Dr. J. J. Magdum Trust's

Dr. J. J. Magdum College of Engineering,

◈ Department of Information Technology ◈

Student Information Manual (SIM)

Academic Year 2024-25 (Sem.-I)

Student Information Manual (SIM)

- Covering page
- Index

1.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 & Tele-Communication, Information Technology and M. Tech program in Civil Engineering-Construction Management.

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, and Reference books, Encyclopaedia, 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 could the students diligently in ethical, moral and academic aspects.

We imparts 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 works 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 help 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 specious 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.

2. Institute Vision & Mission

VISION

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

MISSION

- To promote learn ability of all stakeholders
- To empower rural youth to be competent in technical education and imbibe ethical values.
- To contribute to local social and economic context, leading to satisfied stakeholders.

3. Department Vision & Mission

VISION

To lead in the IT discipline through value based education, innovation skills and industry oriented curriculum to prominent of professionals and societal concerns.

MISSION

- To inculcate teaching and learning process promoting industry practices in Information Technology engineering to address universal challenges
- To integrate research and entrepreneurshipskills to address present and future challenges of the society and IT industry.
- To encourage co- and extra-curricular activities for over-all personality development of the students.
- To provide outcome based education relative recent technology.
    - Beyond syllabus
    - Training section
    - Expert lecture
    - webinars

Program Educational Objectives (PEO's)

1. To train students with good of knowledge in core areas of Information Technology and related engineering so as to analyse, design, and synthesize data and technical concepts.
2. To inculcate in students to maintain high professionalism and ethical standards, effective oral and written communication skills, to work as part of teams.
3. To provide our graduates with learning environment awareness of the life-long learning needed for a successful professional career and to introduce them to written ethical codes and guidelines, perform excellence, leadership and demonstrate good citizenship.
4. To provide students with academic environment that is aware of excellence, leadership, entrepreneurship, ethical responsibility and ability to work in multidisciplinary teams.
5. To train students with excellent scientific and engineering knowledge so as to understand, analyse, design and create products and solutions for Software engineering problems.

Program Outcomes (POs)

At the end of successful completion of program, the graduates will be able to,

1. **Engineering Knowledge**: Apply knowledge of mathematics, science, engineering Fundamentals and an engineering specialization to the solution of complex engineering problems.
2. **Problem Analysis**: Identify, formulate, research literature and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.
3. **Design/Development of Solutions**: Design solutions for complex engineering problems and design system components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal and environmental considerations.
4. **Conduct investigations** of complex problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of information to provide valid conclusions.
5. **Modern Tool Usage**: Create, select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modelling to complex engineering activities with an under-standing of the limitations.
6. **The Engineer and Society**: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.
7. **Environment and Sustainability**: Understand and the impact of professional engineering solutions in societal and environmental contexts and demonstrates knowledge of and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
9. **Individual and Teamwork**: Function effectively as in visual, and as a member or leader in diverse teams and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions.
11. **Project Management and Finance**: Demonstrate knowledge and understanding of engineering and management principles and apply these too nods on work, as a member and leader instead, to manage projects and in multidisciplinary environments.
12. **Lifelong Learning**: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological

Program Specific Outcomes (PSO)

1. To design and implement solutions for network security, database security and software quality as per industry standards
2. To design and implement various services for operating systems, compiler libraries and programming applications
3. To enhance the management skills and organizational behaviour in IT industry

4. Students role and Responsibilities

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.

5. Laboratory and Classroom Instructions

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 University 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 behaviours

Computer Laboratory Instructions:

- Students must present a valid ID card before entering the computer 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 computer lab are 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 computer lab, however note book may be allowed.
- Lab timing will be as per the academic time table of different classes
- Every user must make an entry in the Computer Lab Register properly.
- Each student or visitor must take mobile phones in “Switched Off” mode while entering and or working in Computer 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 computer lab.
- The use of cell phones is prohibited in the computer 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.
- Students found Internet surfing or chatting for personal reasons may be asked to leave. Preference is given to students doing course work over those engaged in personal computer use.
- Personal files are not to be stored on the local drive C. Students are responsible for providing their own means of digital storage. All lab computers are set up to remove any data stored or any programs installed by users.

6. Department Academic Planner

Academic Planner 2024-25 (Semester I)

Sr No	Activity	Planned Date
1	Commencement of Semester I	1st of July 2024
2	Load Distribution	
3	Time table	
4	Commencement of Theory lectures for SY / TY/ Final Year	1st of July 2024
5	a. Course Outline by individual faculty b. Distribution of Academic Diary c. Lecture Plan duly signed by HoD d. Department Academic Planner Submission	
6	DRC meeting for Synopsis approval	22 July 2024
7	Alumni Talk	20th August 2024
8	CMC Meeting 1 (TY & B.Tech)	29th to 31st July
9	Expert Lecture (SY students)-	
10	Academic Audit for AY 2023-24	
11	CIE – I for SY / TY/ Final Year	16th – 17th August
12	Community Service activity	14th August
13	TPC training (TY & B.Tech	21st To 25th Aug
14	Mid Semester Student Feedback - I	19th August 2024
15	CMC Meeting 2 (TY & B.Tech)	29th to 31st Aug
16	R&D Synopsys Presentation	27th August
17	Guest lecture under Competitive exam-	28th August
18	Industrial Visit (SY)-	29th August
19	FDP	31st August
20	Value Added courses under IQAC	30th August
21	Phase-I First Assessment of Project Work	
22	Community Service	3th September
23	Guest lecture under higher studies	5th September
24	Augmentation Technical Workshop	9th Sept

25	Industrial Visit (TY)-	10th Sept
26	Expert Lecture (Btech students)-	19th September
27	Project Progress Presentation I	21st Sept
28	CMC Meeting 3 TY & B.Tech	29th to 30st Sept
29	Community Service	25th September
30	Augmentation Cell Technical event	9th Sept
31	Departmental Academic Advisory Board (DAB) Meet.	
32	VAP SY	28th September
33	CIE – II SY / TY/ Final Year	30th Sep– 1st Oct
34	End-term Feedback(SY, TY & B.Tech)-	2nd Oct 2024
35	Expert Lecture (TY students)-	10th October 2024
36	Industrial Visit (BTech)-	10th Oct 2024
37	Summative feedback	
38	Project Progress Presentation II	14th October 2024
39	Parents Meet (SY,TY,BE)	18th October 2024
40	End of Th/Pr for TY/Final Year	11th October 2024
41	Final submission for TY/Final Year	Second Week of October
42	Academic Audit (Semester I)	
43	End Semester Student Feedback - II	
44	End of Th/Pr for TY/Final Year	
45	Final submission for TY/Final Year	
46	SUK theory examination	
47	End of Semester I	

Unit Wise Quiz	• After Completion Of Each Unit
Proctor Report	• Report at twice in a Month
CMC	• End of month
Training and Placement Activity	• Two lectures on working Saturday for S.Y. and T.Y. of all branches
Higher Studies Cell Activity	• Per Semester two Sessions
Entrepreneurship Cell activity	• One Lecture per month per department preferably on first or third Saturday (Max. two lectures per semester)
Competitive Examination Cell Activity	• Two Sessions per month
Industrial visit faculty	• One day per month or 3 days per semester

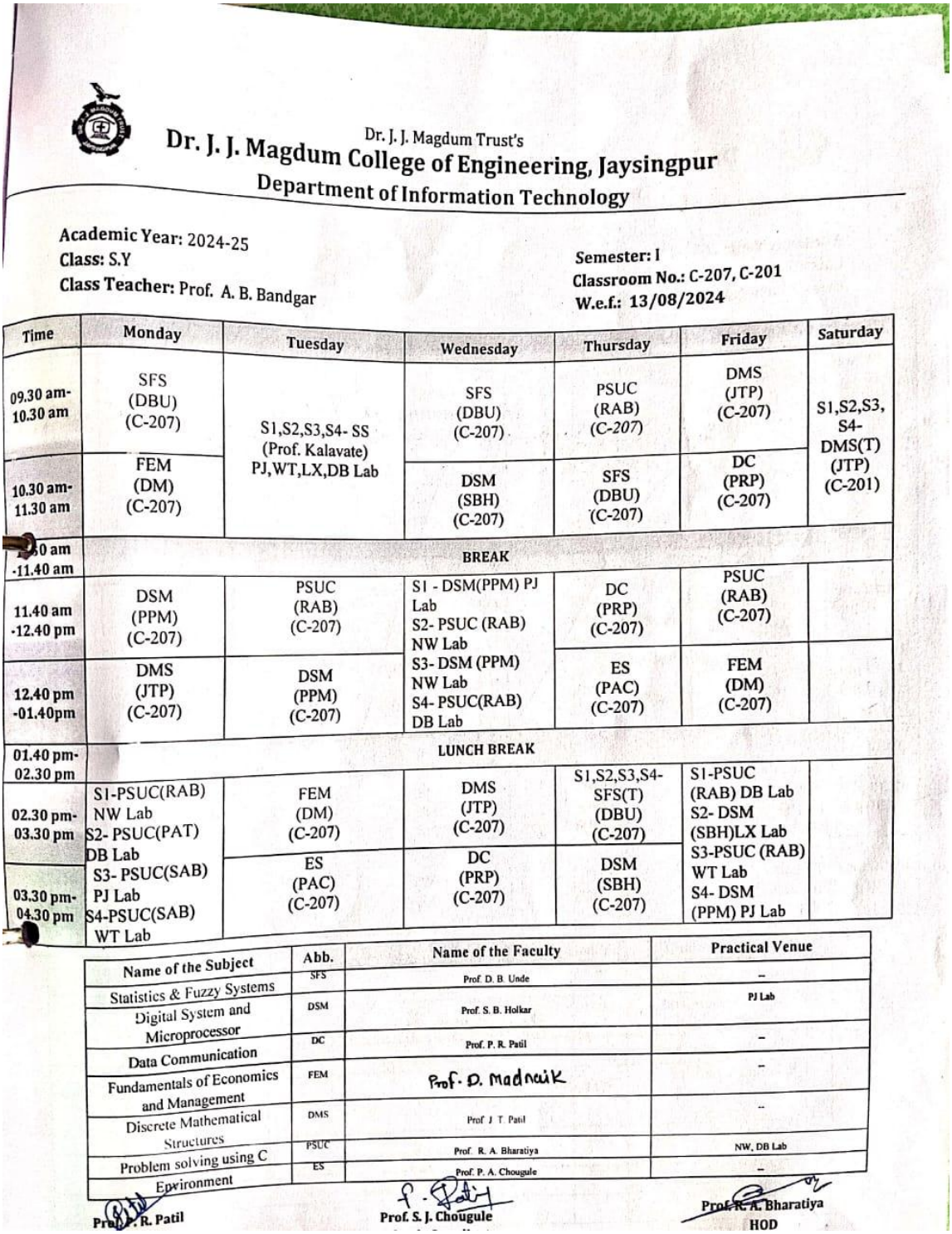
	Academic Activities
	Students Related Activities
	R& D Cell Activities
	Faculty Development Cell Activities

Holiday's

Sr. No.	Particular	Date
1	Ed-e-Milad	16th Sept
2	Anant Chaturthi	17th Sept
3	Mahatma Gandhi Jayanti	2nd October
4	Dasara	12th October
5	Diwali	28th to 2nd November
6	Guru Nanak Jayanti	15th November
7	X-Mas	25th December

