto Statement Decision Making and Looping: While Statement, Do-While, For Statement, Break and Continue		
<b>Unit III</b>	<b>Arrays</b>	<b>06 Hrs</b>
Array Declaration, accessing array elements, array initialization. 2D array – Declaration, accessing array elements, initialization. <b>Character Arrays and Strings:</b> Declaration and Initialization String Variables, Reading Strings from Terminal, Writing Strings to Screen, Putting Strings Together, Comparison of Two Strings, Introduction to String handling Functions		
<b>Unit IV</b>	<b>Pointers</b>	<b>05 Hrs</b>
An introduction to pointers, Pointer notations, call by value and call by pointer, accessing array elements by pointers, Passing array to function, dynamic memory allocation. Pointers to 2D arrays, passing 2D array to a function.		
<b>Unit V</b>	<b>Structures</b>	<b>04 Hrs</b>
What is a Structure? Structure Type Declarations, Structure Declarations, Referencing Structure Members, Referencing Whole Structures, Initialization of Structures.		

Unit VI	Functions	07 Hrs
<p><b>User Defined Functions:</b> Need for User-defined Functions, A Multi-Function Program, Elements of User defined Functions, Definition of Functions, Return Values and their Types, Function Calls, Function Declaration, Category of Functions: No Arguments and no Return Values, Arguments but No Return Values, Arguments with Return values, No Arguments but Returns a Value, Functions that Return Multiple Values, Nesting of Functions, Recursion</p>		
<p><b>Text Books:</b></p> <ol style="list-style-type: none"> <li>1. C the Complete Reference by Herbert Schild (Tata McGraw Hill) 4th Edition.</li> <li>2. The C Programming Language- Brian W. Kernighan, Dennis Ritchie 2nd Edition.</li> </ol>		
<p><b>Reference Books:</b></p> <ol style="list-style-type: none"> <li>1. Programming in ANSI C by E. Balaguru swamy. (Tata McGraw Hill) 4<sup>th</sup> Edition.</li> <li>2. Let Us C By Yashavant P. Kanetkar, 5<sup>th</sup> Edition.</li> <li>3. C How to Program 7th Edition, Deitel, Pearson Education India</li> </ol>		
<p><b>Supplementary Reading:</b></p> <ol style="list-style-type: none"> <li>1. <a href="https://www.naukri.com/code360/library/how-to-setup-and-program-in-c-in-vs-code">https://www.naukri.com/code360/library/how-to-setup-and-program-in-c-in-vs-code</a></li> <li>2. <a href="https://www.w3resource.com/c-programming-exercises/">https://www.w3resource.com/c-programming-exercises/</a></li> </ol>		

Course Code: 01FYBSP109

Course Title: Engineering Physics Lab

Teaching Scheme	Credits	Evaluation Scheme
Practical: 02 Hrs./week	01	CIE: 50
<b>Course Objectives: -</b> <ol style="list-style-type: none"><li>1. To gain practical knowledge by applying the experimental methods to correlate with the Physics theory.</li><li>2. To learn the usage of electrical and optical systems for various measurements.</li><li>3. Apply the analytical techniques, graphical analysis to the experimental data.</li><li>4. To develop intellectual communication skills and discuss the basic principles of scientific concepts in group.</li></ol>		
<b>Course Outcomes: -</b> <p>At the end of the Course, Student will be able to</p> <p><b>CO1. Make</b> a list of apparatus required for Applied Physics experiments. Use different measuring devices and meters to record the data. (K<sup>3</sup>).</p> <p><b>CO2. Explains</b> procedure of the experiment <b>Apply</b> the appropriate formula to obtain quantitative results. (K<sup>2</sup>, K<sup>3</sup>).</p> <p><b>CO3. Develop</b> basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results, writing the journal. (K<sup>6</sup>).</p>		
<b>List of Experiments (Any 08 experiments from the following list)</b> <ol style="list-style-type: none"><li>1. Diffraction grating</li><li>2. Diffraction at cylindrical obstacle.</li><li>3. Specific rotation of sugar using polarimeter.</li><li>4. Resolving power of telescope.</li><li>5. Energy gap of semiconductor.</li><li>6. Photocell characteristics.</li><li>7. Divergence of LASER.</li><li>8. Symmetry elements of Cubic crystal.</li><li>9. Grating element using LASER.</li><li>10. Charge to mass ratio (e/m) of an electron.</li><li>11. Wavelength of light by using Fresnel's biprism.</li></ol>		
<b>Reference Books:</b> <ol style="list-style-type: none"><li>1. Experiments in Engineering Physics – A.A.Dani, P.M.Pokely</li><li>2. Engineering Physics- R.K.Gaur, S.L.Gupta</li></ol>		

**Course Code: 01FYBSP110**

**Course Title: Engineering Chemistry Lab**

Teaching Scheme	Credits	Evaluation Scheme
Practical: 02 Hrs./week	01	CIE: 50
<b>Course Objectives</b> <ol style="list-style-type: none"><li>1. Discuss basic concepts of Chemistry in Engineering.</li><li>2. Develop the ability to understand the effect of various impurities on water quality.</li><li>3. Justify the properties of metals, alloys and effect of corrosion on them.</li></ol>		
<b>Course Outcomes</b> <p>At the end of successful completion of course, the students should be able to</p> <p><b>CO1. Determine</b> acidity, alkalinity, hardness, chloride content using appropriate methods of titration for given sample of water. (K<sup>2</sup>).</p> <p><b>CO2. Estimate</b> rate of corrosion in acidic and alkaline medium by depreciation of weight (K<sup>4</sup>).</p> <p><b>CO3. Describe</b> the principals of analytical instruments and properties of some advanced material(K<sup>3</sup>).</p> <p><b>CO4. Communicate</b> effectively about laboratory work both orally and writing (K<sup>4</sup>).</p>		
<b>List of Experiments (Any 08 experiments from the following list)</b> <p>Minimum 8 experiments should be performed from the following list out of which two experiments should be demonstrative on instrumental methods.</p> <ol style="list-style-type: none"><li>1. Determination of acidity of water.</li><li>2. Determination of alkalinity of water.</li><li>3. Determination of chloride content of water by Mohr's method.</li><li>4. Determination of total hardness of water by EDTA method.</li><li>5. Determination of moisture, volatile and ash content in a given coal sample by proximate analysis.</li><li>6. Preparation of urea-formaldehyde resin.</li><li>7. Preparation of phenol-formaldehyde resin.</li><li>8. Determination of percentage of copper in brass.</li><li>9. Estimation of zinc in brass solution.</li><li>10. Determination of rate of corrosion of aluminium in acidic and basic medium.</li><li>11. Demonstration of pH meter.</li><li>12. Demonstration of photo-colorimeter / spectrophotometer.</li><li>13. Demonstration of paper chromatography.</li></ol>		
<b>Reference Books:</b> <ol style="list-style-type: none"><li>1. Engineering Chemistry by Jain and Jain, Dhanpat Rai Publishing Company Ltd., New Delhi.</li><li>2. A Textbook of Engineering Chemistry by S. S. Dara and S. S. Umare, S. Chand &amp; Company Ltd., New Delhi.</li><li>3. A Textbook of Engineering Chemistry by C. P. Murthy, C. V. Agarwal and A. Naidu, BS Publications, Hyderabad.</li><li>4. Chatwal and Anand, Instrumental Methods of Chemical Analysis, Himalaya Publishing House, New Delhi.</li></ol>		

Teaching Scheme	Credits	Evaluation Scheme
Practical: 02 Hrs./week	01	CIE: 50
<b>Course Objectives</b> <ol style="list-style-type: none"> <li>1. To verify the basic network laws.</li> <li>2. To verify the properties of single phase and three phase A.C. circuit.</li> <li>3. To analyze working of electrical transformer.</li> <li>4. To understand electrical safety devices and lamps</li> </ol>		
<b>Course Outcomes</b> At the end of the Course, Student will be able to <b>CO1. Apply</b> the fundamental laws and principles to solve the electrical circuit and network (K <sup>3</sup> ) <b>CO2. Demonstrate</b> single phase and three phase A.C. circuit (K <sup>3</sup> ) <b>CO3. Demonstrate</b> characteristics of electrical Transformer (K <sup>3</sup> ). <b>CO4. Apply</b> the skills to use of electrical safety devices and lamps (K <sup>3</sup> ).		
<b>List of Experiments (Any 08)</b>		
<ol style="list-style-type: none"> <li>1. General Introduction to Electrical Engineering laboratory.</li> <li>2. Verification of Ohm's Laws.</li> <li>3. Verification of Kirchhoff' Current Law.</li> <li>4. Verification of Kirchhoff' Voltage Law.</li> <li>5. Determination of Power factor in series R-L circuit.</li> <li>6. Determination of Resistance &amp; Inductance of a coil.</li> <li>7. Study of Phasor Relationship in R-L-C series circuit.</li> <li>8. Verification of phase and line parameters in three phase system.</li> <li>9. Load test on Single Phase Transformer.</li> <li>10. Demonstration of Fuse and MCB.</li> <li>11. Study of different types of Protective devices.</li> <li>12. Study of different types of Earthing.</li> <li>13. Study of different types of lamps</li> <li>14. Study of different types of wiring system.</li> </ol>		
<b>Reference Books:</b> <ol style="list-style-type: none"> <li>1. Electrical and Electronics technology by E. Hughey, Pearson.</li> <li>2. Fundamentals of Electrical Engineering by L.S. Bobrow, Oxford University press.</li> <li>3. Electrical Engineering Fundamentals by V. Deltoro, Prentice Hall India.</li> </ol>		
<b>Supplementary Reading:</b> <ol style="list-style-type: none"> <li>1. MOOC / NPTEL/YouTube Links: <a href="https://nptel.ac.in/courses/108105112">https://nptel.ac.in/courses/108105112</a></li> </ol>		