7.Department Time Table

Class: SY-IT



Dr. J. J. Magdum Trust's

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

Department of Information Technology

Academic Year: 2024-25
Class: S.Y
Class Teacher: Prof. A. B. Bandgar

Semester: I
Classroom No.: C-207, C-201
W.e.f.: 13/08/2024

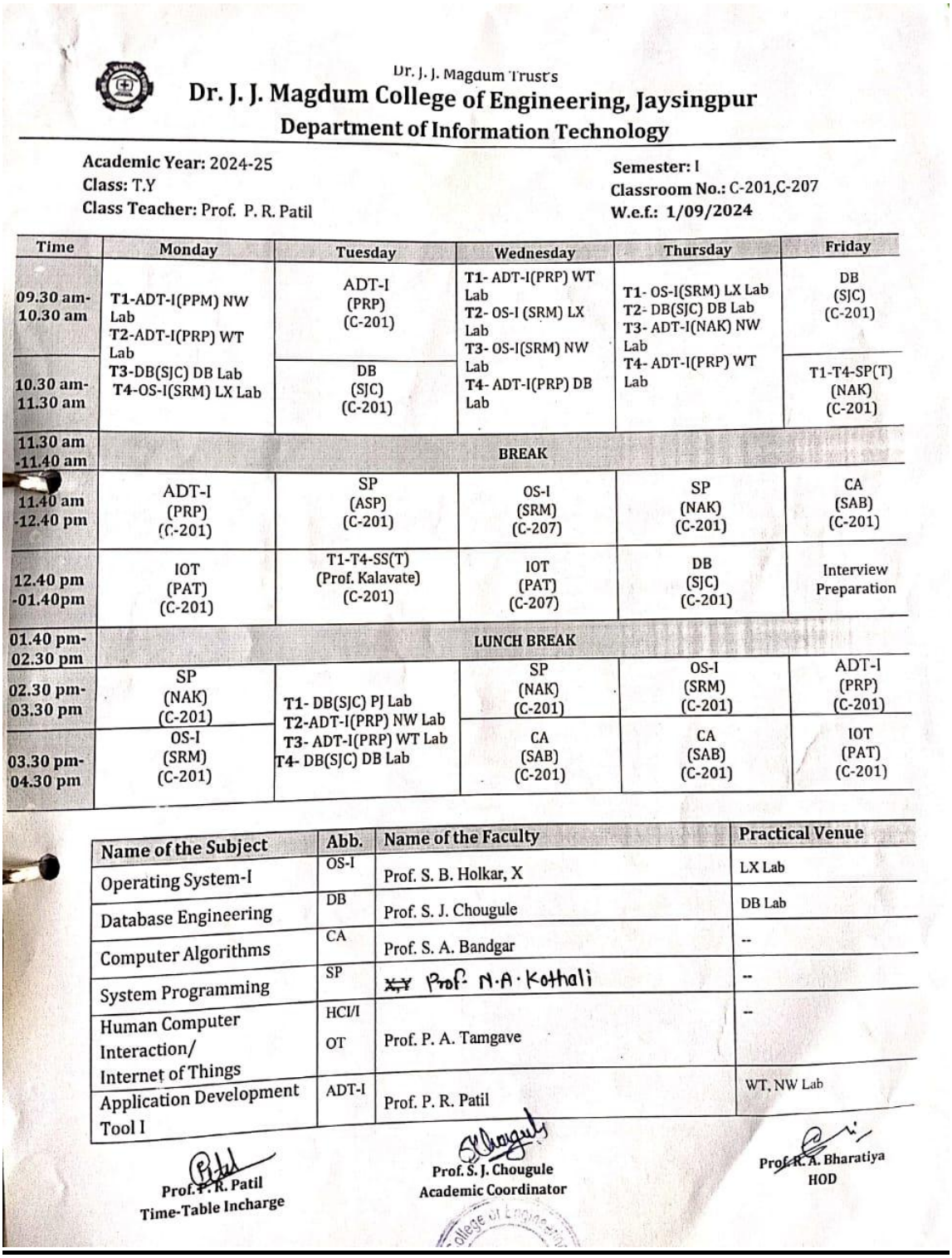
Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
09.30 am-10.30 am	SFS (DBU) (C-207)	S1,S2,S3,S4- SS (Prof. Kalavate) PJ,WT,LX,DB Lab	SFS (DBU) (C-207)	PSUC (RAB) (C-207)	DMS (JTP) (C-207)	S1,S2,S3, S4- DMS(T) (JTP) (C-201)
10.30 am-11.30 am	FEM (DM) (C-207)		DSM (SBH) (C-207)	SFS (DBU) (C-207)	DC (PRP) (C-207)	
11.30 am -11.40 am	BREAK					
11.40 am -12.40 pm	DSM (PPM) (C-207)	PSUC (RAB) (C-207)	S1 - DSM(PPM) PJ Lab S2- PSUC (RAB) NW Lab S3- DSM (PPM) NW Lab S4- PSUC(RAB) DB Lab	DC (PRP) (C-207)	PSUC (RAB) (C-207)	
12.40 pm -01.40pm	DMS (JTP) (C-207)	DSM (PPM) (C-207)		ES (PAC) (C-207)	FEM (DM) (C-207)	
01.40 pm-02.30 pm	LUNCH BREAK					
02.30 pm-03.30 pm	S1-PSUC(RAB) NW Lab S2- PSUC(PAT) DB Lab	FEM (DM) (C-207)	DMS (JTP) (C-207)	S1,S2,S3,S4- SFS(T) (DBU) (C-207)	S1-PSUC (RAB) DB Lab S2- DSM (SBH)LX Lab S3-PSUC (RAB) WT Lab S4- DSM (PPM) PJ Lab	
03.30 pm-04.30 pm	S3- PSUC(SAB) PJ Lab S4-PSUC(SAB) WT Lab	ES (PAC) (C-207)	DC (PRP) (C-207)	DSM (SBH) (C-207)		

Name of the Subject	Abb.	Name of the Faculty	Practical Venue
Statistics & Fuzzy Systems	SFS	Prof. D. B. Unde	–
Digital System and Microprocessor	DSM	Prof. S. B. Holkar	PJ Lab
Data Communication	DC	Prof. P. R. Patil	–
Fundamentals of Economics and Management	FEM	Prof. D. Madnaik	–
Discrete Mathematical Structures	DMS	Prof. J. T. Patil	–
Problem solving using C	PSUC	Prof. R. A. Bharatiya	NW, DB Lab
Environment	ES	Prof. P. A. Chougule	–

Prof. S. J. Chougule

Prof. R. A. Bharatiya
HOD

Class: TY-IT



Dr. J. J. Magdum Trust's

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

Department of Information Technology

Academic Year: 2024-25
Class: T.Y
Class Teacher: Prof. P. R. Patil

Semester: I
Classroom No.: C-201,C-207
W.e.f.: 1/09/2024

Time	Monday	Tuesday	Wednesday	Thursday	Friday
09.30 am-10.30 am	T1-ADT-I(PPM) NW Lab T2-ADT-I(PRP) WT Lab T3-DB(SJC) DB Lab T4-OS-I(SRM) LX Lab	ADT-I (PRP) (C-201)	T1- ADT-I(PRP) WT Lab T2- OS-I (SRM) LX Lab T3- OS-I(SRM) NW Lab T4- ADT-I(PRP) DB Lab	T1- OS-I(SRM) LX Lab T2- DB(SJC) DB Lab T3- ADT-I(NAK) NW Lab T4- ADT-I(PRP) WT Lab	DB (SJC) (C-201)
10.30 am-11.30 am		DB (SJC) (C-201)			T1-T4-SP(T) (NAK) (C-201)
11.30 am -11.40 am	BREAK				
11.40 am -12.40 pm	ADT-I (PRP) (C-201)	SP (ASP) (C-201)	OS-I (SRM) (C-207)	SP (NAK) (C-201)	CA (SAB) (C-201)
12.40 pm -01.40pm	IOT (PAT) (C-201)	T1-T4-SS(T) (Prof. Kalavate) (C-201)	IOT (PAT) (C-207)	DB (SJC) (C-201)	Interview Preparation
01.40 pm-02.30 pm	LUNCH BREAK				
02.30 pm-03.30 pm	SP (NAK) (C-201)	T1- DB(SJC) PJ Lab T2-ADT-I(PRP) NW Lab T3- ADT-I(PRP) WT Lab T4- DB(SJC) DB Lab	SP (NAK) (C-201)	OS-I (SRM) (C-201)	ADT-I (PRP) (C-201)
03.30 pm-04.30 pm	OS-I (SRM) (C-201)		CA (SAB) (C-201)	CA (SAB) (C-201)	IOT (PAT) (C-201)

Name of the Subject	Abb.	Name of the Faculty	Practical Venue
Operating System-I	OS-I	Prof. S. B. Holkar, X	LX Lab
Database Engineering	DB	Prof. S. J. Chougule	DB Lab
Computer Algorithms	CA	Prof. S. A. Bandgar	--
System Programming	SP	~~X,Y~~ Prof. N.A. Kothali	--
Human Computer Interaction/ Internet of Things	HCI/I OT	Prof. P. A. Tamgave	--
Application Development Tool I	ADT-I	Prof. P. R. Patil	WT, NW Lab

Prof. P. R. Patil
Time-Table Incharge

Prof. S. J. Chougule
Academic Coordinator

Prof. R. A. Bharatiya
HOD

Class: BTech

Dr. J. J. Magdum Trust's

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

Department of Information Technology

Academic Year: 2024-25
Class: B.Tech
Class Teacher: Prof. S. B. Holkar

Semester: I
Classroom No.: C-201,C-207
W.e.f.: 1/09/2024

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Sat
09.30 am-10.30 am	ADS (SAB) (C-201)	MC (NAK) (C-207)	WT (JTP) (C-201)	DC (PAT) (C-201)	B1- ADS(SAB)PJ Lab B2- WT D.Madnaik) NW Lab B3-PJ B4- DC(PAT) DB Lab	B1- WI(SA B2- WI(NA B3- WI(NA
10.30 am-11.30 am	DC (PAT) (C-201)	ADS (SAB) (C-207)	DC (PAT) (C-201)	WT (JTP) (C-201)		
11.30 am - 11.40 am	BREAK					
11.40 am - 12.40 pm	B1- WT(D.Madnaik) NW Lab B2- PJ B3-ADS(SAB)DB Lab B4-WT (D.Madnaik) WT Lab	B1- WT(JTP)WT Lab B2- ADS(SAB)PJ Lab B3- DC(PAT) DB Lab B4- WT(JTP)NW Lab	MC (NAK) (C-201)	B1-DC(PAT) DB Lab B2 - WT(JTP)NW Lab B3- WT(JTP)WT Lab B4- ADS(SAB)DB Lab	B1,B2,B4- MC(T)(NAK)(Labs) B3-MC(T)(PAT)DB Lab B4-MC(T)(X) PJ Lab	B1- WI(SA B2- WI(NA B3- WI(NA B4- WI(NA
12.40 pm - 01.40pm			DS (SJC) (C-201)		MC (NAK) (C-201)	
01.40 pm-02.30 pm	LUNCH BREAK					
02.30 pm-03.30 pm	DS (SJC) (C-207)	WT (JTP) (C-201)	B1- PJ B2- DC(PAT) DB Lab B3- WT (D.Madnaik) NW Lab B4- PJ	B1-B4-PJ	DS (SJC) (C-207)	B4-WI (NAK)
03.30 pm-04.30 pm	B1-B4-DS(T) (SJC) (C-207)	DC (PAT) (C-201)			ADS (SAB) (C-207	

Name of the Subject	Abb.	Name of the Faculty	Practical Venue
Distributed Computing	DC	Prof. P. A. Tamgave (PAT)	DB Lab
Mobile Computing	MC	Prof. N.B. Kothali	--
Advanced Database Systems	ADS	Prof. S. A.Bandgar (SAB)	PJ Lab
Data Science	DS	Prof. S. J. Chougule (SJC)	--
Web Technology	WT	Prof. J. T. Patil (JTP)	WT,NW Lab
Project – I	PJ		ALL LAB
Winter Internship	WI	Prof. S. B. Holkar,(SBH) Prof. S. A. Bandgar(SAB), X	--

Prof. R. Patil
Time-Table Incharge

Prof. S. J. Chougule
Academic Coordinator

Prof. R. A. Bharatiya
HOD

8.Structure of Syllabus

Class: SY-IT

SECOND YEAR INFORMATION TECHNOLOGY – CBCS PATTERN

Sr. No	Course (Subject Title)	TEACHING SCHEME									EXAMINATION SCHEME											
		THEORY			TUTORIAL			PRACTICAL			THEORY					PRACTICAL			TERM WORK		
		Credits	No. of Lecture	Hours	Credits	No. of Lecture	Hours	Credits	No. of Lecture	Hours	Hours	Mode	Marks	Total Marks	Min	Hours	Max	Min	Hours	Max	Min
1	BSC-IT301	3	3	3	1	1	1	-	-	-		CIE ESE	30 70	100	40	As per BOS Guidelines	-	-	As per BOS Guidelines	25	10
2	PCC- IT302	4	4	4	-	-	-	1	2	2		CIE ESE	30 70	100	40		50	20		25	10
3	PCC- IT303	3	3	3	-	-	-	-	-	-		CIE ESE	30 70	100	40		-	-		-	-
4	PCC- IT 304	3	3	3	-	-	-	-	-	-		CIE ESE	30 70	100	40		-	-		-	-
5	PCC - IT 305	3	3	3	1	1	1	-	-	-		CIE ESE	30 70	100	40		-	-		25	10
6	PCC- IT 306	3	3	3	-	-	-	2	4	4		-	-	-	-		50	20		50	20
7	PW- IT 307	-	-	-	-	-	-	1	2	2							50	20		25	10
	TOTAL	**19**	**19**	**19**	**2**	**2**	**2**	**4**	**8**	**8**				**500**			**150**			**150**	
SEMESTER –IV																					
1	PCC- IT 401	3	3	3				1	2	2		CIE ESE	30 70	100	40	As per BOS Guidelines	50	20	As per BOS Guidelines	25	10
2	PCC- IT402	3	3	3				-	-	-		CIE ESE	30 70	100	40		-	-			
3	PCC- IT403	3	3	3	-	-	-					CIE ESE	30 70	100	40						
4	PCC-IT404	3	3	3	1	1	1					CIE ESE	30 70	100	40					25	10
5	PCC- IT405	3	3	3	-	-	-					CIE ESE	30 70	100	40						
6	PCC- IT406	2	2	2	-	-	-	2	4	4		-	-	-	-		50	20		50	20
7	PW- IT407							1	2	2							50	20		50	20
8	MC- IT408	2	2	2	-	-	-	1	2	2		CIE ESE	30 70	100	10 25		-	-		-	-
	TOTAL	**19**	**19**	**19**	**1**	**1**	**1**	**5**	**10**	**10**				**600**			**150**			**150**	
	TOTAL	**38**	**38**	**38**	**3**	**3**	**3**	**9**	**18**	**18**				**1100**			**300**			**300**	

CIE- Continuous Internal Evaluation
ESE – End Semester Examination

• Candidate contact hours per week : 30 Hours(Minimum)	• Total Marks for S.E. Sem III & IV : **800 + 900 =1700**
• Theory and Practical Lectures : 60 Minutes Each	• Total Credits for S.E. Sem III & IV : **50 (SEM-I: 25 + SEM – II:25)**
• In theory examination there will be a passing based on separate head of passing for examination of CIE and ESE.	
• There shall be separate passing for theory and practical (term work)courses.	

Note:

1. **BSC-IT**: Basic Science Course - Information Technology arecompulsory.
2. **ESC-IT:** Engineering Science Course - Information Technology arecompulsory.
3. **PCC-IT:** Professional Core Course – Information Technology arecompulsory.
4. **MC-EV:** Mandatory Course - Environmental Studies which is compulsory for theory 70 marks and project work30 marks.

Semester-III

Sl. No	Code No.	Subject	Semester	Credits
1.	BSC-IT301	Statistics & Fuzzy Systems	3	4
2.	PCC- IT302	Digital System and Microprocessor	3	5
3.	PCC- IT303	Data Communication	3	3
4.	PCC- IT304	Fundamentals of Economics and Management	3	3
5.	PCC- IT 305	Discrete Mathematical Structures	3	4
6.	PCC- IT306	Problem solving using C	3	5
7.	PW- IT307	Soft Skills	3	1

Semester -IV

Sl. No	Code No.	Subject	Semester	Credits
1.	PCC- IT401	Computer Network	4	4
2.	PCC-IT402	Computer Organization and Architecture	4	3
3.	PCC-IT403	Data Structures	4	3
4.	PCC-IT404	Theory of computation	4	4
5.	PCC-IT405	Software Engineering	4	3
6.	PCC- IT406	Object Oriented Programming	4	4
7.	PW-IT407	Mini Project	4	1
8.	MC-IT408	Environmental Studies	4	3

Class TY-IT

Sr. No.	Course Subject / Title	TEACHING SCHEME							EXAMINATION SCHEME							
		THEORY			TUTORIAL		PRACTICAL		THEORY				ORAL / PRACTICAL		TERMWORK	
		Credits	N0. Of Lectures	Hours	Credits	No. of Hours	Credits	No. of Hours	mode	marks	Total Marks	MIN.	MAX	MIN.	MAX	MIN.
	THIRD YEAR INFORMATION TECHNOLOGY - CBCS PATTERN															
	SEMESTER - V															
1	**PCC-IT501** Operating System-I	3	3	3			1	2	CIE ESE	30 70	100	40			50	20
2	**PCC- IT502** Database Engineering	3	3	3			1	2	CIE ESE	30 70	100	40	25	10	50	20
3	**PCC- IT503** Computer Algorithms	3	3	3					CIE ESE	30 70	100	40				
4	**PCC- IT504** System Programming	4	4	4	1	1			CIE ESE	30 70	100	40			25	10
5	**OEC- IT505** Human Computer Interaction **OEC- IT506** Internet of Things	3	3	3					CIE ESE	30 70	100	40				
6	**PCC- IT507** Application Development Tool I	3	3	3			2	4					50	20	50	20
7	**HM-IT508** Soft Skill				1	1							25	10	25	10
	Total (SEM –V)	***19***	***19***	***19***	***2***	***2***	***4***	***8***			***500***		***100***		***200***	

Sr. No.	Course Subject / Title	TEACHING SCHEME							EXAMINATION SCHEME							
		THEORY			TUTORIAL		PRACTICAL		THEORY				ORAL / PRACTICAL		TERMWORK	
		Credits	N0. Of Lectures	No. of Hours	Credits	No. of Hours	Credits	No. of Hours	mode	marks	Total Marks	MIN.	MAX	MIN.	MAX	MIN.
	THIRD YEAR INFORMATION TECHNOLOGY - CBCS PATTERN															
	SEMESTER – VI															
1	**PCC-IT601** Computer Graphics	3	3	3			1	2	CIE ESE	30 70	100	40			25	10
2	**PCC- IT602** Information Security	4	4	4			1	2	CIE ESE	30 70	100	40			25	10
3	**PCC- IT603** Internet Technology	4	4	4			1	2	CIE ESE	30 70	100	40	50	20	25	10
4	**PCC- IT604** Operating System II	3	3	3	1	1			CIE ESE	30 70	100	40			25	10
5	**OEC- IT605** Cyber Security **OEC- IT606** E- Commerce & Digital Marketing	3	3	3					CIE ESE	30 70	100	40				
6	**PCC- CS607** Application Development Tool II	2	2	2			1	2					50	20	25	10
7	**PW- IT608** Seminar						1	2					50	20	25	10
	Total (SEM –VI)	***19***	***19***	***19***	***1***	***1***	***5***	***10***			***500***		***150***		***150***	
	Total (SEM - V+ SEM - VI)	**38**	**38**	**38**	**3**	**4**	**9**	**18**			**1000**		**250**		**350**	

Class BTech-IT

FINAL YEAR INFORMATION TECHNOLOGY – CBCS PATTERN

SEMESTER – VII

Sr. No	Course (Subject Title)	TEACHING SCHEME									EXAMINATION SCHEME										
		THEORY			TUTORIAL			PRACTICAL			THEORY					PRACTICAL			TERM WORK		
		Credits	No. of Lecture	Hours	Credits	No. of Lecture	Hours	Credits	No. of Lecture	Hours	Hours	Mode	Marks	Total Marks	Min	Hours	Max	Min	Hours	Max	Min
1	PCC-IT701	4	4	4	-	-	-	1	2	2		CIE	30	100	40	As per BOS Guidelines	-	-		50	20
												ESE	70								
2	PCC-IT702	3	3	3	1	1	1	-	-	-		CIE	30	100	40		-	-		50	20
												ESE	70								
3	PCC-IT703	3	3	3	-	-	-	1	2	2		CIE	30	100	40		50	20		50	20
												ESE	70								
4	PCE-IT704	3	3	3	1	1	1	-	-	-		CIE	30	100	40		-	-		25	10
												ESE	70								
5	PCC-IT705	3	3	3	-	-	-	2	4	4							50	20		50	20
6	PW-IT706	-	-	-	-	-	-	2	4	4		-	-	-	-		50	20		25	10
7	WI-IT707	-	-	-	-	-	-	1	2	2		-	-	-	-		-	-		-	-
	TOTAL	**16**	**16**	**16**	**2**	**2**	**2**	**7**	**14**	**14**				**400**			**150**			**250**	

SEMESTER –VIII

1	PCC-IT801	4	4	4	-	-	-	1	2	2		CIE	30	100	40	As per BOS Guidelines	50	20		50	20
												ESE	70								
2	PCC-IT802	4	4	4	1	1	1	-	-	-		CIE	30	100	40					25	10
												ESE	70								
3	PCE-IT803	3	3	3	1	1	1					CIE	30	100	40					25	10
												ESE	70								
4	PCE-IT804	3	3	3	1	1	1	-	-	-		CIE	30	100	40		-	-		25	10
												ESE	70								
5	PCC-IT805	3	3	3	-	-	-	2	4	4		-	-	-	-		50	20		50	20
6	PW-IT806	-	-	-	-	-	-	2	4	4		-	-	-	-		50	20		25	10
7	WI-IT807	-	-	-	-	-	-	-	-	-		-	-	-	-		-	-		50	20
	TOTAL	**17**	**17**	**17**	**3**	**3**	**3**	**5**	**10**	**10**				**400**			**150**			**250**	
	TOTAL	**33**	**33**	**33**	**5**	**5**	**5**	**12**	**24**	**24**				**800**			**300**			**500**	

CIE- Continuous Internal Evaluation

ESE – End Semester Examination

• Candidate contact hours per week : 30 Hours (Minimum)	• Total Marks for B.E. Sem VII & VIII : **800 + 800 = 1600**
• Theory and Practical Lectures : 60 Minutes Each	• Total Credits for B.E. Sem VII & VIII : **50 (SEM-I: 25, WI + SEM – II: 25)**
• In theory examination there will be a passing based on separate head of passing for examination of CIE and ESE.	
• There shall be separate passing for theory and practical (term work) courses.	

Note :

1. **PCC-IT:** Professional Core Course – Information Technology are compulsory.
2. **PCE-IT:** Professional Core Elective – Information Technology are compulsory.
3. **MC-IT:** Mandatory Course- Information Technology are compulsory.
4. **SI-IT:** Summer Internship- Information Technology are compulsory.
5. **PW-IT:** Project Work- Information Technology are compulsory

Semester -VII

Sr. No	Code No.	Subject		Semester	Credits
1.	PCC-IT701	Distributed Computing		7	5
2.	PCC-IT702	Mobile Computing		7	4
3.	PCC-IT703	Advanced Database Systems		7	4
4.	PCE-IT704	Elective –I	Image processing	7	4
			Soft Computing		
			Data Science		
5.	PCC-IT705	Web Technology		7	5
6.	PW-IT706	Project – I		7	2
7.	WI-IT707	Winter Internship		7	1

9.Subject Details

SYIT

Subject: Digital System and Microprocessor

Chapter No.	Lect No.	Details of syllabus planned
Ch.1	**Fundamental of Digital System**	
	01	Analog and digital systems, representation of signed numbers,
	02	2's complement arithmetic, BCD addition & subtraction,
	03	octal &Hexadecimal addition and subtraction,
	04	Derived gates.
Ch 2	**Boolean algebra & combinational logic design**	
	5	Reduction of Boolean expressions, Boolean function representation, expansion of Boolean
	6	expression (standard SOP & POS),
	7	simplification of Boolean expressions using K-map(up to 5 variable),
	8	Multiplexer, implementation of expression using MUX,
	9	Demultiplexer, decoder(74138),
	10	BCD to 7 segment decoder.
	11	Reduction of Boolean expressions, Boolean function representation, expansion of Boolean
Ch3	**Sequential Logic Design**	
	12	Classification, Flip-Flops(S-R, J-K, T, D) using gates,
	13	Race around condition Master-Slave JK
	14	Flip Flop, Counters (Asynchronous & Synchronous), Design examples,
	15	Shift registers,
	16	Excitation table.
	17	Shift registers,
Ch 4	**8085 Microprocessor Architecture & Memory Interfacing**	
	18	The 8085 MPU, Microprocessor communication and bus timing,
	19	De-multiplexing address and Data bus, Generating control signals,
	20	The 8085 Architecture , op-code fetch machine cycle,
	21	Memory read and writes machine cycle.
	22	Memory interfacing-memory structure,

	23	Memory interfacing & address decoding

Ch 5	**8085 Programming techniques**	
	24	8085 instruction groups, addressing modes writing and
	25	Execution assembly language program,
	26	counters & delays,
	27	stack, Instruction related to stack execution of CALL and RET,
	28	The 8085 interrupt , RST instructions,
	29	vectored interrupts,
	30	RIM and SIM
Ch6	**Interfacing I/O devices &Introduction 8086:**	
	31	Basic interfacing concepts,
	32	peripherals i/o instructions
	33	IN, OUT, I/ O execution,
	34	Memory mapped I/O,
	35	I/O mapped I/O,
	36	Architecture of 8086.