Teaching Scheme	Credits	Evaluation Scheme
Practical: 02 Hrs./week	01	CIE: 50
<p><b>Course Objectives: -</b></p> <ol style="list-style-type: none"> <li>1. Study of basics of Semiconductor Devices and Applications.</li> <li>2. Study and verify the truth Table of logic gates.</li> <li>3. Study and design of combinational circuits.</li> <li>4. Study and design of sequential circuits.</li> </ol>		
<p><b>Course Outcomes: -</b>            At the end of the Course, Student will be able to  <b>CO1. Understand</b> different semiconductor devices and their application. (K<sup>2</sup>)  <b>CO2. Construct</b> &amp; verify the truth Table of logic gates. (K<sup>6</sup>)  <b>CO3. Analyze</b> Design and Implement combinational logic circuits. (K<sup>4</sup>)  <b>CO4. Analyze</b> Design and Implement sequential logic circuits. (K<sup>4</sup>)</p>		
<p><b>List of Experiments</b></p> <ol style="list-style-type: none"> <li>1. Plot V-I characteristics P-N junction diode.</li> <li>2. Construct and study half wave and full wave rectifier.</li> <li>3. Study of frequency response of single stage CE amplifier.</li> <li>4. Verify the truth table of logic gates- OR, AND, NOT, NAND, NOR, EX-OR.</li> <li>5. Study and verify the truth table of full Adder and full subtractor.</li> <li>6. Design of 4:1 multiplexer.</li> <li>7. Design of 1:4 de multiplexer.</li> <li>8. Design of JK Flip Flop.</li> </ol>		

Teaching Scheme	Credits	Evaluation Scheme		Examination scheme		
		Name of the exam	Marks	Name of the exam	Marks	Duration
Practical's: 02 Hrs./week	1	T-I	--			
		T-II	--	T-I	--	1.0hour
		ISE	--	T-II	--	1.0hour
		ESE	--	CIE	50	2.5 hours

### Course Objectives

The course objectives are to cultivate students' ability to conceptualize physical objects and effectively translate them onto paper for communication in engineering contexts. It focuses on enhancing manual drawing skills, honing drawing interpretation abilities, and fostering a practical understanding of object dimensions. Additionally, the course seeks to introduce students to essential drawing and design software tools for a well-rounded skill set.

### Course Outcomes

At the end of successful completion of course, the students will be able to--

**CO1.Explain** the fundamentals of Engineering Graphics and apply the knowledge of Projections, Methods to prepare the drawings for lines (K<sup>2</sup>)

**CO2.Explain** the commands in AutoCAD to draw and modify the lines to prepare the drawings (K<sup>2</sup>)

**CO3.Apply** the types of Projections, Methods to prepare the drawings for planes (K<sup>3</sup>)

**CO4.Apply** the concept of orthographic projection of an object to draw several 2D views for visualizing the physical state of the object (K<sup>3</sup>)

**CO5.Apply** the basic knowledge of Engineering practices to draw building sections, circuit diagrams, distribution systems of wiring, sections of machine parts(K<sup>3</sup>)

### List of Experiments

List of experiments (Applicable for Interaction mode)

1. Introduction to CAD
2. Construction of projection of lines & traces of lines using CAD tool
3. Construction of projection of planes & traces of lines using sketch book and CAD tool
4. Construction of Orthographic projection for simple parts using CAD tools
5. Sheet on Construction of isometric view for simple objects

### Text Books:

1. Bhatt, N. D. and Panchal, V. M., (2016), "Engineering Drawing", Charotar Publication, Anand, India
2. K. Venugopal, K, (2015), "Engineering and Graphics", New Age International, New Delhi
3. Jolhe, D. A., (2015), "Engineering Drawing with introduction to AutoCAD", Tata McGraw Hill, New Delhi
4. Rathnam, K., (2018), "A First Course in Engineering Drawing", Springer Nature Singapore Pte. Ltd., Singapore

### Reference Books:

1. Madsen, D. P. and Madsen, D. A., (2016), "Engineering Drawing and design", Delmar Publishers Inc., USA
2. Bhatt, N. D., (2018), "Machine Drawing", Charotar Publishing House, Anand, India
3. Dhawan, R. K., (2000), "A Textbook of Engineering Drawing", S. Chand, New Delhi

Drawing: With an Introduction to Interactive Computer Graphics for Design and Production”, Peachpit Press, USA

**Submission:**

1. Assignment On AutoCAD Commands (Line and Modify commands)
2. Sheet on Construction of projection of lines & traces of lines using sketch book and CAD tool
3. Sheet on Construction of projection of planes & traces of lines using sketch book and CAD tool
4. Sheet on Construction of Orthographic projection for simple parts using CAD tools
5. Sheet on Construction of Orthographic projection for simple parts using CAD tools

**Course Code: 01FYESP114**

**Course Title: Applied Mechanics Lab**

<b>Teaching Scheme</b>	<b>Credits</b>	<b>Evaluation Scheme</b>
Practical: 02 Hrs./week	01	CIE: 50
<b>Course Objectives</b> <ol style="list-style-type: none"><li>1. To impart knowledge of fundamentals of mechanics</li><li>2. To provide knowledge of basic concepts and system of forces in static and dynamics</li><li>3. To illustrate the principles of mechanics in engineering application</li></ol>		
<b>Course Outcomes</b> <p>At the end of the Course, Student will be able to</p> C01. <b>Explain</b> the methodology to verify the different laws of forces using different apparatus. (K <sup>2</sup> ) C02. <b>Apply</b> graphical method to analyze determinate beams. (K <sup>3</sup> )		
<b>List of Experiments (Any 08)</b>		
<b>Part -A) Experiments</b> <ol style="list-style-type: none"><li>1. Verification of Law of polygon of forces</li><li>2. To find Support reaction of Simply Supported Beam</li><li>3. Principle of moments using Bell crank lever apparatus</li><li>4. Lami's theorem (Jib Crane)</li></ol>		
<b>Part-B) Graphic Statics (To be solved on A3 Sheets)</b> <ol style="list-style-type: none"><li>1. To find resultant – 3 Problems</li><li>2. To find Support reactions – 3</li></ol>		
<b>Part -C) Home Assignments</b> <ol style="list-style-type: none"><li>1. At least ONE assignment on each unit with minimum 04 numerical</li></ol>		
<b>Text Books:</b> <ol style="list-style-type: none"><li>1. Engineering Mechanics, Ferdinand Singer, 3rd edition, Harper and Row</li><li>2. Engineering Mechanics (Statics and Dynamics) by Hibbeler R. C., Pearson Education</li></ol>		
<b>Reference Books:</b> <ol style="list-style-type: none"><li>1. Engineering Mechanics, S Timoshanko and Young, Tata McGraw Hill Education Pvt. Ltd. New Delhi.</li><li>2. Vector Mechanics for Engineers – Statics, Beer and Johnston, Tata McGraw Hill</li><li>3. Vector Mechanics for Engineers – Dynamics, Beer and Johnston, Tata McGraw Hill.</li><li>4. Engineering Mechanics - Statics and Dynamics, Meriam J. L. and Kraige L.G., John Wiley and Sons</li></ol>		

Teaching Scheme	Credits	Evaluation Scheme
Practical: 02 Hrs./week	01	CIE: 50
<b>Course Objectives</b> <ol style="list-style-type: none"> <li>1. To introduce basic programming concept</li> <li>2. To make students familiar with representing solution with algorithm and flowchart.</li> <li>3. To develop program by applying concept of C Language.</li> </ol>		
<b>Course Outcomes</b> At the end of the Course, Student will be able to <b>CO1. Explain</b> terminology in C Language (K <sup>2</sup> ) <b>CO2. Design</b> algorithm to solve the problem using arrays, functions, pointer (K <sup>6</sup> ) <b>CO3. Execute</b> a program for developed algorithm in C Language (K <sup>3</sup> ) <b>CO4. Understand</b> the concept of file handling a C program (K <sup>2</sup> ).		
<b>List of Experiments (Any 08)</b>		
<ol style="list-style-type: none"> <li>1. C Program to find addition, subtraction, multiplication, and division of two numbers</li> <li>2. C Program to find the square and cube of a given number</li> <li>3. C Program to swap two numbers</li> <li>4. C Program to check whether a number is even or odd</li> <li>5. C Program to find the large and small numbers among two numbers</li> <li>6. C Program to calculate the area of a circle</li> <li>7. C Program to display factors of a number</li> <li>8. C Program to generate multiplication table</li> <li>9. C Program to calculate average using arrays</li> <li>10. C Program to find the largest element of an array</li> <li>11. C Program to find the transpose of a matrix</li> <li>12. With using user-defined function write a program to find the length of a string</li> <li>13. C Program to Find Length of the String using Pointer.</li> <li>14. C Program to Copy Contents of one file to another file.</li> </ol>		
<b>Reference Books:</b> <ol style="list-style-type: none"> <li>1. Programming in ANSI C by E. Balaguru swamy. (Tata McGraw Hill) 4<sup>th</sup> Edition.</li> <li>2. Let Us C By Yashavant P. Kanetkar, 5 Edition.</li> <li>3. C How to Program 7th Edition, Deitel, Pearson Education India</li> </ol>		
<b>Supplementary Reading:</b> <ol style="list-style-type: none"> <li>1. <a href="https://www.naukri.com/code360/library/how-to-setup-and-program-in-c-in-vs-code">https://www.naukri.com/code360/library/how-to-setup-and-program-in-c-in-vs-code</a></li> <li>2. <a href="https://www.w3resource.com/c-programming-exercises/">https://www.w3resource.com/c-programming-exercises/</a></li> </ol>		