Experiment List

Exp. No.	Name of Experiment	Nature of Experiment	COs
01	To Convert Different number form.	Non-Performing	CO1
02	To study and verify the truth table of basic gates.	Performing	CO2
03	To study and verify universal gate.	Performing	CO2
04	To study and verify Boolean algebra &De Morgan's theorem.	Performing	CO2
05	To study half and full adder.	Performing	CO2
06	To study half and full subtractor.	Performing	CO2
07	To study the MUX and DEMUX.	Performing	CO2
08	To study the R-S and J-K flip flop.	Performing	CO2
09	To study the 8085 microprocessor.	Non-Performing	CO3
10	WAP to perform 8 bit addition & subtraction.	Performing	CO4
11	WAP to perform transfer a data block without overlap using 8085	Performing	CO4

12	WAP to perform block exchange	Performing	CO4
13	WAP to perform multiplication	Performing	CO4
14	WAP to perform largest number	Performing	CO4

Recommended Books:

TEXT BOOKS:

1. Fundamental of Digital Circuits- A. Anand Kumar, 2nd Edition, PHI private Limited. (Chapter1,2,3)
2. Microprocessor architecture, programming & applications- Ramesh S. Gaonkar, New Age International publication. (Chapter4,5,6)
3. The Microcomputer systems: The 8086/8088 Family - Yu Cheng Liu , Glenn A. Gibson (PHILtd*)*

REFERENCE BOOKS:

1. Digital fundamentals -Floyd & Jain, , Pearson education, eighth edition,2007
2. Digital Design –Morris Mano, PearsonEducation
3. Modern Digital Electronics, R.P.Jain, 3rd Edition, Tata McGraw-Hill,2003
4. Digital systems, principles and applications – Ronald Tocci, Neal S. Widmer, Gregory Moss
5. (Pearson Education) 9 thEdition.
6. Microprocessors and Microcontrollers - N. Senthi Kumar, M. SaravananandS. Jeevananthan (Oxford UniversityPress)

Subject: Data Communication

Chapter No	No. of Lecture	Topics to be covered in each Lecture
1	1	Data Communication–Definition, Components
	2	Data representation, Data Flow
	3	Networks – Definition, Uses
	4	Topologies,Categories
	5	Internet–History, ISP hierarchy
	6	Protocols & Standards–Protocols,Standards,StandardsOrganizations
2	7	Analog and Digital Data
	8	Analog and Digital Signals
	9	Transmission Impairments
	10	Data ratelimits
	11	Performance
3	12	Digital to digital conversion

	13	Block coding
	14	Scrambling
	15	Analog to digital conversion
	16	Pulse code modulation
	17	ASK,FSK
	18	PSK and AM
	19	FM,PM
	20	Delta modulation
4	23	Parallel and serial transmission
	24	Asynchronous and synchronous transmission
	25	Multiplexing
	26	Wavelength, time division
	27	Switching–circuit switched, packet switched and message switched
	28	Structure of switches
5	29	Layered architecture
	30	OSI reference model
	31	TCP/IP model
	32	ATM model
	33	Physical port
	34	Logical port
6	35	Twisted pair cable
	36	Coaxial and OFC
	37	Propagation modes
	38	Radio waves, microwave, infrared
	39	Cabling, connectors
	40	NIC, repeaters
	41	Hub, switches, bridges
	42	Routers and gateways

Recommended Books:

Text Books:

1. Data Communication and networking–BehrouzFourozan,4th Edition,TMGH

Reference Books:

1. Data and Computer Communications–WilliamsStallings,5th Edition,PHI
2. Computer Networks–A.S.Tanebaum,3rd Edition,PHI
3. Data Communication and Networks: An Engineering Approach by Irvine, Wiley India Ltd.

Subject: Fundamentals of Economics and Management

Ch. No.	Lect No.	Details of syllabus planned
Ch.1		Introduction to Economics
	01	Definitions,ScopeofEconomics(Micro,Macro,InternationalIndustrial)
	02	Scope of Economics(Environmental, Public Finance,ManagerialEconomics)
	03	Managerial Economics meaning definition and decision making process
	04	Economic Resources
	05	Types offirm
	06	Goods and Services
	07	Utility
	08	Value and Wealth
Ch.2		Demand and Supply Analysis
	09	Meaning of Demand, Types
	10	Determinants, Demand Function
	11	Law of Demand
	12	Elasticity of demand supply
	13	Determinants
	14	Supply function and elasticity of supply
Ch.3		Basic Cost Concepts
	15	Production function, law of variable proportions
	16	turns to scale, production optimization and uses of production function
	17	Cost concepts and its types
	18	Short run and long run costs
	19	Total, fixed and variable
	20	Marginal average, opportunity cost
Ch4		Market
	21	Meaning of market, types
	22	Perfect competition
	23	Monopoly
	24	Oligopoly and monopolistic competition
Ch. 5		Principles of Management
	25	Nature and importance of management
	26	Levels of management

	27	Fundamental managerial skills
	28	Functions of management
	29	Henry Fayol's principles of management
	30	Henry Fayol's principles of management
	31	Motivation theory: X and Y
	32	Motivation theory: X and Y
Ch. 6		Basic Financial Concepts
	33	Business
	34	Capital
	35	Assets
	36	Liabilities
	37	Interest
	38	Profit and Loss
	39	Balance sheet and related concepts
	40	Profit loss statement and related concepts

Assignments

Chapter No.	Questions
1	1. Define the term Economics and explain economic concepts deal with Public finance. 8 2. Define the term Economics and explain the concept of Public finance. 8 3. Explain in brief Public Finance. 8 4. Explain Economics and explain scope of economics. 8 5. Explain different sources of finance. 8 6. Explain in brief types of business firms. 8 7. Explain the terms Goods, Services, Utility and Value with example. 8 8. Write short note on Marginal Economics. 6 9. Write short note on Micro and Macro Economics. 6 10. Write short note on Distinguish between Micro and Macro Economics. 6 11. Write short note on Define the terms Goods, Services, Utility, Value and Wealth. 6
2	1. Explain various determinants of Demand.8 2. Define the term Demand and explain its types.8 3. Explain the concept of 'Elasticity of Demand'. 8 4. Explain different types of Demand. 8 5. Write short note on Law of Demand and Law of Supply. 6 6. Write short note on Determinants of Supply. 6 7. Write short note on Price Elasticity of Demand.6
3	1. Explain different types of Cost. 8 2. Define the term Cost and explain its types. 8 3. Explain Determinants of Cost. 8 4. What is Production Function? Explain different Laws of Production. 8 5. Write short note on Law of Variable proportions. 6 6. Explain Return to Scale. 8

	7. Explain Law of Variable Proportion with example. 8 8. Write short note on Production Optimization. 6 9. Write short note on Explain Marginal and Opportunity cost.6
4	1. Define the term Market. Explain Monopoly and Oligopoly Market. 8 2. Differentiate between Monopoly and Oligopoly Market.6 3. Write short note on Market. 6 4. Write short note on Differentiate between Perfect and Monopolistic Competition. 6 5. State characteristics of perfect competition. 8
5	1. Define the term Management and explain functions of Management. 8 2. Explain Functions of Management.8 3. Explain Nature and Importance of management. 4. Define the term Management and explain its importance. 8 5. Explain different skills required by Manager. 8 6. Explain Theory X and Theory Y of Motivation. 8 7. Define the term Motivation and Explain Theory X and Theory Y of Motivation.8 8. Explain importance of Management. 8 9. Explain Henry Fayol's principles of Management. 8 10. Write short note on Level of Management. 6 11. Write short note on Fundamental of Managerial skill.6
6	1. Explain the concept of Profit and Loss account with example. 8 2. Explain the concept of 'Profit and Loss Statement' with its format. 8 3. Explain following terms i) Business ii) Capital iii) Liability 4. Explain the terms Business, Assets, Liabilities, Interest, Profit and Loss. 8 5. Write short note on Explain the terms Profit, Loss and Interest. 6 6. Explain the concept Of Balance Sheet with example.8 7. Write short note on Explain the terms Business, Assets and Liabilities. 6 8. Write short note on Balance Sheet.6

Recommended Books:

Text Books:

1. Managerial Economics by Geetika, PayaliiGhosh, Puraba Roy Choudhury Publisher The Tata McGraw-Hill companies, New Delhi 2008 (units 1 to4)
2. Essential of management by Harold koonez and Heinz,Weihrich- Tata McGraw Hill for Principles of management (unit-5)
3. "Basic Financial Accounting For Management" by Paresh Shah Publisher- Oxford University Press New Delhi-2007(unit-6)

Reference Books:

1. Fundamentals of Engineering Economics by PravinKumar , Wiley India Ltd.

Subject: Discrete Mathematical Structures

Lect No.	Ch.No.	Details of syllabus planned
1	1	Statement and Notation, logical connectives,
2		truth tables, tautologies,
3		principle of duality,
4		well formed formulas,
5		logical equivalences,
6		Inference of Theory for statement Calculus.
7	2	Set, Definition
8		Different of types of sets,
9		Operations on sets
10		Venn Diagrams,
11		Ordered Pairs,
12		Cartesian product of two sets,
13		Principle of Inclusion and exclusion.
14	3	Definition, types of relation,
15		composition of relations,
16		domain and range of a relation,
17		Equivalence Relations and partitioning,
18		Partial ordering
19		relations, Hasse Diagrams,
20		Introduction to Lattices.
21	.4	Definition of function,
22		types of function
23		composition of functions
24		Recursively defined functions.
25	5	Algebraic Systems,
26		Semi Groups,
27		Groups, Monoid,
28		Abelian Groups,
29		subgroups, Isomorphism

30		Automorphisms,
31		Homomorphism
32		Normal Subgroups.,
33	.6	Basic Terminology
34		Multi graph and weighted graphs
35		Diagraphs andrelations
36		Representation of graphs
37		Paths and circuits
38		Eulerian
39		Hamiltonian Paths and Circuits
40		Graph Coloring.

Recommended Books:

Text book

1. Mathematical Structures with Application to Computer Science - J. P. Tremblay & R. Manohar, MGH International Edition.
2. Elements of Discrete Mathematics- C. L. Liu and D. P. Mohapatra,,4 Edition McGraw-Hill.

Reference Book

1. Discrete Mathematics – Semyour Lipschutz, Marc Lipson (MGH), Schaum' Outline Series
2. Discrete mathematics and its applications - Kenneth H. Rosen (AT&T Bell Labs)
3. DiscreteMathematics With Proof, 2nd Ed, ERIC GOSSETT,Wiley India Ltd.

Subject: Problem solving using C

Ch. No	Lect. No.	Details of Syllabus Planned
01		**Introduction**
	1	The meaning of algorithms, Flowcharts, Pseudo codes, Writing algorithms and drawing flowcharts for simple exercises
	2	Memory concepts, C Program development environment
	3	Types of problems, problems solving with computers difficulties with problem solving
	4	Problem Solving Aspects, Problem Solving Concepts for computer

	5	Programming Concepts – communicating with computers
	6	organizing the problem, using the tools, Top down design
02		**Introduction to 'C' Language**
	1	Importance of 'C' Language,
	2	Sample 'C' Program, Structure of 'C' Program
	3	Constants, variables and data types
	4	Operators and expressions
	5	Managing input / output operations,
	6	Control statements
03		Functions
	1	Need for user defined functions
	2	elements of User defined functions
	3	Defining , functions,
	4	return values and their types
	5	function calls, function declaration
	6	Methods of parameter passing, user defined and library functions.
04		**Arrays and Strings**
	1	The meaning of an array, one dimensional and two dimensional arrays
	2	Declaration and initialization of arrays,
	3	reading writing and manipulation of above types of Arrays, multidimensional arrays.
	4	Declaring and initialing string variables, reading string from terminal,
	5	writing string to screen, arithmetic operations on characters
	6	putting strings together
	7	comparison of two strings, string handling functions
	8	, string handling functions
05		**Structures and Pointers**
	1	Defining a structure, declaring structure variables, accessing structure members,
	2	structure initialization, copying and comparing structure variables, operations on individual members
	3	array of structures, structures and functions, Unions. Understanding pointers,
	4	accessing the address space of a variable, declaring and initialization pointer
	5	variables, accessing a variable through its pointer,

	6	pointer expressions,
	7	pointers and arrays,
	8	pointer and characterstrings
06		**File I/O**
	1	FileI/O,StandardCvs.UnixFileI/O
	2	Streams and Files,FileSystem Basics
	3	fread()and fwrite(), fseek()
	4	fprintf() and fscanf()
	5	Random-Access I/O
	6	The Standard Streams

Assignments

Assignments no.1

1. What are the features of the C language?
2. What is the use of printf() and scanf() functions?
3. Whatare the loops in C explain in detail.

Assignments no.2

1. What is recursion in C?
2. Explain what is variable with example?
3. How many keywords are there in C write their names?
4. What is a pointer in C?

Assignments no.3

1. What are operators in C?
2. What is a string in C explain with example?
3. What is the memory leak in C?
4. What is double pointer in C?

Assignments no.4

1. What are data types in C?
2. Explain Structure and union with example?
3. Explain array with example?

Assignments no.5

1. What is call by valve and call by reference.
2. Explain structure and union in details.

Experiment List

Sr. No.	Exp. No.	Experiment Title	CO
1	1	Write a program using basic data types, scanf, printf, format specifiers.	1,2
2	2	Apply and write a program on conditional control statements if-else, Switch-case,break.	
3	3	Design a program using looping constructs while, do-while and for loops.	1,2
4	4	Write a program on Finding biggest of three numbers.	3,4
5	5	Write a program to find roots of given quadratic equation.	3,4
6	6	Write a program to find square of a number using function.	3,4
7	7	Write a program Char to number conversion.	3,4
8	8	Write a program to swap two numbers using functions (call by value).	3,4
9	9	Write a program to swap two numbers using functions (call by reference).	3,4
10	10	Write a program to factorial of a given number using recursion.	3,4
11	11	Write a program to find Fibonacci series.	3,4
12	12	Write a program for reverse of digit.	3,4
13	13	Write a program for find minimum and maximum in a list.	3,4
14	14	Write a program to print information of student using structure.	3,4

Recommended Books:

Text Books :

1. Programming And Problem Solving Using C Language, ISRD Group, McGraw-HillPublications
2. How to Solve it by Computer, R G Dromey ISBN978-81-317-0562-9,Pearson.
3. C How to Program, Harvey M. Deitel , Paul J. Deitel, AbbeyDeitel,Pearson Publication.