## First Year B. Tech- Semester – I

**Course Code: 01FYAEP116 Course Title: Professional Communication**

Teaching Scheme	Credits	Evaluation Scheme
Lecture: 01 Hrs./week Practical: 02 Hrs./week	02	CIE: 50
<b>Course Objectives:</b> The students should be able to: <ol style="list-style-type: none"> <li>1. Learn the difference between Verbal and Non- verbal Communication.</li> <li>2. Improve pronunciation skills.</li> <li>3. Improve the techniques of good speaking skills.</li> <li>4. Understand the notion of technical writing.</li> </ol>		
<b>Course Outcomes:</b> At the end of the Course, Student will be able to: <p><b>CO1. Understand</b> the difference between Verbal and Non-Verbal communication. (K<sup>2</sup>).</p> <p><b>CO2. Improve</b> pronunciation ability by using language Lab. (K<sup>3</sup>).</p> <p><b>CO3. Learn</b> to improve good speaking techniques in their surroundings. (K<sup>1</sup>).</p> <p><b>CO4. Understand</b> the concept of technical writing and to know its techniques. (K<sup>2</sup>).</p>		
Course Contents		
<b>Unit I</b>	<b>Fundamentals of Communication</b>	<b>03 hrs</b>
<b>1.1. Basic Concepts of Communication:</b> <ol style="list-style-type: none"> <li>a) Definition, Objectives, Process of communication</li> </ol> <b>1.2. Methods of communication:</b> <ol style="list-style-type: none"> <li>a) Verbal and Non- verbal Administrative Communication (Formal &amp; Informal Communication)</li> </ol> <b>1.3. Barriers to communication:</b> <ol style="list-style-type: none"> <li>a) Mechanical, Physical, psychological, Cultural, Linguistics, Environmental, Noise etc.</li> </ol>		
<b>Unit II</b>	<b>Basic Grammar &amp; LSRW Skills</b>	<b>03 hrs</b>
<b>2.1. Concepts of Grammar:</b> <ol style="list-style-type: none"> <li>a) Tenses, Developing Vocabulary, confused words, homonyms, homophones etc.</li> </ol> <b>2.2. Developing Listening, Speaking, Reading &amp; Writing Skills:</b> <ol style="list-style-type: none"> <li>a) Concepts of active listening.</li> <li>b) Enhancing listening through language lab or open-source platforms.</li> <li>c) Conversational activities-one minute speech, storytelling etc.</li> <li>d) Techniques to improve reading fluency, Reading &amp; summarization skills.</li> <li>e) Seven C's of writing skills</li> </ol>		
<b>Unit III</b>	<b>Phonetics</b>	<b>02 hrs</b>
<b>3.1. Understanding Phonetics:</b> <ol style="list-style-type: none"> <li>a) Phonetics alphabets.</li> <li>b) Transcription practices.</li> <li>c) Intonation &amp; word stress</li> </ol>		
<b>Unit IV</b>	<b>Professional Correspondence</b>	<b>06 hrs</b>
<b>4.1. Structured Communication:</b> <ol style="list-style-type: none"> <li>a) Techniques of spoken language/ Formal speech.</li> <li>b) Importance of meetings, Elocution, Extempore etc.</li> </ol>		

- c) Difference in British & American English (format & style)
- d) Letter Writing – request/permission etc.), E-mails
- e) Planning & preparation of technical events, information broacher and manuals.

**Reference Books:**

- 1) Communication Skills Handbook: How to succeed in written and oral communication by Jane Summers, Brette Smith, Wiley India Pvt. Ltd.
- 2) Business Ethics and Communication by C.S. Tejpal Sheth.
- 3) Body Language by Allen Pease.
- 4) Write Right by Syed Abdur Raheem
- 5) Better English Pronunciation by J.D. O'Connor
- 6) Speaking Accurately, K.C. Nambiar, Cambridge University Press New Delhi

**Lists of Sessions/activities:**

- 1. Language lab sessions
- 2. LSRW Skills
- 3. Letter Writing –Simple application letter. E-mails
- 4. Individual Introduction of the students
- 5. Problems Facing in English communication
- 6. Games on vocabulary building
- 7. Speech/ Elocution
- 8. Extempore
- 9. Team Work –Story making,
- 10. Situational conversation

## First Year B. Tech- Semester – I/II

**Course Code: 01FYSEP117 Course Title: Design Thinking and Idea Lab**

Teaching Scheme	Credits	Evaluation Scheme
Practical: 02 Hrs./week	01	CIE: 50
<b>Course Objectives</b> <ol style="list-style-type: none"> <li>1. Understand the core principles of design thinking and its role in engineering.</li> <li>2. Apply the six hats of design thinking to analyze and solve complex problems.</li> <li>3. Develop creative and user-centered solutions to real-world challenges.</li> <li>4. Demonstrate effective communication and collaboration in multidisciplinary teams.</li> <li>5. Evaluate and analysis design concepts and prototypes.</li> <li>6. Develop a mindset for continuous innovation and improvement.</li> </ol>		
<b>Course Outcomes</b> At the end of the Course, Student will be able to <b>CO1. Identify</b> and define problems from a user's perspective and articulate design criteria. <b>CO2. Apply</b> empathy and observation to gain insights into user needs and behaviors. <b>CO3. Generate</b> innovative ideas and solutions through brainstorming and ideation. <b>CO4. Prototype</b> and test design solutions to refine and improve them <b>CO5. Present</b> and communicate design ideas effectively using visual aids and storytelling <b>CO6. Collaborate</b> with peers and industry professionals to address real-world design challenges		
<b>List of Experiments</b>		
<b>Week 1-2</b>	<b>Introduction to Design Thinking</b>	
	<ol style="list-style-type: none"> <li>1. Understanding the design thinking process</li> <li>2. Role of empathy and user-centric design</li> <li>3. Practical Lab: Empathy mapping and user interviews</li> <li>4. Assignment 1: Problem identification</li> </ol>	
<b>Week 3-4</b>	<b>Ideation</b>	
	<ol style="list-style-type: none"> <li>1. Techniques for idea generation and brainstorming</li> <li>2. Practical Lab: Brainstorming sessions</li> <li>3. Assignment 2: Idea generation and selection</li> </ol>	
<b>Week 5-6</b>	<b>Prototyping and Testing</b>	
	<ol style="list-style-type: none"> <li>1. Creating prototypes to validate design concepts</li> <li>2. Practical Lab: Rapid prototyping</li> <li>3. Assignment 3: Prototyping and user testing</li> </ol>	
<b>Week 7-8</b>	<b>Analysis and Evaluation</b>	
	<ol style="list-style-type: none"> <li>1. Applying the six hats of design thinking</li> <li>2. Practical Lab: Six thinking hats analysis</li> <li>3. Assignment 4: Six hats analysis of a case study</li> </ol>	
<b>Week 9-10</b>	<b>Communication and Collaboration</b>	
	<ol style="list-style-type: none"> <li>1. Visual communication and storytelling</li> <li>2. Group project and industry collaboration</li> <li>3. Assignment 5: Design project presentation</li> <li>4. Assignment 6: Reflection and lessons learned</li> </ol>	

**Indicative List of activities/assignment:**

1. An overview of ethical design and critiques in design thinking.
2. Generation of Idea, Development, Evaluation & Application.
3. Problem Identification.
4. Brainstorming sessions to find out solution for identified problems.
5. Prototyping and Modelling challenge.
6. Various Tools and Methodology used for the Prototyping.
7. Creation of Prototype and Innovative solution.
8. Test and Evaluation of Prototype.
9. Report Drafting - Instructions & Practices.
10. Presentation & Exhibition.
11. Industrial Visit or Interaction with Successful Entrepreneurs.

**Reference Books:**

1. Design Thinking: Understand-Improve-Apply S. G. Blank 2007
2. Design Thinking for innovation research and Practice Walter Brenner, Falk Uebernickel, Springer 2016
3. Business Design Thinking and Doing: Frameworks, Strategies and Techniques for Sustainable Innovation Angele M. Beausoleil 2022.
4. Design Thinking: Understanding How Designers Think and Work by Nigel Cross
5. Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation" by Tim Brown
6. Design Thinking for Visual Communication" by Ranjan Nayar and Jaidip Subedi
7. The Design of Everyday Things" by Don Norman.
8. "Design Thinking: Creativity and Innovation" by S. Balaram
9. Sprint: How to Solve Big Problems and Test New Ideas in Just Five Days" by Jake Knapp
10. Creative Confidence: Unleashing the Creative Potential Within Us All" by Tom Kelley and David Kelley (with a foreword by Ratan Tata)

**Case Studies:**

1. Design Thinking in Healthcare: Redesigning a patient's waiting room experience.
2. Design Thinking in Product Development: The evolution of the smartphone.
3. Tata Nano: The People's Car: Explore how Tata Motors aimed to revolutionize the automobile industry by creating an affordable and compact car for the masses, known as the Tata Nano.
4. Aravind Eye Care System: Investigate how Aravind Eye Care System in India used innovative design thinking to provide high-quality, affordable eye care services to a large population, often in remote areas.
5. Project Shakti by Hindustan Unilever: Analyze how Hindustan Unilever's Project Shakti empowered rural women in India by turning them into micro-entrepreneurs, distributing Unilever products in their communities.
6. Aadhaar: India's Unique Identification Program: Explore how the Aadhaar program used biometric data and design thinking to provide millions of Indians with a unique identification system, enhancing access to government services and benefits.
7. Ola Cabs: Transforming Transportation in India: Learn how Ola, an Indian ride-sharing platform, disrupted the traditional taxi industry by applying innovative design thinking to its services and business model.
8. Lifebuoy: Promoting Hygiene in Rural India: Explore how Lifebuoy, a brand under Unilever, used design thinking to develop innovative marketing campaigns and products to promote handwashing and hygiene in rural India.

9. Amul: The White Revolution in India: Analyze how the Amul cooperative transformed the dairy industry in India through a unique business model, design thinking, and innovative marketing strategies
10. Flipkart: E-commerce Success Story: Study how Flipkart, one of India's leading e-commerce platforms, employed design thinking to grow its business and offer a wide range of products and services.
11. ISRO's Mars Orbiter Mission: Learn about how the Indian Space Research Organisation (ISRO) successfully launched the Mars Orbiter Mission (Mangalyaan) on a limited budget, showcasing innovation and design thinking in space exploration.
12. Designing Google's Self-Driving Car: Explore how Google used design thinking to develop autonomous vehicles that redefine transportation.
13. SpaceX: Advancing Space Exploration Through Design Thinking: Analyze SpaceX's approach to space technology and how it has disrupted the aerospace industry.
14. McDonald's: Evolution of Fast-Food Service: Study the design thinking principles applied by McDonald's to enhance their customer experience and streamline operations.
15. Nest: Reinventing Thermostats and Home Automation: Examine how Nest Labs, a subsidiary of Google, reimagined home automation with their smart thermostats and other products.
16. LEGO: Building a Design-Centric Toy Empire: Investigate how LEGO has used design thinking to create a global brand that fosters creativity and learning through play.
17. Starbucks: Brewing Design Innovation in the Coffee Industry: Analyze how Starbucks incorporates design thinking into its store layouts, product offerings, and customer experiences.
18. Amazon: Customer-Centric Design in E-commerce: Discover how Amazon's design thinking philosophy has played a pivotal role in its e-commerce dominance

## First Year B. Tech- Semester – I/II

**Course Code: 01FYSEP118**

**Course Title: Project Lab**

<b>Teaching Scheme</b>	<b>Credits</b>	<b>Evaluation Scheme</b>
Practical: 02 Hrs./week	01	CIE: 50
<b>Course Details</b> <ol style="list-style-type: none"><li>1. Students are divided into groups must select the problem statement which will solve a practical engineering problem.</li><li>2. Each group will be assigned a mentor/guide/technical advisor.</li><li>3. Guide can approve the problem statements based on feasibility and learning outcomes expected for first year engineering students</li><li>4. Guide is to monitor progress of the task during phases of project work. Broadly phases may include- requirements gathering, preparing a solution, technology design for the solution.</li><li>5. Weekly monitoring and continuous assessment record are to be maintained by guide.</li><li>6. Get the report submitted at the end of semester.</li></ol> <p>Student is required to prepare a capstone project and file containing documentary proofs of the activities done by him. The evaluation will be done by expert committee constituted by HOD/Departmental capstone project In-charge/ faculty mentor.</p>		

Teaching Scheme	Credits	Evaluation Scheme
Lecture: XX Hrs./week Practical: XX Hrs./week	Mandatory (Audit Course)	CIE: 50
<p><b>Course Outcomes</b> At the end of the Course, Student will be able to</p> <p><b>C01. Understand</b> the social, economic and administrative considerations that influence the working environment of industrial organizations. (K<sup>2</sup>)</p> <p><b>C02. Demonstrate</b> social and administrative skills. (K<sup>3</sup>)</p> <p><b>C03. Recognize</b> the engineer's responsibilities and ethics. (K<sup>2</sup>)</p>		
<p><b>Course Details:</b></p> <p>As per the approved structure of curriculum, students will be allowed to do internship during first semester of B. Tech. program. During internship students are required to be visit village/ward/small industry/organization etc. For following activities</p> <p>Indicative list of activities:</p> <ol style="list-style-type: none"> <li>1. Prepare and implement plan to create local job opportunities.</li> <li>2. Prepare and implement plan to improve education quality in village.</li> <li>3. Developing Sustainable Water Management system.</li> <li>4. Prepare and improve a plan to improve health parameters of villagers.</li> <li>5. Developing and implementing of Low-Cost Sanitation facilities</li> <li>6. Prepare and implement plan to promote Local Tourism through Innovative Approaches.</li> <li>7. Prepare and implement solution for energy conservation.</li> <li>8. Prepare and implement plan to Skill village youth and provide employment.</li> <li>9. Develop localized techniques for Reduction in construction Cost.</li> <li>10. Prepare and implement plan of sustainable growth of village.</li> <li>11. Setting of Information imparting club for women leading to contribution in social and economic issues.</li> <li>12. Developing and managing Efficient garbage disposable system.</li> <li>13. Contribution to any national level initiative of Government of India. e.g. Digital India/ Skill India/ Swachh Bharat Internship etc.</li> </ol> <p>Every student is required to prepare a file containing documentary proofs of the activities done by him. The evaluation will be done by expert committee constituted by HOD/Departmental Internship In-charge/ faculty mentor.</p>		

<b>Teaching Scheme</b>		<b>Credits</b>	<b>Evaluation Scheme</b>
Lecture: 02 Hrs./week		Mandatory (Audit Course)	CIE: 50
<b>Course Content</b>			
<b>Unit I</b>	<b>Learning Basic Aptitude- I</b>		<b>05 Hrs</b>
Module-1: Percentage, Module-2: Average & Its Applications			
<b>Unit II</b>	<b>Series Completion</b>		<b>05 Hrs</b>
Module-1: Number Series, Module-2: Letter Series, Module-3: Alphanumeric Series			
<b>Unit III</b>	<b>LSRW</b>		<b>05 Hrs</b>
Module-1. Listening Introduction & Activities, Module- 2. Speaking Introduction & Activities, Module-3. Reading Introduction & Activities, Module-4. Writing Introduction			
<b>Unit IV</b>	<b>Career Management</b>		<b>05 Hrs</b>
Module-1: SWOT Analysis, Module-2: Goal Setting (Why & How of SMART goals) Module-3: Personality Traits & Self-Assessment, Module-4: Competency Mapping			
<b>Unit V</b>	<b>Interpersonal Skills</b>		<b>05 Hrs</b>
Module-1: Team Management, Module-2: Attitude Building, Module-3: Time Management			

**First Year B. Tech Semester – II**

**Course Code: 01FYBSL121**

**Course Title: Applied Mathematics - II**

Teaching Scheme	Credits	Evaluation Scheme		Examination scheme		
		Name of the exam	Marks	Name of the exam	Marks	Duration
Lectures: 03Hrs./week	3	T-I	20	T-I	20	1.0hour
		T-II	20	T-II	20	1.0hour
		ISE	10	ESE	70	2.5hours
		ESE	50			

**Course Objectives**

The course objectives are

1. To train the students to solve problems on chapters like beta and gamma functions, numerical solutions of simultaneous equations, Z-transforms, ordinary differential equation, its application
2. To use knowledge of chapters of the course to solve engineering problems.

**Course Outcomes**

At the end of successful completion of course, the students will be able to—

**CO1. Identify, Formulate and Apply** knowledge of mathematics to solve Engg. problems. (K<sup>2</sup>, K<sup>3</sup>)

**CO2. Solve** problems on, beta and gamma functions, numerical solutions of simultaneous equations, Z-transforms. (K<sup>2</sup>)

**CO3. Understand** ordinary differential equation, its application, apply such knowledge to find its numerical solutions. (K<sup>2</sup>)

**Course Contents**

<b>Unit I</b>	<b>Ordinary Differential Equations of First Order and First Degree</b>	<b>06hrs</b>
	Linear differential equations Reducible to Linear differential equations Exact differential equations Reducible to Exact differential equations	
<b>Unit II</b>	<b>Applications of Ordinary Differential Equations of First Order and First Degree</b>	<b>06hrs</b>
	Orthogonal trajectories (Cartesian and Polar equations) Applications to Simple Electrical Circuits, Newton’s law of cooling	
<b>Unit III</b>	<b>Numerical Solution of Ordinary Differential Equations of First Order and First Degree</b>	<b>06hrs</b>
	Taylor’s series method, Euler's method Modified Euler's method, Runge -Kutta method of fourth order formula.	
<b>Unit IV</b>	<b>Numerical Solution of linear simultaneous equations</b>	<b>06hrs</b>
	Gauss elimination method Gauss-Jordan method Jacobi’s iteration method, Gauss-Seidel iteration method	
<b>Unit V</b>	<b>Special Functions</b>	<b>06hrs</b>
	Gamma function and its properties Beta function and its properties Error function and its properties	

<b>Unit VI</b>	<b>Z-Transforms</b>	<b>06hrs</b>
	Introduction, Definition, Region of Convergence Z-Transform of Standard Functions Properties of Z- transform (Linearity, Change of Scale, Shifting Property, Multiplication by k, Division by k.) Inverse Z- Transform-Only by partial fraction method.	
<b>Text Books:</b>		
<ol style="list-style-type: none"> <li>1. A text book of Applied Mathematics, Vol.I, P. N. Wartikar &amp; J. N. Wartikar Pune Vidyarthi Griha Prakashan, Pune ,7<sup>th</sup> edition 2012</li> <li>2. Higher Engineering Mathematics Dr. B. S. Grewal Khanna Publishers, Delhi. 42<sup>nd</sup> edition 2012</li> </ol>		
<b>Reference Books:</b>		
<ol style="list-style-type: none"> <li>1. A text book of Engineering Mathematics N. P. Bali, Iyengar Laxmi Publications (P) Ltd., New Delhi. 7<sup>th</sup> edition 2008</li> <li>2. Advanced Engineering Mathematics Erwin Kreyszig Wiley India Pvt. Ltd 9<sup>th</sup> edition 2012</li> </ol>		
<b>Supplementary Reading:</b> Derivative, Integration.		
<b>List of Tutorials:</b>		
<ol style="list-style-type: none"> <li>1. Exact differential equation</li> <li>2. Linear differential Equations</li> <li>3. Reducible to Linear differential Equations</li> <li>4. Applications of Ordinary Differential Equations of First Order and First Degree</li> <li>5. Numerical Solution of Ordinary Differential Equations of First Order and First Degree</li> <li>6. Numerical Solution of linear simultaneous equations</li> <li>7. Special Functions</li> <li>8. Z-Transforms</li> </ol>		