Reference Books:

1. The ‘C’ Programming Language, By B.W. Kernigghan and D. M.Ritchie,Pearson Education.
2. C Programming Laboratory : Handbook for Beginners by Sidnal, Wiley IndiaLimited.
3. http://www.spoken-tutorial.org/NMEICT Project of Govt. OfIndia.

TYIT

Subject: Operating System- I

Ch. No.	Lect No.	Details of syllabus planned
Ch. 1	**Introduction to Operating Systems**	
	01	Introduction to Operating Systems
	02	System structures: What operating systems do
	03	Computer System organization, Computer System architecture
	04	Operating System structure, Operating System operations
	05	Types of Operating Systems, Distributed system, Special-purpose systems
	06	Operating System Services, User - Operating System interface
	07	ystem calls, Types of system calls, System programs, Operating System structure
	08	Virtual machines, System boot
Ch. 2	**Process Management**	
	09	Process concept, Process scheduling
	10	Operations on processes
	11	Inter-process communication
	12	Multi-Threaded Programming: Overview
	13	Multithreading models, Thread Libraries, Threading issues.
	14	Process Scheduling: Basic concepts, Scheduling criteria
	15	Scheduling algorithms
	16	Multiple-Processor scheduling, Thread scheduling.
Ch. 3	**Process Synchronization**	
	17	Synchronization: The Critical section problem
	18	Peterson's solution
	19	Synchronization hardware
	20	Semaphores
	21	Classical problems of synchronization
	22	Classical problems of synchronization
	23	Monitors.

Ch .4	**Deadlocks**	
	24	System model

	25	Deadlock characterization
	26	Methods for handling deadlocks
	27	Deadlock prevention
	28	Deadlock avoidance
	29	Deadlock detection and recovery from deadlock
Ch. 5	**Memory Management**	
	30	Memory Management Strategies: Background
	31	Swapping; Contiguous memory allocation
	32	Paging; Structure of page table
	33	Segmentation. Virtual Memory Management: Background
	34	Demand paging, Copy-on-write
	35	Page replacement
	36	Allocation of frames, Thrashing
Ch. 6	**IO Systems**	
	37	Overview, I/O Hardware
	38	Application I/O Interface, Kernel IO Subsystem
	39	Transforming I/O
	40	Request to Hardware Operations, Streams

Experiment List

Expt No.	Title	Nature of Experiment	CO
1	Study of different types of Operating System	Non-Performing	CO1,CO2
2	Study of basic Commands in Linux Operating System	Performing	CO1
3	Implementation of the non-preemptive CPU scheduling algorithms to find turnaround time and waiting time for the above problem. a) FCFS b) SJF	Performing	CO4
4	Implementation of the non-preemptive CPU scheduling algorithms to find turnaround time and waiting time for the above problem. a) Round Robin b) Priority	Performing	CO4
5	Implementation of producer-consumer problem using semaphores	Performing	CO3
6	Implementation of Dining-Philosophers problem using semaphore	Performing	CO3

7	Implementation of bankers algorithm for deadlock avoidance	Performing	CO4
8	Implementation of contiguous memory allocation techniques	Performing	CO4
9	Implementation of Paging technique of memory management.	Performing	CO2,CO4
10	page replacement algorithms a) FIFO b) LRU c)Optimal	Performing	CO3

List of Recommended Books

Text books used:-

1. Abraham Silberschatz, Peter Baer Galvin, Greg Gagne: Operating SystemPrinciples, 8th edition, Wiley India,2009

Reference books used:-

1. Operating Systems –Concepts and design –Milan Milenkovic(TMGH)(For Types of Operating Systems*-Refer Chapter 1 in Operating Systems –Concepts and design–Milan Milenkovic (TMGH))
2. Operating Systems: Internals and Design Principles (8th Edition)- by William Stallings(Pearson EducationInternational)
3. Modern Operating Systems by Andrew S. Tanenbaum (Pearson EducationInternational)

Subject: Database Engineering

Chapter No	No. of Lecture	Topics to be covered in each Lecture
1	1	Purpose of Database Systems,
	2	View of Data, Data Models,
	3	Database Users and Administrators,
	4	Overall System Design, Entity Relationship Model- Basic Concepts,
	5	Constraints, Keys, E-R Diagram, Weak Entity Sets,
	6	Reducing E-R Diagrams to Tables.
2	7	Structure of Relational Databases,
	8	Relational Algebra,
	9	Structured Query Language (SQL),
	10	PL/SQL-
	11	Stored Procedures,
	12	Functions
	13	trigger

	14	cursor
3	16	Domain Constraints
	17	Referential Integrity
	18	Functional Dependencies
	19	Closure of set of Functional Dependencies
4	20	Physical storage media
	21	Storage access
	22	Organization of Records in Files
	23	Data Dictionary Storage
	24	Indexing and Hashing: Basic Concepts
5	25	Transaction concept, Transaction state
	26	Concurrent Executions, Serializability
	27	Recoverability, Testing for Serializability
	28	Lock-Based Protocols, Graph based Protocols
	29	Time- Stamp Based Protocols
	30	Validation based protocols,
	31	Failure Classification, Recovery and Atomicity
	32	Log-Based Recovery, Checkpoints.
6	33	Access Control
	34	Discretionary Access Control
	35	Mandatory access control
	36	Database Security

Experiment List

Expt No.	Title of Experiment	Nature of Experiment	CO
1	Draw an E-R Diagram for any organization.	**Non-Performing**	**CO1,CO2**
2	Implementation of DDL Queries to create, alter (add, modify, rename, drop) & drop table.	**Performing**	**CO1,CO2**
3	Implementation of DML Queries to insert, deletes, updates & display records of the tables.	**Performing**	**CO1,CO2**
4	Implementation of integrity constraints like primary key, check, not null and unique.	**Performing**	**CO1,CO2**
5	Implementation of referential integrity constraints with foreign key, on delete cascade and on delete set null.	**Performing**	**CO1,CO2**
6	Implementation of set operations like union, intersections & set difference.	**Performing**	**CO1,CO2**
7	Implementation of Join Operations like cross join, self join, inner join, natural join, left outer join, right outer join and full	**Performing**	**CO2,CO3**

	outer join.		
8	Implementation of Aggregate functions like min, max, avg, sum & count. Also use group by, having clauses	**Performing**	**CO2,CO3**
9	Implementation of String operations.	**Performing**	**CO2,CO3**
10	Implementation of views for any created table.	**Performing**	**CO2,CO3**
11	Implement JDBC connectivity	**Performing**	**CO2,CO3**

List of Recommended Books

1. Database System Concepts – Silberschatz, Korth, Sudarshan, 4th edition onwards [McGraw Hill] –
2. Database Management Systems - Raghu Ram Krishnan, 3rd edition [McGraw Hill] Unit No. 2, 3, 4,
3. Data Mining – Introductory & Advanced Topics -M. H. Dunham [Pearson Education]

Subject: Computer Algorithm

Chapter No	No. of Lecture	Topics to be covered in each Lecture
1	1	What is algorithm
	2	Algorithm Specification, Recurrence relations
	3	Performance Analysis?
	4	Randomized Algorithms.
2	5	Divide and Conquer-The general method
	6	Binary search
	7	finding the maximum and minimum
	8	Merge sort, Quick sort
	9	Selection sort
	10	analysis of these algorithms.
3	11	The general method, Knapsack problem
	12	Job sequencing with deadlines
	15	minimum-cost spanning trees – Prim's and Kruskal's Algorithms
	16	Optimal storage on tapes
	17	Optimal merge patterns
	18	Single source shortest paths.
4	19	The general method, Multistage graphs

	20	All pair shortest paths
	21	Optimal binary search trees,
	22	0/1 knapsack
	23	Reliability design,
	24	Traveling Sales person problem.
5	25	Techniques for Binary Trees
	26	Techniques for Graphs – Breadth First Search& Traversal ,
	27	Depth First Search & Traversal,
	28	Connected components and Spanning Trees
	29	Bi-connected components And depth first search
6	30	Backtracking : The general method, 8-queen problem
	31	sum of subsets,
	32	Knapsack Problem
	33	Hamiltonian Cycle
	34	Graph Coloring
	35	NP Hard and NP Complete Problems
	36	Basic Concepts ,
	38	Introduction to NP Hard Graph Problems.

Assignment

Assignment 1

1) Explain what is an algorithm in computing?
2) Explain what is Quick Sort algorithm?
3) Explain what is time complexity of Algorithm?
4) Mention what are the types of Notation used for Time Complexity?

Assignment No.2

1) Explain how binary search works?
2) Explain whether it is possible to use binary search for linked lists?
3) Explain how to find whether the linked list has a loop?
4) Explain what is the difference between best case scenario and worst case scenario of an algorithm?
5) Assignment No.3
6) Qu. 1) Solving Recurrences
7) Give asymptotic upper and lower bounds for T(n) in each of the following recurrences. Assume that T(n) is constant for $n \leq 2$. Make your bounds as tight as possible, and justify your answers.
8) (a) $T(n) = 4T(n/4) + 5n$
9) (b) $T(n) = 4T(n/5) + 5n$
10) (c) $T(n) = 5T(n/4) + 4n$
11) (d) $T(n) = 25T(n/5) + n2$
12) (e) $T(n) = 4T(n/5) + \lg n$

13) (f) T(n) = 4T(n/5) + lg5 n √n
14) (g) T(n) = 4T(√n) + lg5 n
15) (h) T(n) = 4T(√n) + lg2 n √
16) (i) T(n) = T(n) + 5 (j) T(n) = T(n/2) + 2T(n/5) + T(n/10) + 4n
17)
18) Qu. 2)Asymptotic Growth
19) Sort all the functions below in increasing order of asymptotic (big-O) growth. If some have the same asymptotic growth, then be sure to indicate that. As usual, lg means base 2.
20) 5n
21) 4 lg n
22) 4 lglg n
23) n4 5. n1/2 lg4 n (lg n)
24) n 5n

Assignment No.4

1) Explain what is a recursive algorithm?
2) Mention what are the three laws of recursion algorithm?
3) Explain what is Quick sort algorithm?
4) Explain with example what is Selection sort algorithm?

Assignment No.5

1) Explain with example what is Merge sort algorithm?
2) Finding Maximum and Minimum element algorithm explain with example
3) Explain what is Quick sort algorithm?
4) Explain with example what is Selection sort algorithm?

Assignment No.6

1) What is the knapsack problem?
2) What skills does knapsack test?
3) Explain Brute-force recursive solution
4) Explain Optimal Merge Pattern with Example

Assignment No.7

1) Explain Searching Technique? Binary Search with example.
2) What is Backtracking? Explain 8-queen problem
3) Note on NP hard and NP Complete Problem
4) Explain Hamiltonian Cycle with Example

List of Recommended Books

TEXTBOOK:

1. Fundamentals of Computer Algorithms - Ellis Horowitz, SartajSahani, SanguthevarRajasekaran,

Universities Press, Second Edition.

References:

1. Introduction to Algorithms - Thomas Cormen, Charles Leiserson, Ronald Rivest, CliffordStein, PHI, Third Edition
2. Essential Algorithms: A Practical Approach to Computer Algorithms, Rod Stephens,Wiley International.

Subject: System Programming

Lecture No.	Topic to be covered
01	Introduction to language processors.
02	Language processing activities.
03	Fundamentals of language processing.
04	Fundamentals of language processing.
05	Fundamentals of language specification.
06	Fundamentals of language specification.
07	Language processor development tools: LEX.
08	Language processor development tools: YACC.
09	Introduction to assembler.
10	Elements of assembly language programming.
11	Elements of assembly language programming.
12	A simple assembly scheme.
13	Pass structure of assemblers.
14	Design of a two pass assembler.
15	Design of a two pass assembler.
16	A single pass assembler for IBM PC.
17	Macro definition.
18	Macro call.
19	Macro expansion.
20	Nested macro calls.
21	Advanced macro facilities.
22	Advanced macro facilities.
23	Design of a macro pre-processor: Design overview.

24	Design of a macro pre-processor: Data structure.
25	Input & lexical analysis, Context free grammar.
26	Top-down parsing.
27	Bottom-up parsing.
28	Code generation.
29	Memory allocation.
30	Compilation of expressions.
31	Compilation of control structures.
32	Code optimization.
33	Interpreters.
34	Relocation concept.
35	Linking concept.
36	Design of a linker.
37	Self relocating programs.
38	A linker for MS DOS.
39	Linking for overlays.
40	Loaders.
41	Loaders.
42	Gcc.
43	Gdb.
44	Gdb.
45	Ddd.
46	Ddd.
47	Lex.
48	Yacc.

Assignment

Assignment No. – 01

Q.1 : Discuss the fundamentals of language processing.

Q.2 : Discuss language processor development tools.

Q.3 : Explain advanced macro facilities with examples.

Q.4 : Discuss in detail along with sketch/block diagram; the design of a macro preprocessor.

Assignment No. – 02

Q.1 : Discuss elements of assembly language programming.

Q.2 : Describe pass structure of an assembler.

Q.3 : Explain dynamic storage allocation strategies with example.