## First Year B. Tech Semester – II

**Course Code: 01FYPCL122 Course Title: Data Structure and Programming**

Teaching Scheme		Credits	Evaluation Scheme		Examination scheme		
Lectures	2Hrs./week	2	Name of the exam	Marks	Name of the exam	Marks	Duration
			TI	20			
			TII	20	T-I	20	1.0 hour
			ISE	10	T-II	20	1.0 hour
			ESE	50	ESE	70	2.5 hours
<b>Course Objectives</b>							
<ol style="list-style-type: none"> <li>To understand the fundamentals of Data Structures.</li> <li>To master the concepts and operations of Linked Structures.</li> <li>To comprehend the functionality and applications of Stacks and Queues.</li> <li>To acquire proficiency in Searching and Sorting Algorithms.</li> <li>To develop a comprehensive understanding of Trees and Non-Linear Data Structures.</li> </ol>							
<b>Course Outcomes</b>							
At the end of the Course, Student will be able to, <b>CO1.</b>							
<b>Describe</b> basic terminology of Data Structures (K <sup>2</sup> ) <b>CO2.</b>							
<b>Apply</b> data structures to solve given problem (K <sup>3</sup> )							
<b>CO3. Design</b> algorithms to carry out different operations on data structures (K <sup>6</sup> )							
<b>CO4. Evaluate</b> performance of different data structures (K <sup>5</sup> )							
<b>Course Contents</b>							
<b>Unit I</b>	<b>Introduction to Data Structures</b>						<b>04 Hrs</b>
ADT- Defining the ADT, Types of Data Structures, Arrays- Need for array, Array ADT, Implementing array, 2-D arrays, Analysis of Algorithms: Complexity Analysis of Algorithms, Big-O Notation							
<b>Unit II</b>	<b>Lists</b>						<b>04 Hrs</b>
Linked Structures- Singly Linked List & Operations with algorithms, Application-Polynomials, Doubly Linked Lists, Circular Linked List							
<b>Unit III</b>	<b>Stacks and Queues</b>						<b>05 Hrs</b>
Stacks ADT, Stack Implementation using linked list and array, applications of stack. Queues – operations ADT, implementations, applications, Circular queue, Priority queues.							
<b>Unit IV</b>	<b>Searching and Sorting Algorithms</b>						<b>05 Hrs</b>
Search Algorithms- Linear Search Algorithm, Binary Search Algorithm, Sort Algorithms- Selection Sort, Insertion Sort, Bubble Sort, Merge Sort, Quick Sort							
<b>Unit V</b>	<b>Trees</b>						<b>05 Hrs</b>
Binary Trees- Tree Structure, Properties, Implementation, Tree Traversals, Binary Search Trees- Operations and Algorithms (searching, insertion, deletion, min, max)							
<b>Unit VI</b>	<b>Non-Linear Data Structures</b>						<b>05 Hrs</b>
Heap – operations: reheapup, reheardown, heap sort, insert and delete nodes. Hashing – hashing methods, hash collision, hash collision resolution methods.							

**Text Books:**

- 1) Data Structures: A Pseudocode Approach with C, Richard F. Gilberg & Behrouz A. Forouzan 2<sup>nd</sup> Edition.
- 2) Data Structures and Algorithms Using Python, Rance D. Necaise wiley Publications.
- 3) Data Structures and Algorithms in Python, Michael T. Goodrich, Roberto Tamassia, Michael H. Goldwasser wiley Publications.

**Reference Books:**

- 1) Data Structures and Algorithm Analysis in C, 2 Edition, by Weiss, Pearson Education India.
- 2) Data Structures and Algorithms Made Easy: Data Structures and Algorithmic Puzzles, by Narasimha Karumanchi, Careermonk Publications 5<sup>th</sup> Edition.
- 3) Data Structures using C – ISRD Group, TMH publication.

**Supplementary Reading:**

- 1) <https://donsheehy.github.io/datastructures/fullbook.pdf>

Course Code: 01FYPCP123

Course Title: Data Structure and Programming Lab

Teaching Scheme	Credits	Evaluation Scheme
Practical: 02 Hrs./week	01	CIE: 50
<b>Course Objectives</b> <ol style="list-style-type: none"><li>1. To comprehend the functionality and applications of Stacks and Queues.</li><li>2. To acquire proficiency in Searching and Sorting Algorithms.</li><li>3. To develop a comprehensive understanding of Trees and Non-Linear Data Structures.</li></ol>		
<b>Course Outcomes</b> <p>At the end of the Course, Student will be able to</p> <p><b>CO1. Identify</b> time complexity of any program (K<sup>2</sup>)</p> <p><b>CO2. Design and Implement</b> algorithms based on stack and queue (K<sup>6</sup> K<sup>3</sup>)</p> <p><b>CO3. Apply</b> different data structures to solve real life problem (K<sup>3</sup>).</p>		
<b>List of Experiments (Any 08)</b>		
<ol style="list-style-type: none"><li>1. To Find Time Complexity of a Programs.</li><li>2. Implementation of multi-dimensional arrays and problems related to them like matrix multiplication.</li><li>3. Problem on implementation of the various operations on singly Linked List, like create, display, delete.</li><li>4. Program to create doubly linked list, and search for a particular key.</li><li>5. Inserting, deleting elements in linked list at various position.</li><li>6. Implement the various types of insertions and deletions possible in Circular Linked List.</li><li>7. Implementation of stack using array/ Linked list.</li><li>8. Implementation of circular queue using array/Linked list.</li><li>9. Implement Sorting algorithm (recursive/Non recursive)</li><li>10. Implement Searching algorithm.</li><li>11. Implementation of different tree traversal algorithms.</li><li>12. Inserting new elements, deleting existing elements, and updating elements in tree.</li><li>13. Insertion and deletion of elements in heap.</li></ol>		
<b>Reference Books:</b> <ol style="list-style-type: none"><li>1. Data Structures and Algorithm Analysis in C, 2<sup>nd</sup> Edition, by Weiss, Pearson Education India.</li><li>2. Data Structures and Algorithms Made Easy: Data Structures and Algorithmic Puzzles, by Narasimha Karumanchi, Careermonk Publications 5<sup>th</sup> Edition.</li><li>3. Data Structures using C – ISRD Group, TMH publication.</li></ol>		
<b>Supplementary Reading:</b> <ol style="list-style-type: none"><li>1. <a href="https://donsheehy.github.io/datastructures/fullbook.pdf">https://donsheehy.github.io/datastructures/fullbook.pdf</a></li></ol>		

Teaching Scheme	Credits	Evaluation Scheme
Lecture: 01 Hrs./week Practical: 02 Hrs./week	02	CIE: 50
<b>Course Outcomes</b> At the end of the Course, Student will be able to <b>CO1. Recognize</b> the features of Indian constitution and interpretation of Preamble. (K <sup>2</sup> ) <b>CO2. Interpret</b> fundamental rights and duties of Indian citizen to inoculate. (K <sup>3</sup> ) <b>CO3. Identify</b> different laws and regulations based upon information acts (K <sup>2</sup> ). <b>CO4. Distinguish</b> the functioning of Indian parliamentary system and legislative system at the center and state level. (K <sup>4</sup> )		
<b>Course Content</b>		
<b>Unit I</b>	<b>Constitution: Basic Structure</b>	<b>02 Hrs</b>
Meaning of the constitution law and constitutionalism, Historical perspective of the constitution of India, Government of India Act of 1935 and Indian Independence Act of 1947.		
<b>Unit II</b>	<b>Fundamental Rights</b>	<b>03 Hrs</b>
Fundamental Rights — Features and characteristics, Right to Equality, Right to Freedom, right against Exploitation, Right to Freedom of Religion, Cultural and Educational Rights, Right to Constitutional Remedies.		
<b>Unit III</b>	<b>Regulation to Information</b>	<b>02 Hrs</b>
Introduction, Right to Information Act:2005, Information Technology Act 2000, Electronic Governance in India, Secure Electronic Records and Digital Signatures, Digital Signature Certificates, Cyber Regulations Appellate Tribunal.		
<b>Unit IV</b>	<b>Government of The Union and States</b>	<b>02 Hrs</b>
President of India — Election and Powers, Prime Minister of India – Election and Powers, Loksabha - Structure, Rajya Sabha — Structure, Governor of State, Chief Minister and Council of Ministers in a state		
<b>Unit V</b>	<b>A Study of Panhala Fort and Pawankhind</b>	<b>03 Hrs</b>
History of Panhala Fort, Major Features: Andhar Bawadi, Major Features: Kalavanticha Mahal, Ambarkhana, Major Features: Dharma Koti, Sajja Koti, Teen Darwaja, Raj Darwaja, Rajdindi Bastion, Journey from Panhalgad to Pawankhind by Chhatrapati Shivaji Raje		
<b>Unit VI</b>	<b>A Study of Mahalaxmi Temple</b>	<b>03 Hrs</b>
History and construction of Temple, The Main Shrines Doorway, Darshan and Kurma Mandap, Ganapati Chowk, Garud Mandap, Boundary wall, Entrances and complex Mahalaxmi Temple Timings, Kiranostav Celebrations		

**Reference Books:**

1. "Introduction to constitution of India", Durga Das Basu LexisNexis 23<sup>rd</sup> Edition 2018,
2. "Constitutional Law of India", M V Pylee, S Chand Publication, 16<sup>th</sup> Edition, 2018
3. "Translations of Panhala inscriptions". Government of Maharashtra. Retrieved 19
4. March 2009.
5. "Mahalakshmi Temple - Jewel Among Kolhapur Temples.

**Supplementary Reading:**

1. <https://www.mahalaxmikolhapur.com/about-temple.php>

**Practical / Activity:**

1. Students Must demonstrate the learnings through presentation or reports.
2. Students must visit to the nearby historical places.
3. Students can prepare the documentary in groups.

**Course Code: 01FYMCP125**

**Course Title: Capstone Project**

<b>Teaching Scheme</b>	<b>Credits</b>	<b>Evaluation Scheme</b>
Lecture: XX Hrs./week Practical: XX Hrs./week	Mandatory (Audit Course)	CIE: 50
<b>Course Details:</b>  As per the approved structure of curriculum, students will be allowed to do Capstone Project during second semester of B. Tech. program. During project students are required to Implement/Develop Technology solutions for the problems identified in first semester rural/social internship which will improve quality of life.  Student is required to prepare a capstone project and file containing documentary proofs of the activities done by him/her. The evaluation will be done by expert committee constituted by HOD/Departmental capstone project In-charge/ faculty mentor.		

Course Code: 01FYMCP126

Course Title: Fundamentals of Aptitude II

Teaching Scheme		Credits	Evaluation Scheme
Lecture: 02 Hrs./week		Mandatory (Audit Course)	CIE: 50
<b>Course Content</b>			
<b>Unit I</b>	<b>Learning Basic Aptitude II</b>		<b>06 Hrs</b>
Ratio & Proportion, Mixture & Allegation, HCF & LCM			
<b>Unit II</b>	<b>Logical Reasoning</b>		<b>06 Hrs</b>
Blood Relations, Seating Arrangement, Pattern Completion			
<b>Unit III</b>	<b>Functional English</b>		<b>06 Hrs</b>
Spotting Errors, Sentence Correction/ Sentence Improvement, Sentence completion Sentence Formation/ Ordering of words, One word Substitution, Para jumbles			
<b>Unit IV</b>	<b>Attitude Building</b>		<b>06 Hrs</b>
Focus & Discipline, ASK Model- Corporate Expectations, Change Management (Changing & Developing habits)			



Dr.J.J.MagdumTrust's

# Dr. J. J. Magdum College of Engineering, Jaysingpur.

(An Autonomous Institute)

## First Year B. Tech- Semester – I/II

Course Code: 01FYCCP1XX

Course Title: Co-Curricular Course-I/II

Teaching Scheme	Credits	Evaluation Scheme
Lecture: XX Hrs./week Practical: XX Hrs./week	02	CIE: 50
<b>Course Details:</b> <ol style="list-style-type: none"><li>1. Liberal Learning Through Students Clubs and particular areas is a Two-credit course run for First Year B. Tech.</li><li>2. Students are required to go through the list of liberal learning courses and rank their preferences through google form provided by department at the beginning of semester.</li><li>3. They will be allocated one area from the list. Experts from particular areas (club) conduct sessions once a week for each area on campus through activities, discussions, presentations, and lecture methods and evaluation out of 50 per area is done for each area throughout the semester.</li><li>4. Evaluation pattern may differ according to the nature of each area (Club).</li><li>5. Although there is no pre-defined syllabus, there is an outline which experts normally develop and follow for the sessions.</li><li>6. However, students may approach the faculty to cover certain topics of their interest in that area during sessions based on students' interest and experts'.</li><li>7. List of liberal learning courses will get display at the beginning of semester.</li></ol>		



# FACULTY LIST

## DEPARTMENT FACULTY LIST

Academic Year- 2025-2026

Sr.No	Name of Proctor
1	Dr.M.B.Bhilavade
2	Prof.P.P.Patil
3	Dr.D.B.Unde
4	Prof.B.N.Shinde
5	Dr.S.M.Attar
6	Prof.P.A.Chougule
7	Prof.M.R.Naik
8	Dr.A.M.More
9	Dr.U.B.Koli
10	Prof.R.M.Shaikh
11	Prof.P.P.Kadam
12	Prof.P.S.Udgave
13	Prof.A.A.Ainapure
14	Prof.A.P.Mane
15	Prof.V.A.Patil
16	Prof.N.P.Magdum



# STAFF LIST

## DEPARTMENT STAFF LIST

Academic Year- 2024-2025

SEM- I

Sr. No.	Lab Assistant
01	Mr. V.S.Chavan
02	Mr.S.P.Khade
03	Mr. K.M.Nivade
04	Mr.A.M.Thombare

# **Roll Call List 2025-26**

Dr. J. J. Magdum Trust's  
Dr. J. J. Magdum College of Engineering, Jaysingpur.  
F. Y. B. Tech. Department  
Roll Call List  
CSE (2025-26, Sem. I, Div. A)

ROLL NO.	STUDENT NAME	BATCH	ROLL NO.	STUDENT NAME	BATCH	ROLL NO.	STUDENT NAME	BATCH
A1	AINAPURE ATHARV VIJAY	A1	A23	JADHAV SAURABH BALASO	A2	A45	MALI SANSKAR JAYWANT	A3
A2	AJAGEKAR VAISHNAVI KIRAN		A24	JAGTAP ADITYA SURESH		A46	MANE BHOOMI VINOD	
A3	ANTAD SUBHADRA CHANDRAKANT		A25	JAINAPURE ANUSHKA KIRAN		A47	MANE SHUBHAM PRAKASH	
A4	BAMANE ADITYA DNYANESHWAR		A26	JANAGOND BHAGYASHREE SANGAPPA		A48	MASHID AKIL RAJEKHAH	
A5	BAMUCHE OMSHREE ARUN		A27	KADAM SHIVANI SAMBHAJI		A49	MENDIGERI MANJULA BHAIRAPPA	
A6	BHATJODE SARVESH NITIN		A28	KAMBLE PIYUSH PAULAS		A50	METRI SHIVALEELA NAGAPPA	
A7	BHOKARE RIDDHI SACHIN		A29	KAMBLE SHREYA RAJARAM		A51	MISAL PRAGATI ANIL	
A8	BHOKARE SIDDHI SACHIN		A30	KARENNAVAR KOMAL GANGAPPA		A52	MISAL SHRUSHTI DHANANJAY	
A9	BHOKARE TEJAS TANAJI		A31	KATKAR PRASHANT UTTAM		A53	MORE SACHIN RAVSAHEB	
A10	BHOSALE SANIKA BHIMRAO		A32	KHADAKE VAISHNAVI DATTATRAY		A54	MORE SUJATA BALIRAM	
A11	BURUD PRAJWAL PRAKASH		A33	KHARAT SHREE YATIN		A55	MUDASHI ABHISHEK SADASHIV	
A12	CHAVAN KUMUDINEE SACHIN		A34	KHEMALAPURE SAGAR DILIP		A56	MUJAWAR SAMIR JABBAR	
A13	CHAVAN PRACHITA SANDIP		A35	KHUNE PRANAV PRAVIN		A57	MUJAWAR SUHANA JAVED	
A14	CHOUGULE MAYURESH SANTOSH		A36	KOLI PRANAY MAHADEV		A58	NAIKWADE PRANAV RAJENDRA	
A15	DABHADE PRAJWAL SHRIKANT		A37	KORE ATHARV AJIT		A59	NALAVADE MANTHAN LAXMAN	
A16	DANEKAR TANISHKA SHRIKANT		A38	KORGAONKAR ANANYA PRAVIN		A60	NAPIK SUSMITA GUNDAPPA	
A17	DHOK SANKET KRUSHNAT		A39	KUMBHAR RUSHIKESH SATYAJEET		A61	PATHAN MAAZKHAN MEHBOOBKHAN	
A18	DHOTRE SOHAM SANTOSH		A40	LAGALI SRUSTI VIDYADHAR		A62	PATIL AKANKSHA ASHOK	
A19	GADIWADDAR SHRUTI SANJAY		A41	LOHAR SONALI DIPAK		A63	PATIL ALOK ARUN	
A20	GHUME SUMIT SANJAY		A42	MAGDUM SHREYASH SACHIN		A64	PATIL ARPITA ANANDA	
A21	JADHAV ADITYA SHAILESH		A43	MALI POOJA RAMCHANDRA		A65	PATIL CHANCHAL ROHIDAS	
A22	JADHAV RUTUJA DNYANDEV		A44	MALI PRATIK RAJENDRA		A66	PATIL MADHURA BALWANT	

Dr. J. J. Magdum Trust's  
Dr. J. J. Magdum College of Engineering, Jaysingpur.  
F. Y. B. Tech. Department  
Roll Call List  
IT (2025-26, Sem. I, Div. B)

ROLL NO.	STUDENT NAME	BATCH	ROLL NO.	STUDENT NAME	BATCH	ROLL NO.	STUDENT NAME	BATCH
B1	ADAKE SHUBHAM SIDDHESHWAR	B1	B23	GHORPADE UTKARSH KISHOR	B2	B45	KOULAVE MRUNALI JOTIRAM	B3
B2	ADHAV SHASHIKANT SACHIN		B24	HAKKE PRUTHWIRAJ GOVIND		B46	LOHAR SAMIDHA SUNIL	
B3	AWATE PRACHI SANTOSH		B25	HASHMI SWALIHA AREHMAN		B47	MADANE TEJAS SANDIP	
B4	BACHATE VEDIKA SHIVAJI		B26	HIREMATH SWASTIK ANIL		B48	MALI TEJASWINI DATTATRAY	
B5	BARAGE VISHAL APPASAB		B27	HIRGUDE ADITYA ATUL		B49	MANE NAMRATA SANDIP	
B6	BHOSALE DHAIRYASHIL MAHADEV		B28	HIRUGADE VEDANT VISHAWAS		B50	MANE SAGAR MAHADEV	
B7	BHOSALE SHRUTI KIRAN		B29	JADHAV RUSHIKESH VIKAS		B51	MANE SAKSHI SACHIN	
B8	BHUTADA PUSHPAK SANJAYKUMAR		B30	JAGTAP SHRUTI RAMESH		B52	MANE SAMIKSHA RANJIT	
B9	BHUTEKAR SWARALI PRASHANT		B31	JAMADAR JOYA MUSTAFA		B53	MANE VIGHNESH RAVINDRA	
B10	BOGAR PRACHI SANJAY		B32	JAYKAR NIHAL GAUTAM		B54	MENDHAPURE SIDDHARTH PITAMBAR	
B11	CHAVAN PRUTHVIRAJ DHARMANNA		B33	KAMBLE ABHISHEK SUNIL		B55	MHETAR SHREYASH MAHADEV	
B12	CHIMKAR SHRUTI BABU		B34	KAMBLE ANUSHKA BABURAO		B56	MIRAJE PRANAV AMOL	
B13	CHOUGULE TEJAL BAHUBALI		B35	KAMBLE PRANAV GAJANAN		B57	MORADI SANGMESH RAJENDRA	
B14	DHOLE PRATIK DATTATRAY		B36	KAMBLE SHRIDAY RAJENDRA		B58	MORE RUTIKA TANAJI	
B15	DHOTRE PRANAV DIPAK		B37	KAMBLE VAIBHAV SHIVAJI		B59	MUJAWAR SANIYA BASHIR	
B16	DUDHAL SWAMINI SATISH		B38	KARAJANGE PRATIK RATANKUMAR		B60	MULE VINAYAK SHIVAJI	
B17	FADTARE POOJA SUBHASH		B39	KARANDE SANKET SURESH		B61	NANAVARE ANUSHKA AMOL	
B18	FARAKATE CHANDANA VITTHAL		B40	KATKAR SANSKRUTI SHANKAR		B62	PANCHARIYA BHARAT RAMSWAROOP	
B19	GAIKWAD AJAY PANDURANG		B41	KHARAT SAMADHAN LAXMAN		B63	PATEL SOHA JUNED	
B20	GANDHAKWAD MAYURI NAGORAO		B42	KHEDKAR SACHIN SUDAM		B64	PATIL AKASH HANMANT	
B21	GAWADE ADITI CHANDRASHEKHAR		B43	KOKIL PRAJWAL DHANANJAY		B65	PATIL MITALI HEMANT	
B22	GHORI SAAD AKBAR		B44	KOLI TUSHAR MADHUKAR		B66	PATIL PARTH RAJARAM	