Q.4 : Explain compilation of control structures.

Assignment No. – 03

Q.1 : Describe linking for overlays.

Q.2 : Explain relocation and linking concepts.

Q.3 : Explain LEX and YACC.

Q.4 : Describe gdb and ddd.

Recommended Books

Text books:-

1. System Programming: D. M. Dhamdhere, McGraw Hill, 1st Edition.

Reference books:-

1. System programming and operating systems: D. M. Dhamdhere, 2nd Edition (TMH).

2. System programming: J. J. Donovan (TMH).

3. System Programming: Srimanta Pal, Oxford University Press.

Subject: Internet of Things

Chapter No	No. of Lecture	Topics to be covered in each Lecture
1	1	What is the Internet of Things? : History of IoT
	2	About objects/things in the IoT, Overview and motivations
	3	Examples of applications, IoT definitions
	4	IoT Frame work, General observations
	5	ITU-T views, working definitions
	6	Basic nodal capabilities.
	7	Identification of IoT objects and services, Structural aspects of the IoT
	8	Environment characteristics, Traffic characteristics
2	9	scalability, Interoperability, Security and Privacy
	10	Open architecture, Key IoT Technologies, Communication capabilities

	11	Mobility support, Device PowerDevice Intelligence
	12	Sensor Technology, RFID technology, Satellite Technology
	13	Introduction, Principles of RFID
	14	Components of an RFID system, Reader
	15	RFID tags, RFID middleware, Issue.
	16	Wireless Sensor Networks: History and context, node
3	17	Connecting nodes
	18	Networking nodes, securing communication.
	19	WPAN Technologies for IoT/M2M, Zigbee /IEEE 802.15.4
	20	Radio Frequency for consumer Electronics (RF4CE), Bluetooth and its low-energy profile
	21	IEEE 802.15.6 WBANS, IEEE 802.15 WPAN TG4j
	22	MBANS,NFC,dedicated short range communication(DSRC)
	23	Related protocols
4	24	Comparison of WPAN technologies cellular & mobile network technologies for IoT/M2M.
	25	Introduction, Notion of governance, aspects of governance
	26	Aspects of governance Bodies subject to governing principles, private organizations
	27	International regulation and supervisor, substantive principles for IoT governance
	28	Legitimacy and inclusion of stakeholders, Future governance issues, practical implications, legal implications.
	29	Transparency, accountability. IoT infrastructure governance
5	30	Robustness, availability, Reliability, interoperability
	31	Smart Metering, advanced metering infrastructure
	32	e-Health/Body area network
	33	City automation, automotive applications.
6	34	Home automation, smart cards
	35	Tracking, Over-The-Air passive surveillance/Ring of steel,
	36	Control application examples.

Assignment

Unit No. 1

1. What is IoT? Explain animate and inanimate things/object with suitable example.
2. Describe any one IoT application in detail.
3. List the application areas of IoT.
4. Explain working definition of IoT.
5. Describe what are the basic nodal capabilities.
6. Express the ITU-T views about IoT definition.

Unit No. 2

1. Explain the structural aspects of IoT.
2. How the object identification can be done in IoT application.
3. What are the environmental and traffic characteristics in IoT.
4. What is Sensor? Explain different types of sensors.
5. Explain the key IoT Technologies.
6. Write a short note on (w.r.t. IoT)
    a. Sensor Technology
    b. Satellite Technology
    c. RFID Technology

Unit No. 3

1. Explain principles of RFID.
2. Describe components of RFID.
3. Write a note on RFID middleware.
4. What is wireless sensor network?
5. Write a short note on:
    a. Node
    b. Connecting node
    c. Networking node

Unit No. 4

1. Describe WPAN technologies with respect to IoT.
2. Describe the specifications of Zigbee /IEEE 802.15.4.
3. Explain IEEE 802.15.6 WBANS.
4. Write the use and applications of dedicated short range communication(DSRC).
5. Compare the WPAN technologies cellular & mobile network technologies for IoT/M2M.

Unit No. 5

1. Describe the Future governance issues in brief.
2. Explain an IoT infrastructure governance with respect to following points:
    a. Robustness
    b. Availability
    c. Reliability
    d. Interoperability
    e. Access
3. Define:
    a. EPCglobal
    b. VeriSign
    c. ICANN

Unit No. 6

1. Students have to perform a mini-project along with the case study on one of the following topic:
    a. Smart Metering

b. e-Health/Body area network
c. City automation
d. Automotive applications
e. Home automation
f. Smart cards
g. Tracking

List of Recommended Books

1. HakimaChaouchi, The Internet of Things, Connecting Objects to the Web, Wiley Publications
2. Daniel Minoli,"Building the Internet of Things with IPv6 and MIPv6 The Evolving World of M2M Communications", Wiley Publications
3. Bernd Scholz-Reiter, Florian Michahelles, "Architecting the Internet of Things", ISBN 978-3842-19156-5, Springer.
4. Olivier Hersent, David Boswarthick, Omar Elloumi, "The Internet of Things" Key Applications and Protocols, ISBN 978-1-119-99435-0, Wiley Publications.

Subject: Application Development Tool – I

UNIT No.	Lect. No.	Details of syllabus planned
01	1	Overview of Java, Java buzzwords, Difference between C++ & Java
	2	Data Types, Arrays, Command line Arguments.
	3	Classes**:** The Object class, Object Construction, Garbage Collection
	4	Nested & Inner classes, String class, Wrapper classes, Class Design Hints.
	5	**Inheritance:** Member Access, Super keyword, final keyword.
	6	Abstract Classes, Access Protection, Interfaces, Design Hints for Inheritance.
	7 &8	**Packages:** Defining a package, Searching packages and setting CLASSPATH.
02	09	Dealing with Errors, Catching Exceptions
	10	Tips for Using Exceptions.
	11	I/O: Streams, Text Input and Output.
	12	Reading and Writing Binary data.
	13	Multi-Threading
	14	What are threads?, Interrupting threads
	15	Thread states.
	16	Thread properties and synchronization.
03	17	Introducing AWT and Swing
	18	Creating a Frame, Positioning a Frame
	19	Displaying Information in a Component.
	20	Introduction to Layout Management, Text Input
	21	Choice Components, Menus. Dialog Boxes.
	22	Event Handling: Basics of Event Handling, Mouse Events

	23	The AWT Event Hierarchy.
04	24	Why Generic Programming?
	25	Definition of a Simple Generic Class
	26	Generic Methods.
	27	Collections: Collection Interfaces,
	28	Concrete Collections.
	29	The Collections Framework.

Experiment List

Sr. No.	Experiment List	Status	CO's
1	Installation of jdk on Linux	Performing	CO2
2	Write a program to implement vector class	Performing	CO1,CO2
3	Write a program to implement matrix class	Performing	CO1,CO2
4	Write program to implement given inheritance hierarchy	Performing	CO1,CO2
5	Write a program to create linked list through interface.	Performing	CO1,CO2
6	Create a Mymath package that will have following features. a. Trigonometric functions : (sine, cosine, tangent, secant, cosecant and cotangent) that accepts input in degrees instead of radians. b. Performs Statistical operations like min, max, count, sum and average (Understanding of package).	Performing	CO1
7	Write a program to create applet and perform the slideshow of images using Multithreading	Performing	CO1,CO3,CO4
8	Write a program to remove whitespaces from a text file. Name of the file is given using command line	Performing	CO1
9	Write a program to merge and sort data from different files in a single file.	Performig	CO1
10	Write a program to copy text from one text box to another on a button click. (Swing and event handling).	Performing	CO1,CO3
11	rite a program to create a GUI student registration form. (Swing controls and event handling).	Performing	CO1,CO3,CO4
12	Write a program to demonstrate key and mouse event handling (Event handling).	Performing	CO1,CO3
13	Write a program to demonstrate various methods of ArrayList class. (Collections).	Performing	CO1,CO2
14	rite a program to store and retrieve, delete and update Student's information in Database. (Implementation of database connectivity in java).	Performing	CO1,CO3,CO4
15	Study of frame works like stud, spring hibernates etc.	Non-Performing	CO1

List of Recommended Books

1. JAVA-The Complete Reference: Herbert Schildt, Oracle Press, Mcgraw Hill, Ninth edition
2. A Programmer's guide to JAVA SCJP Certification: Khaleed Mughal and Rolf W. Rasmussen, Addison Wesley, Third edition
3. Core Java- Volume I Fundamentals: Cay Horstmann and Gary Cornell, Pearson, Eight editions
4. Core Java- Volume II Advanced Features: Cay Horstmann and Gary Cornell, Pearson, Eight editions

B.TECH(IT)

Subject: Distributed Computing

Chapter No	No. of Lecture	Topics to be covered in each Lecture
1	**Fundamentals**	
	1	Fundamentals Evolution of Distributed Computing Systems
	2	System models
	3	Issues in design of Distributed Systems
	4	Distributed computing environment, ,
	5	Web based distributed model
	6	Computer networks related to distributed systems and web based protocols.
2	**Message Passing**	
	7	Inter process Communication
	8	Desirable Features of Good Message Passing Systems, and Issues in IPC by Message
	9	Synchronization, Buffering
	10	Multidatagram Messages
	11	Encoding and Decoding of Message Data and Process Addressing
	12	Failure Handling, Group Communication.
3	**Remote Procedure Calls**	
	13	Remote Procedure Calls The RPC Model, Transparency of RPC, Implementing RPC Mechanism
	14	Stub Generation, RPC Messages, Marshaling Arguments and Results
	15	Server Management, Communication Protocols for RPCs
	16	Complicated RPCs, Client-Server Binding, Exception Handling
	17	Security, Some Special Types of RPCs, Lightweight RPC,
	18	Optimization for Better Performance
4	**Distributed Shared Memory**	
	19	Distributed Shared Memory Design and Implementation issues of DSM
	20	Granularity, Structure of Shared memory Space
	21	Consistency Models, replacement Strategy
	22	Thrashing

	23	Other Approaches to DSM
	24	Advantages of DSM
5	**Synchronization**	
	25	Synchronization Clock Synchronization
	26	Event Ordering
	27	Mutual Exclusion
	28	Distributed Algorithm
	29	Token Ring Algorithm
	30	Election Algorithms, Ring Algorithm
6	**Resource and Process Management**	
	31	Resource and Process Management Desirable Features of a good global scheduling algorithm
	32	Task assignment approach, Load Balancing approach
	33	Load Sharing Approach, Process Migration
	34	Threads
	35	Processor allocation
	36	Real time distributed Systems

Experiment List

Expt No.	Title	Nature of Experiment	COs
1	To study Distributed System and types of different system models	Non-Performing	CO1
2	Program to implement for Inter Process Communication using socket	Performing	CO1,CO2
3	Program to implement for Remote Procedure Call.	Performing	CO2
4	Program to Implement of Election algorithm	Performing	CO2
5	To study Distributed Shared Memory	Non-Performing	CO3,CO5
6	Program to implement of clock synchronization (Time and Date Server)	Performing	CO2
7	Program to implement of Mutual Exclusion	Performing	CO2
8	Program to implement multi-threaded client/server processes	Performing	CO4
9	Program to implement concurrent echo client-server application	Performing	CO2,CO4

10	To study Distributed File System and comparison between NFS and AFS	Non-Performing	CO5

List of Recommended Books

Text Books:

1. A S Tanenbaum, Martin Steen,"Distributed Systems: Principles and Paradigms", 2/E,PHI, 2006
2. Nancy A. Lynch, "Distributed Algorithms", Morgan Kaufmann, 1996
3. W Richard Stevens, "Unix Network Programming: Vol 1, Networking APIS: Sockets & XTI",2/E, Pearson Education,1998
4. Colouris,Dollimore,Kindberg, "Distributed Systems Concepts & Design", 4/E,Pearson Ed. 2005
5. MukeshSinghal, Niranjan G. Shivaratri, "Advanced concepts in operating systems: distributed, database, and multiprocessor operating systems", MGH, 1/E, 1994.

Reference Books:

1. Distributed OS by Pradeep K. Sinha (PHI)
2. Tanenbaum S.: Distributed Operating Systems, Pearson Education
3. Tanenbaum S. Maarten V.S.: Distributed Systems Principles and Paradigms, (Pearson Education) GeorgeCoulouris, Jean Dollimore. Tim Kindberg: Distributed Systems concepts and design

Subject: Mobile Computing

Chapter No.	Lect No.	Details of syllabus planned
Ch.1	**Introduction to wireless communication**	
	1	Need of wireless communication.
	2	Application of wireless communication.
	3	Wireless data technologies, Market for mobile.
Ch. 2	**Wireless transmission and Medium access Control**	
	4	Frequency for radio transmission.
	5	Signals, Antenna.
	6	Signal propagation.
	7	Multiplexing, Modulation.
	8	Spread and cellular systems.

	9	MAC, SDMA and FDMA.
	10	TDMA and CDMA.
Ch.3	**Telecommunications systems**	
	11	GSM: Mobile services, System architecture.
	12	Radio interface, Protocols.
	13	Localization and calling.
	14	Handover, Security and new data services.
	15	UMTS and IMT – 2000.
	16	UMTS releases and standardization.
	17	UMTS system architecture.
Ch. 4	**Wireless LAN**	
	18	Introduction.
	19	Infrared v/s radio transmission.
	20	Infrastructure and ad-hoc network.
	21	Infrastructure and ad-hoc network.
	22	IEEE 802.11.
	23	Blue tooth.

Ch.5	**Mobile Network Layer and Transport Layer**	
	24	Mobile IP.
	25	DHCP.
	26	Mobile ad-hoc network.
	27	Traditional TCP.
	28	Classical TCP improvements.
	29	TCP over 2.5/3G wireless networks.
Ch.6	**Wireless application protocol**	
	31	Architecture, Wireless datagram protocol.
	32	Wireless transport layer, Security, Wireless transaction protocol.
	33	Wireless session protocol, Wireless application environments.
	34	Wireless markup language, WML script.
	35	Mobile communications, Wireless telephony application.
	36	Push architecture, Push/Pull services.

Assignment

Assignment No. - 01

Q. 1 Differentiate between wired and wireless communication.

Q. 2 Draw andexplain simplified reference model for mobile and wireless communication.

Q. 3 What are the advantages and disadvantages of cellular systems using small cells.

Q. 4 What is mean by signal propagation? Explain different effects on it.

Assignment No. - 02

Q. 1 Draw and explain GSM system architecture.

Q. 2 What are the reasons of handover? Explain different possible handover scenarios.

Q. 3 Explain IEEE 802.11 protocol architecture.

Q. 4 Describe the format of an IEEE 802.11 PHY frame using FHSS.

Assignment No. - 03

Q. 1 List the entities of Mobile IP and describe data transfer from a mobile node to a fied node and vice versa.

Q. 2 What is the basic purpose of DHCP? Name the entities of DHCP.

Q. 3 Explain wireless datagram protocol.

Q. 4 Which are the features of wireless markup language?

List of Recommended Books

Text books:-

1. Mobile Communications – Jochen Schiller – 2nd edition, Publication – Pearson Education.

Reference books:-

1.Introduction to Wireless Telecommunication Systems and Networks – Gray J. Mulett, Publication – Cengage Learning (India Edition).

2.Mobile Computing – Ashok K. Talukdar&Roopa R. Yavagal, Publication – TATA McGRAW HILL

Subject: Advanced Database Systems

Chapter No	No. of Lecture	Topics to be covered in each Lecture
1	1	Overview,
	2	Catalog Information for cost estimation,
	3	Measures of Query cost Selection operation
	4	Sorting Join operation
	5	Selection size estimation, Join size estimation.
	6	Transformation of relational expression.
2	7	Structured data types Motivating example,
	8	Structured data types, Operations on structured data,
	9	Encapsulation and ADTs, Inheritance, Objects, OIDS and Reference types,
	10	Database design for an ORDBMS, Object identity, Nested collections,
	11	Storage and access methods
3	12	Architectures for parallel databases,
	13	Parallel query evaluation, Parallelizing individual operations,
	14	Parallel query optimization, Introduction to Distributed DBMS,
	15	Distributed DBMS architectures, Storing data in distributed DBMS,
	16	Distributed catalog management,
	17	Distributed query processing,
	18	Updating distributed data, Distributed concurrency control,
4	19	Distributed recovery.
	20	Introduction to decision support, Data Warehousing,
	21	OLAP, Implementation Techniques for OLAP,
	22	Views and decision support.
	23	View materialization, Maintaining materialized views.
	24	Mining for rules
5	25	Introduction, Counting Co-occurrences
	26	Mining for rules, Tree structured rules,
	27	Clustering: K-means algorithm and BIRCH algorithm,
	28	Similarity search over sequences,
	29	Introduction to Information Retrieval: Vector space model
	30	TF/IDF weighting of terms, indexing for text search,
	31	Web Mining: Web content mining- Crawlers,
	32	Web structure mining- Page Rank and

6	33	Transaction-processing monitors,
	34	transactional workflows,
	35	main-memory databases, real-time transaction systems,
	36	long-duration transactions

Experiment List

Expt No.	Title of Experiment	Nature of Experiment	CO
1	Implement merge join.	**Performing**	**CO1**
2	Implement hash join.	**Performing**	**CO1**
3	Create structured data types of ORDBMS and perform operations- create table using structured data types, insert data and solve queries.	**Performing**	**CO3**
4	Implement parallel joins, sorting and aggregates.	**Performing**	**CO2**
5	Implement vertical and horizontal fragmentation in distributed DBMS.	**Performing**	**CO3**
6	Implement semi join in distributed DBMS.	**Performing**	**CO4**
7	Implement two phase commit in distributed DBMS	**Performing**	**CO5**
8	Implementation of concurrency control in distributed DBMS.	**Performing**	**CO2**
9	Implementation of OLAP queries	**Performing**	**CO4**
10	Installation & Configuration - Case Study of IBM-DB2 database/MS-SQL server/Oracle/ My SQL or any open source RDBMs	**Performing**	**CO3**

Assignment

1. What are the issues of traditional file-based systems that make DBMS a superior alternative?
2. What are some examples of open source and commercial Relational DBMSs?
3. What is a database model? and name a few common database models?
4. How do you choose a database model?
5. What is ACID properties of transactions?
6. What are OLTP and OLAP and their differences?
7. What is Data Warehousing?
8. What are database locks and its types?
9. What is “deadlock”?
10. What is B+ tree and its advantages and disadvantages?
11. What is the difference between clustered and non-clustered indexes?
12. What are different JOIN algorithms?

List of Recommended Books

1. Database System Concepts – Silberschatz, Korth, Sudarshan, 4th edition onwards [McGraw Hill] –
2. Database Management Systems - Raghu Ram Krishnan, 3rd edition [McGraw Hill] Unit No. 2, 3, 4,

3. Data Mining – Introductory & Advanced Topics -M. H. Dunham [Pearson Education]

Subject: Data Science

Chapter No.	Lect No.	Details of syllabus planned
Ch.1	**Overview of Python and Data Structures**	
	01	Basics of Python including data types, variables,
	02	Expressions, objects and functions.
	03	Python data structures including String,
	04	Array,
	05	List, Tuple, Set,
	06	Dictionary and operations them.
Ch 2	**Data Science and Python**	
	7	Discovering the match between data science and python:
	8	Considering the emergence of data science, Outlining the core competencies of a data scientist,
	9	Linking data science, big data, and AI
	10	Understanding the role of programming, Creating the Data Science Pipeline, Preparing the data
Ch3	**Getting Your Hands Dirty With Data**	
	11	Using the Jupyter Console,
	12	Interacting with screen text,
	13	Changing the window appearance, Getting Python help,
	14	Getting IPython help, Using magic functions, Discovering objects,
	15	Using Jupyter Notebook, Working with styles,
	16	Restarting the kernel, Restoring a checkpoint,
	17	Performing Multimedia and Graphic Integration,
	18	Embedding plots and other images,

	19	Loading examples from online sites,
	20	Obtaining online graphics and multimedia.
Ch 4	**Data Visualization**	
	21	Visualizing Information: Starting with a Graph, Defining the plot,
	22	Drawing multiple lines and plots, Saving your work to disk, Setting the Axis, Ticks, Grids, Getting the axes, Formatting the axes, Adding grids, Defining the Line Appearance, Working with line style, Using colors, Adding markers, Using Labels, Annotations, and Legends, Adding labels, Annotating the chart, Creating a legend.
	23	Visualizing the Data: Choosing the Right Graph, Showing parts of a whole with pie charts, Creating comparisons with bar charts, Showing distributions using histograms, Depicting groups using box plots, Seeing data patterns using scatter plots, Creating Advanced
	24	Scatter plots, Depicting groups, Showing correlations, Plotting Time Series, Representing time on axes, Plotting trends over time,
	25	Plotting Geographical Data, Using an environment in Notebook,
	26	Getting the Basemap toolkit, Dealing with deprecated library issues, Using Basemap to plot geographic data, Visualizing Graphs, Developing undirected graphs, Developing directed graphs
Ch5	**Data Wrangling**	
	27	Wrangling Data: Playing with Scikit-learn,
	28	Understanding classes in Scikit-learn,
	29	Defining applications for data science, Performing the Hashing Trick,
	30	Using hash functions, Demonstrating the hashing trick,
	31	Working with deterministic selection, Considering Timing and Performance,
	32	Bench marking
Ch6	**Data Measure**	
	33	rking with the memory profiler, Running in Parallel on Multiple Cores,
	34	forming multi core parallelism, Demonstrating multiprocessing.
	35	loring Data Analysis: The EDA Approach, Defining Descriptive Statistics for Numeric Data, Measuring central tendency, Measuring variance and range ,
	36	rking with percentiles, Defining measures of normality,
	37	nting for Categorical Data, Understanding frequencies,
	38	ating contingency tables, Creating Applied Visualization for EDA, Inspecting box plots.

List of Recommended Books

TEXT BOOKS:

1.Python for data science for dummies John Paul Mueller, Luca Massaron Wiley
2 Programming through Python M. T. Savaliya, R. K. Maurya, G. M. MagarSTAREDU Solutions
3. Pandas for everyone: Python Data Analysis Daniel Y. Chen Pearson

REFERENCE BOOKS:

1. Introducing Data Science: Big Data, Machine Learning, and More, Using Python Tools Davy Cielen, Arno D.B. Meysman, Mohamed Ali
2. Applied Data Science with Python and Jupyter Alex GaleaPackt
3. Data Analytics Paperback Anil MaheshwariMcGrawHill
4. Data Science From Scratch: First Principles with Python Joel Grus O'REILLY
5. Star Data Science Specialist STAR CERTIFICATION

Subject Name: Web Technology

Chapter No	No. of Lecture	Topics to be covered in each Lecture
1	1	HTML Structure, XHTML, DOCTYPE, Header Elements,
	2	Conditional Style Sheet, Structural Block Elements,
	3	Terminal Block Elements,
	4	Multipurpose Block Elements, Inline Elements,
	5	Class and ID Attributes
2	6	Type, Class and ID Selector, Position and Group Selectors, Attribute Selectors, Pseudo-element Selectors, Pseudoclass Selectors, Subclass Selector,
	7	Inheritance, Visual Inheritance
	8	Box Model : Display, Box Model, Inline Box, Inline-Block Box, Block Box, Table Box, Absolute Box, Floated Box, Box Extends: Width, Height, Sized, Shrink, wrapped, Stretched, Box Margin, Border, Padding,
	9	Background, Overflow, Visibility, Page Break Positioning Models, Closest Positioned Ancestor, Stacking Context, Atomic, Static, Absolute, Fixed Relative, Float and Clear, Relative Float
3	10	Introduction to javascript ,Basic program of javascript ,
	11	Function & Some data types like array, object ,
	12	Event In Javascript ,
	13	Validating HTML form data using javascript ,
	14	Jquery Introduction ,Selectors in Jquery
4	15	History, General Language Feature PHP Basics : Embedding PHP code in Your Web Pages, Outputting Data to the Browser,
	16	PHP supported Data Types, Identifiers, Variables, Constants, Expressions, String Interpolation, and Control Structures

	17	Functions: Invoking a Function, Creating a Function, Function Libraries,
	18	Array: Creating an array, outputting a Array, Merging, slicing,
	19	splicing and Dissecting Arrays, Other useful Array Functions
5	20	Object-Oriented PHP: The benefits of OOP, Key OOP Concepts,
	21	Constructor and Destructors, Helper Functions.
	22	Advanced OOP Features: Object Cloning, Inheritance, Interfaces, Abstract classes, and Introducing namespaces.
	23	Strings and Regular Expressions
	24	Regular Expressions, Other String Specific Functions,
	25	Alternatives for Regular Expression Functions
	26	Working with HTML Forms: PHP and Web Forms,
	27	Validating Form Data Handling File ,Uploads: Uploading Files with PHP
6	28	Installation Prerequisites, Using the mysql Extension,
	29	Interacting with the Database
	30	Executing Database Transactions.
	31	What Is Session Handling,
	32	Configuration Directives,
	33	Working with Sessions,
	34	Practical Session-Handling Examples,
	35	Creating Custom Session Handlers

Experiment List

Expt No.	Title	Nature of Experiment	CO
1	Create html pages for website like login, registration and about us pages.	Performing	CO1
2	Design created pages using CSS.	Performing	CO1
3	Construct client side scripts to validate HTML form data using JavaScript technology.	Performing	CO1, CO2
4	Develop a convertor using JavaScript and HTML[e.g. length, area convertor].	Performing	CO1, CO2
5	Installing Apache and PHP on Linux, Configuring PHP at Build Time on Linux and Installation of XAMPP.	Non-Performing	CO1, CO2
6	Hello world Program-Embedded HTML with PHP	Performing	CO1, CO2, CO3
7	Program based on PHP variables, Expression, arrays, control structure	Performing	CO3

8	Experiment Based on Advance OOP PHP features.	Performing	CO3
9	Experiment based on session Management (create Login Application)	Performing	CO3
10	For Design and Develop website	Performing	CO1, CO2, CO3