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Dr. J. J. Magdum College of Engineering, Jaysingpur.  
F. Y. B. Tech. Department  
Roll Call List  
CSE & IT (2025-26, Sem. I, Div. C)

ROLL NO.	STUDENT NAME	BATCH	ROLL NO.	STUDENT NAME	BATCH	ROLL NO.	STUDENT NAME	BATCH
CC1	PATIL RAJWARDHAN SURESH	C1	CC21	SONAR SAKSHI ANANDA	C2	CI42	SARGAR RAHUL VIJAY	C3
CC2	PATIL SAYALI MAHESH		CC22	SURVE SUJAN SUBHASH		CI43	SARNOBAT SAYALI VINAYAK	
CC3	PATIL SOHAM SHASHIKANT		CC23	TAKALE NISHA DILIP		CI44	SASANE AMITA BALU	
CC4	PAWAR SUDARSHAN SHAHAJI		CC24	TAMBOLI SUBAHAN RAPHIKSO		CI45	SAVANT SAKSHI SHIVAJI	
CC5	PHADATARE AKANKSHA SATISH		CC25	TODKAR SAKSHI SIDDHESHWAR		CI46	SHAIKH BIBIFATIMA IMTIYAJ	
CC6	RELEKAR CHAITANYA SARANG		CC26	VHANANAVAR SHREYASH ASHOK		CI47	SHENDE SUVARNA BHIMARAO	
CC7	SALASKAR YASHASVI DILIP		CC27	VIRKAR AJAY SUBHASH		CI48	SHERKAR PRATIK BALAJI	
CC8	SAPKAL RAJ KISAN		CC28	WAGHMARE PRASHIK MACHHINDRA		CI49	SHINDE PRAPTI RAMAHARI	
CC9	SARGAR VINAYAK DATTATRAY		CC29	WAICHAL SHREYAS SHRIDHAR		CI50	SURWASE YASHRAJ DILIP	
CC10	SATPUTE SUJAL NANDKUMAR		CC30	WANDRE TUSHAR KALLAPA		CI51	SUTAR ARUSH PRADEEP	
CC11	SAWANT YASHRAJ DILIP		CC31	ZORE YASH GOVIND		CI52	SUTAR MONESHWAR RAJENDRA	
CC12	SHAH MOHIT NARENDRA		CI32	PATIL ROHAN MARUTI		CI53	SUTAR MRUNMAYEE JOTIRAM	
CC13	SHAIKH ALISHA AYUB		CI33	PATIL RUTURAJ BAJIRAO		CI54	SUTAR SHREYA SHANKAR	
CC14	SHAIKH SAFINA PARVEZ		CI34	PATIL SHRADHA KRISHNAT		CI55	SWAMI ISHA DEEPAK	
CC15	SHAIKH TAHIR SHABBIR		CI35	PAUL SAGAR SURENDRA		CI56	TARTE ABHIJIT DAYANAND	
CC16	SHARIKMASLAT NURUL IQBAL		CI36	PAWAR ABHIJIT BHARAT		CI57	TIWARI MADHAVACHARI LAXMINIWAS	
CC17	SHETTI SAKSHI JAGDISH		CI37	PAWAR SOHAM BALU		CI58	VANVE VISHAL NAVNATH	
CC18	SHINDE SHARVARI UTKARSH		CI38	PAWAR VEDANT ANANDA		CI59	VIBHUTE SIDHARTH BAJRANG	
CC19	SHINDE SHRUSHTI DEEPAK		CI39	PUKALE VEDIKA VIJAY		CI60	WADKAR TUSHAR SUBHASH	
CC20	SOLUNKE SHREYA BHAGWAT		CI40	SABLE MANISH VIJAY		CI61	WAKSHE PARTH PRAKASH	
		CI41	SALUNKHE KHUSHALI SUNIL	CI62	YAMGAR OMKAR BIRA			

Dr. J. J. Magdum Trust's  
Dr. J. J. Magdum College of Engineering, Jaysingpur.  
F. Y. B. Tech. Department  
Roll Call List  
Mechanical (2025-26, Sem. I, Div. D)

ROLL NO.	STUDENT NAME	BATCH	ROLL NO.	STUDENT NAME	BATCH	ROLL NO.	STUDENT NAME	BATCH
D1	ADURKAR MADHURA MANSING	D1	D18	GAIKWAD ONKAR SHIVAJI	D2	D35	PATIL ARYA BABASO	D3
D2	ATIGRE ABHINAV PANDURANG		D19	GHUGARE SANKET LINGAPPA		D36	PATIL ASHITOSH DIPAK	
D3	AWATADE VEDANT NAVNATH		D20	GODBOLE SANYUKTA SUVRAT		D37	PATIL NEEL SHAILENDRA	
D4	BHENDWADE PARAS SHITAL		D21	HALALU SNEHAL RAMESH		D38	PATIL PRATIK NANDKUMAR	
D5	BHOGAVE VAIBHAV BALKRUSHN		D22	JADHAV UTKARSH ARJUN		D39	PATIL RUSHIKESH SUKUMAR	
D6	BHOPALE SHUBHAM ASHOK		D23	JAMDAR DEVRAJ SACHIN		D40	PATIL SHRIVARDHAN SATISH	
D7	BHOSALE BHAVIKA RAJARAM		D24	KADAM KUNAL KIRAN		D41	PATIL VEDIKA RAHUL	
D8	BHOSALE SAHIL TUKARAM		D25	KALASE SUYASH GANESH		D42	PAWAR ADITYA BHAGWAN	
D9	CHAVAN PRANAV PRATAP		D26	KALE PRAYAG JITENDRA		D43	PHATAK PARTH AJIT	
D10	CHAVAN SHIVAM SHARAD		D27	KALKUTGI ROHAN ANIL		D44	PISE PRAJYOT SURESH	
D11	CHAVAN YASH DIGAMBAR		D28	KAMBLE AARYAN MAROTIRAO		D45	POTDAR PRANAV SACHIN	
D12	CHORMULE ROHIT VIJAY		D29	KAMBLE PRIYADARSHAN JALANDAR		D46	POWAR ATHARV RAVINDRA	
D13	CHORMULE SHREEDHAR DADASAHEB		D30	KHANDAGALE ADITYA ASHOK		D47	RANANAVARE SANKET VITTHAL	
D14	CHOTHE ANUJ SANJAY		D31	KILLEDAR SWARA MAHESH		D48	SABALE VISHVAJEET VIJAY	
D15	DESAI YASHRAJ SARJERAO		D32	KOLI AKHILESH MAHESHCHANDRA		D49	SALUNKHE OM AMOL	
D16	DEVAKAR PRAJAKTA PRAKASH		D33	MAGDUM BHAGYASHRI SHIVAPPA		D50	SHINDE ROHAN GANPATI	
D17	DHALE SHUBHAM SATISH		D34	NALAWADE KSHITUJA ADHIKRAO		D51	TRIMUKHE MAHESH JAGDISH	
				D52	VARUTE SAKSHAM SANDIP			

Dr. J. J. Magdum Trust's  
Dr. J. J. Magdum College of Engineering, Jaysingpur.  
F. Y. B. Tech. Department  
Roll Call List  
Civil (2025-26, Sem. I, Div. E)

ROLL NO.	STUDENT NAME	BATCH	ROLL NO.	STUDENT NAME	BATCH	ROLL NO.	STUDENT NAME	BATCH
E1	ASWALE SHREYASH PRAMOD	E1	E20	GOYAL MUSKAN NARESH	E2	E39	NAIK AFRIN GAPUR	E3
E2	BADAVE MAHAJAN AARTI DARSHAN		E21	HAKKE HARSHAVARDHAN SHANKAR		E40	NALAVADE HIMESHKUMAR RAM	
E3	BHADRE PRATIKSHA PRASHANT		E22	HANDIFOD SARTHAK BABASO		E41	PATANKAR YUVRAJ PRASHANT	
E4	BHANAVASE RITESH SHIVAJI		E23	J. LALRUATDIKI		E42	PATIL AJINKYA RANJIT	
E5	BHANDARI ATHARV RAJENDRA		E24	JADHAV DHANANJAY VIKAS		E43	PATIL ARJUN SUHAS	
E6	BONGALE ADITYA DEVIDAS		E25	JADHAV SAKSHI SANJAY		E44	PATIL HARSHAL UDAY	
E7	CHAVAN NITIN GANAPATI		E26	JAMADAR MOHAMMAD AMMAR ABDUL GAFFAR		E45	PATIL PURVA PRAKASH	
E8	CHAVAN TEJAS RAVINDRA		E27	JANGAM VYANKTESH PRADOSH		E46	PATIL SAMRUDDHI VINAYAK	
E9	CHOUGULE SHRIDHAR VIJAY		E28	KADAM PRATIK NITIN		E47	PATIL SUSHANT KUMAR	
E10	DALAVI HARSHVARDHAN VILAS		E29	KADAM SUJAY VIJAY		E48	PAWAR ANKITA MARUTI	
E11	DESAI SHREYA DEEPAK		E30	KUMBHAR PRATHAMESH RAJARAM		E49	PAWAR OMKAR VIDYASAGAR	
E12	DEVALEKAR FALGUNI ABHIJEET		E31	MAHADIK RANJITSINH AGNU		E50	RAJPUT PRATHAMESHSINGH MANJEETSINGH	
E13	DEVARSHI SAKSHI VIJAY		E32	MAIGURE AKSHAY BALGONDA		E51	RAVAL VIVEKANAND RAJENDRA	
E14	DHENGHE ROHINI SHANKAR		E33	MAKANDAR ABUZER RASUL		E52	SALUNKHE RAJVEER SANJAY	
E15	DURGADE BHAKTI AANAND		E34	MALI VEDIKA VIKAS		E53	SHINDE AKSHADA ASHOK	
E16	GADADE MANOJ MAHADEV		E35	MANE SHREYA SANTOSH		E54	SHINDE GAURAV SUHAS	
E17	GAVADE SAI ABASO		E36	MHAVALE INDRANIL SANJAY		E55	SHINGADE SANKET CHANDRAKANT	
E18	GHODAKE SANKALP KIRAN		E37	MOHITE SWARA RAJENDRA		E56	SUTAR TEJASVI KUMAR	
E19	GORAD VEDANT KISAN		E38	MULLA REHAN IMTIYAJ		E57	TOLE PRITAM RAJESH	
				E58	BISURE VAISHNAVI RAMDAS			

Dr. J. J. Magdum Trust's  
Dr. J. J. Magdum College of Engineering, Jaysingpur.  
F. Y. B. Tech. Department  
Roll Call List  
ETC (2025-26, Sem. I, Div. F)

ROLL NO.	STUDENT NAME	BATCH	ROLL NO.	STUDENT NAME	BATCH	ROLL NO.	STUDENT NAME	BATCH
F1	AKIWATE SAMMED SHRIDHAR	F1	F24	KADAM ATHRAV PRAKASH	F2	F46	PATIL RENUKA SAMBHAJI	F3
F2	AMBI SARVADNYA SUNIL		F25	KAMBLE SUYOG VIPIN		F47	PATIL SAMIKSHA DHARMENDRA	
F3	AWATI SHUBHAM AMOL		F26	KAPASE SAMIKSHA BAJARANG		F48	PATIL SAYALI AMAR	
F4	BANDGAR CHETAN KISAN		F27	KHENDKAR GAURI DATTATRAY		F49	PATIL SHIVRAJ SACHIN	
F5	BELE KARTIK BHARAT		F28	KHICADE ARVIND MALLIKARJUN		F50	PATIL SHRAVANI PUSHKAR	
F6	BHANDARE PRASAD DHANPAL		F29	KHOBARE ATHARV RAJU		F51	PATIL VAISHNAVI TANAJI	
F7	BHOJKAR SRUSHTI SANTOSH		F30	KOLEKAR SARTHAK DATTATRAY		F52	PATIL VIBHAVARI ARUN	
F8	BHUTE SRUSHTI DEEPAK		F31	KONGANOLI VYANKATESH SHANKAR		F53	PAWAR SUSHANT BHAUSO	
F9	CHOPADE HARSHVARDHAN RUSHIKESH		F32	MALI PRANAV JAYANT		F54	PAWAR VIGHNESH SANJAY	
F10	CHOUGULE CHINMAY AJIT		F33	MALI SAGAR SADASHIV		F55	PUJARI PRANAV MAHESH	
F11	CHOUGULE SHUBHAM RAMESH		F34	MALI SRUSHTI VITTHAL		F56	RANBHARE YASH PARASHRAM	
F12	DALVI TEJAS SANTOSH		F35	MANE MAYURESH MOHAN		F57	RANE ABHISHEK BAJIRAO	
F13	DESAI PRACHI RAMESH		F36	MORE ATHARV BALASO		F58	SALOKHE GAYATRI SURESH	
F14	FAKIR SHAHIN ABIDALI		F37	MULLA MAHEK MAHEBUB		F59	SALUNKHE ATHARV GAJANAN	
F15	GADHAVE SHRAWANI MAHADEV		F38	NANANDAGE ANIRUDHA CHANNAPPA		F60	SALUNKHE NAMRATA DATTATRAY	
F16	GHORAPADE NIKITA CHANDRAKANT		F39	NASALAPURKAR BHOOMI KALPESH		F61	SAPKAL RUTURAJ CHANDRAKANT	
F17	HADAPAD BHAGYASHRI RAJU		F40	NIKAM SHRIKANT MARUTI		F62	SAVEKAR SHUBHAM DATTATRAY	
F18	INAMDAR AKSHARA VINAY		F41	NIMBALKAR SHWETALI BAPUSAHEB		F63	SHAH SURAJ SANTOSH	
F19	IRALE PRANAV SURESH		F42	PALKAR SHUBHAM SATISH		F64	SHENDAGE SNEHAL SATISH	
F20	IRALE PRATIKSHA RAJENDRA		F43	PANDHARPOTE NAYAN DADASO		F65	TAMKHADE SHREYASH SAMPATRAO	
F21	JADHAV ATHARV VINOD		F44	PATIL AAKANKSHA ARUN		F66	VATHARE RIDDHI RAMESH	
F22	JADHAV SHIVTEJ NANASAHEB		F45	PATIL PRATIK PRAKASH		F67	WADWALE SUJAL SANTOSH	
F23	JADHAV SHREYA DEEPAK		F69	MORE GURURAJ BHAGWAN		F68	ZADAGE VEDANT VINAYAK	

Dr. J. J. Magdum Trust's  
Dr. J. J. Magdum College of Engineering, Jaysingpur.  
F. Y. B. Tech. Department  
Roll Call List  
AIDS (2025-26, Sem. I, Div. G)

ROLL NO.	STUDENT NAME	BATCH	ROLL NO.	STUDENT NAME	BATCH	ROLL NO.	STUDENT NAME	BATCH
G1	ALASE SIDDHI PRASHANT	G1	G24	KAMBLE SHREYA MOHAN	G2	G47	NIKAM SHRAVANI SANJAYKUMAR	G3
G2	BANSODE TANVI DEVANAND		G25	KAMBLE SHREYASH JAGDISH		G48	PANDHARBALE ABHISHEK VISHNU	
G3	CHAVAN HARSHAD APPA		G26	KARANDE PRIYANKA DNYANESHWAR		G49	PATEL AMAN BALEKHAN	
G4	CHAVAN KARTIK MAHESHKUMAR		G27	KARENAVAR PUNIT VIJAY		G50	PATIL ABHIJIT VIJAY	
G5	CHOUGULE DARSHAN KEMPANNA		G28	KARKHANIS HARSHADA KALIDAS		G51	PATIL BALAJI HANMANT	
G6	DESAI VIRAJ VILAS		G29	KHADE SURAJ MAHADEV		G52	PATIL BHUMIKA SANTOSH	
G7	DEVBUKHKAR ADITYA PRAVIN		G30	KHOT VAISHNAVI DEVENDRA		G53	PATIL SHREYASH SANDEEP	
G8	DEWAN RUTUJA DAYANAND		G31	KORE ASMITA AVINASH		G54	PATIL SHREYASH SANJAY	
G9	DIXIT YASHWANT YUVRAJ		G32	KOSHTI ARYA APPASO		G55	PATIL TANISHKA DADASO	
G10	DOMBALE PRACHI NANDU		G33	KOTHALE SAMMED RAVSAHEB		G56	PAWAR SAHIL SANTOSH	
G11	FARJAND KEDARI NANDKUMAR		G34	KULKARNI ATHARV NAYAN		G57	POL GAYATRI JIVANRAO	
G12	GAIKWAD RAJGAURI GAJANAN		G35	KUMBHAR NIKHIL NAMDEV		G58	QURESHI REHAN HAJISAB	
G13	GAIKWAD VEDANT DEEPAK		G36	LUNGARE SOHAM RAMESHWAR		G59	RANBHARE HARSHAL SANDIP	
G14	GAVANDI REHAN DASTAGIR		G37	MAGDUM ROHIT ANIL		G60	RATHOD VICKY SANJAY	
G15	GURAV VEDANT SHRIKANT		G38	MALI VIBHAKSHARI RAVIRAJ		G61	SARGAR PRAGATI POPAT	
G16	JADHAV ANUSHKA SUHAS		G39	MALIDWALE MUHAMMAD MUSAAB FIROZ		G62	SAWANT ADARSH RAJARAM	
G17	JADHAV HARSHAD RAJARAM		G40	MANE HARSH PRALHAD		G63	SHINDE ADITYA AJIT	
G18	JAGADALE VAISHNAVI HANMANT		G41	MANE NISHKARSH RAMESH		G64	SHINDE ANUSHKA SHASHIKANT	
G19	JAGTAP JYOTI MARUTI		G42	MANE SUMIT RAMESH		G65	SHINDE SHUBHAM SANJAY	
G20	JAMADAR MAHAMMADJAID DASTGIR		G43	MOHITE VEDIKA ASHOK		G66	SHINDE VAISHNAVI SANJAY	
G21	JAMADAR SHAHID JAVEED		G44	MOMIN SAMIYAN IRFAN		G67	VANMORE MANASI SURESH	
G22	KAMBALE SALONI CHANDRAKANT		G45	MOTHEDESAI KHANUDEV SHIVAJI		G68	VARUTE MADHURA VISHWANATH	
G23	KAMBLE PARTH DINKAR		G46	NAIKNAVARE SHRAVAN BAPUSAHEB		G69	WAGHMARE SAHIL PRAKASH	

# ACTIVITY RECORD

(COUNSELING, CO/EXTRA CURRICULAR, LEAVE)

**Counseling Staff Name:**

Date	Topic	Suggestion

**Co/Extra Curricular Activities:**

Date	Activity Name	Participation level	Outcome

**Leave Record:**

Sr. No.	From	To	Reason	Permitting Staff	Remark