Recommended List

TEXT BOOKS :

1. Pro HTML5 and CSS3 Design Patterns by Michael Bowers, DionysiosSynodinos and Victor Sumner, Apress edition

2. Beginning PHP and MySQL: From Novice to Professional, Fourth Edition - W. Jason Gilmore (Unit 4, 5, 6)

REFERENCE BOOKS :

1. Teach Yourself PHP, MYSQL, Apache - Julie C Meloni [SAMS Publication]
2. PHP5 and MySQL Bible Tim Converse, Joyce Park, Clark Morgan

10-Project Review Form

RUBRICS B.TECH PROJECT EVALUATION

Course Outcomes in project work:

At the end of successful completion of the project work, students should be able to-		
No.	**Course Outcomes**	**Relationship with PO**
CO1	Independently carry out literature survey in identified domain, and consolidate it to formulate a problem statement	PO2, PO12
CO2	Apply identified knowledge to solve a complex engineering problem and design a solution, implement and test the proposed solution	PO1, PO3
CO3	Use synthesis/modeling to simulate and solve a problem or apply appropriate method of analysis to draw valid conclusions and present, demonstrate, execute final version of project	PO4, PO5
CO4	Incorporate the social, environmental and ethical issues effectively into solution	PO6, PO7,

	of an engineering problem	PO8
CO5	Contribute effectively as a team member or leader to manage the project timeline	PO9, PO11
CO6	Write pertinent project reports and make effective project Presentations	PO10

CO-PO mapping of the project work:

The correlation between COs and POs/ PSOs for project work

CO/ PO	PO1	PO2	PO3	PO4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO11	PO1 2	PSO1	PSO2	PSO3
CO1	–	3	–	–	–	–	–	–	–	–	–	3	3	3	3
CO2	3	–	3	–	–	–	–	–	–	–	–	–	3	3	3
CO3	–	–	–	3	3	–	–	–	–	–	–	–	3	3	3
CO4	–	–	–	–	–	3	3	3	–	–	–	–	–	–	3
CO5	–	–	–	–	–	–	–	–	3	–	3	–	–	–	3
CO6	–	–	–	–	–		–	–	–	3	–	–	–	–	3

Internal assessment process of project work:

Weightages of project work internal assessment (Throughout Academic Year)

Review	Activity	Activity Marks	Assessment	Review Assessment Weightage	CO Covered
A1	Submission of Project topics with name of group members, Submission of synopsis with guide's signature	4	Rubric PR1	20% (20)	CO1
A2	Presentation-I : Synopsis Presentation in front of DRC	4	Rubric PR2 & PR6	10% (10) & 5% (05)	CO2 & CO5
A3	Presentation-II: Presentation on Introduction and literature	12	Rubric PR3 & PR6	10% (10) & 5% (05)	CO2 & CO5

	review of the project				
A4	Presentation-III: Presentation of Methodology and future work of project.	15	Rubric PR4, PR5 & PR6	20% (20), 10% (10) & 5% (05)	CO3, CO4 & CO5
A5	Guide Marks	15	Rubric PR7	15% (15)	CO6
	Total			**100% (100)**	

Rubric #PR1: Project Synopsis/Proposal Evaluation

Maximum Marks*: 20

		Excellent (4)	**Good (3)**	**Average (2)**	**Poor (1-0)**
a	**Topic selection**	Complete Innovative and useful for society	Somewhat innovative and useful for society	Useful for society but not innovative	Useful for limited group and not innovative
b	**Problem Definition**	Exceeds expectation. Identification of the social, environmental and ethical issues of the project problem	Extend expectation in some manner Problem and its implications well understood and described both in viva	Meets expectation in some manner. Problem and its implications understood but not well described or presented.	Nearly meet expectations Steps to be followed to solve the defined problem are not specified properly
c	**Literature Survey Purpose and need of the project**	Outstanding investigation in all aspects. Detailed and extensive explanation of the purpose and need of the project	Well-researched project, good depth and thoroughness, sensible planning of research and well referenced throughout. Collects a great deal of information and good study of the existing systems	Research is clear and structured. Appropriate coverage is present and referenced. Moderate study of the existing systems; collects some basic information	Minimal research or cursory coverage , minimal referencing, Moderate explanation of the purpose and need of the project
d	**Justification of Project Objectives**	All objectives of the proposed work are well defined; Steps to be followed to solve the defined problem are clearly specified	Good justification to the objectives; Methodology to be followed is specified but detailing is not done	Incomplete justification to the objectives proposed; Steps are mentioned but unclear; without justification to objectives	Limited information Only Some objectives of the proposed work are defined;
e	**Project Scheduling & Distribution of**	Detailed and extensive Scheduling with timelines provided for	Good Scheduling of project. Work breakdown structure properly defined.	Moderate scheduling of project. Work breakdown insufficient	Poor / No Project scheduling done. No Work breakdown structure provided.

	Work among Team members	each phase of project. Work breakdown structure well defined.			

TOTAL MARKS= a+b+c+d+e

Rubric #PR2: First Project Evaluation

Maximum Marks*: 10

LEVELS OF ACHIEVEMENTS					
		Excellent (10-9)	**Good (8-7)**	**Average (6-5)**	**Poor (4-0)**
a.	**Quality of Software Requirements Specification**	Outstanding clarity of thought and documentation in the development of design from the specification using and adapting models appropriately. Excellent incisive analysis leading to well defined model/ requirements specification of high quality that is fully accurate.	Focus is on specification and the design follows from it, using most appropriate elements of chosen design technique. Analysis is well presented and leads to a sound well documented model/ requirements specification.	Design techniques used minimally though correctly on specification. Minimal model/ requirements specification is created	Very minimal analysis. Very Minimal model/ requirements specification is created
b.	**Quality, appropriateness and accuracy of Design**	Excellent design covering all aspects of the specification, fully appropriate to the project, shoeing clear thinking	Appropriate design, clear and accurate, satisfactory for the implementation of the project.	Limited design, or design not well related to specification or model	Very minimal design

TOTAL MARKS= (a+b)/2

Rubric #PR3: Second Project Evaluation

Maximum Marks*: 10

LEVELS OF ACHIEVEMENTS					
		Excellent (10-9)	**Good (8-7)**	**Average (6-5)**	**Poor (4-0)**

a	**Quality, appropriateness and accuracy of project Implem entation**	Excellent use of software engineering principles and models both at higher and lower levels in implementation from design cycle. Documented use of complex features in the language /package which show quantitatively and qualitatively the improvements gained. An excellent fully operating technically outstanding project. Project fulfils functional requirements specifi cation exactly with no limitations or failures of any type	Very well engineered solution, with evidence that the student has used proven method in transforming design into implementation. Appropriate use of facilities to make implementation more efficient or effective. Effective and efficient implementat ion technically with only minor limitations. Project works well with only some minor functional limitations	Appropriately engineered implementation which follows from design. Language/package facilities exploited to suggest a functional implementation. Project with some limitations, mostly technically sound. Project essentially works but with some severe functional limitations	In sufficient implementation to show competent use of any problem solving methods. Minimal implementation . Poor technical quality with little use of development skills or knowledge in evidence. Project does not work in most parts to requirements specification
b	**Quality, appropriateness and accuracy of Testing**	A quality piece of work giving full coverage of the solution and full program of testing/ evaluation undertaken	Extensive and well organized implementation and testing/evaluation documentation	Sufficient implementation documentation and testing/evaluation documentation	Minimal implementation documentation or testing/evaluati on documentation

TOTAL MARKS= (a+b)/2

Rubric #PR4: Third Project Evaluation

Maximum Marks*: 20

LEVELS OF ACHIEVEMENTS					
		Excellent (20-16)	**Good (15-11)**	**Average (10-6)**	**Poor (5-0)**
a	**Quality and accuracy of Software System/Model**	Excellent design covering all aspects of the specification, fully appropriate to the project, shoeing clear thinking. An excellent fully operating technically outstanding project. Outstanding clarity of thought and	Appropriate design, clear and accurate, satisfactory for the implementation of the project. Very well engineered solution, with evidence that the student has used proven method in	Design not well related to specification or model. Language/packag e facilities exploited to suggest a functional implementation. Project with some	Very minimal design. In sufficient implementation to show competent use of any problem solving methods. Poor technical quality with little use of development skills or knowledge

		documentation in the development of design from the specification using and adapting models appropriately. A quality piece of work giving full coverage of the solution and full programme of testing/ evaluation undertaken	transforming design into implementation. Effective and efficient impleme ntation with only minor limitations. Extensive and well organized implementation and testing/evaluation documentation	limitations, mostly technically sound. Project essentially works but with some severe limitations. Sufficient implementation documentation and testing/evaluation documentation	in evidence. Project does not work in most parts to requirements specification. Minimal implementation documentation or testing/evaluation documentation
b	**Demonstration of software system /Module workin g and Functioning**	All defined objectives are achieved. Each module working well and properly demonstrated. All modules of project are well integrated and system working is accurate	All defined objectives are achieved. Each module working well and properly demonstrated. Integration of all modules not done and system working is not Very satisfactory	All defined objectives are achieved. Modules are working well in isolation and properly demonstrate. Modules of project are not properly integrated	Only some of the defined objectives are achieved. Modules are not in proper working form that further leads to failure of integrated system

TOTAL MARKS= (a+b)/2

Rubric #PR5

Maximum Marks*: 10

LEVELS OF ACHIEVEMENTS					
		Excellent (10-9)	**Good (8-7)**	**Average (6-5)**	**Poor (4)**
a.	**Identification of the social, environmental and ethical issues of the project problem**	Identifying and solving social, environmental and ethical issues	Identifying and solving social, environmental or ethical issues	Identifying social, environmental or ethical issues	Not able to Identify any issues

Rubric #PR6 Individual Contribution Evaluation

Maximum Marks*: 5

LEVELS OF ACHIEVEMENTS					
		Excellent (5)	**Good (4)**	**Average (3)**	**Poor (2-0)**

a	**Individual Presentation**	Excellently planned and executed presentation and demo leaving the listeners in no doubt of the value of the product. Contents of presentations are appropriate and well delivered. Proper eye contact with audience and clear voice with good spoken language	Quality presentation and demo. Clear and concise description leaving listeners with sound understanding of project and its problems. Contents of presentations are appropriate and well delivered. Clear voice with good spoken language but less eye contact with audience	Timed and prepared presentation, demo with student describing what has been learnt. Contents of presentations are appropriate but not well delivered. Eye contact with only few people and unclear voice	No presentation or no demo or student unable to articulate project development. Contents of presentations are not appropriate and not well delivered. Poor eye contact with audience and unclear voice
b	**Individual Contribution**	Excellent Contribution showing his/her dependency in project	Good contribution as reflected in overall work	Some contribution as reflected in overall work.	No Contribution
c	**To observe the completion of work referring to the original set plan**	Ahead of the proposed plan	In pace with the plan	Delayed but can cope up with the lag at their own	Interventional help is needed

TOTAL MARKS= (a+b+c)/3

Rubric #PR7: Project Report Evaluation

Maximum Marks*: 15

LEVELS OF ACHIEVEMENTS					
		Excellent (15-12)	**Good (11-8)**	**Average (7-4)**	**Poor (4-0)**
a	**Style, structure and form and the perceived clarity, 'readability of report**	Outstanding, comprehensive and clear report, Fully referenced	Effective report using academic language accurately referenced.	Acceptable report structure, some referencing, no missing parts, clarity of language	Report is unbalanced or unclear, or it is difficult to follow ideas. Major sections missing, or no referencing

b	**Effectiveness of the project report**	Accurately referenced, very high standard of presentation aimed at the right level throughout. Full y referenced. Complete explanation of the key concepts and strong description of the technical requirements of the project	Effective technical /business report fully structured, accurately referenced. Complete explanation of the key concepts but in-sufficient description of the technical requirements of the project	Adequate report presentation references included. Incomplete explanation of the key concepts and in-sufficient description of the technical requirements of the project	Referencing is poor or inconsistent, or lack of illustrative content. Report is unreadable as an English report Inappropriate explanation of the key concepts and poor description of the technical requirements of the project
c	**Results, Conclusion a nd Discussio n**	Results are presented in very appropriate manner. Project work is well summarized and concluded. Future extensions in the project are well specified	Results are presented in good manner. Project work summary and conclusion not very appropriate. Future extensions in the project are specified	Results presented are not much satisfactory. Project work summary and conclusion not very appropriate. Future extensions in the project are not specified	Results are not presented properly. Project work is not summarized and concluded. Future extensions in the project are not specified

TOTAL MARKS= (a+b+c)/3

B. TECH PROJECT EVALUATION FORMS

Weightages of project work internal assessment (Throughout Academic Year)

Review #	Agenda	Assessment	Review Assessment Weightage	CO Covered
Review 1	Project Synopsis / Proposal Evaluation	Rubric PR1	20% (20)	CO1
Review 2	1st Project Evaluation	Rubric PR2 & PR6	10% (10) & 5% (05)	CO2 & CO5
Review 3	2nd Project Evaluation	Rubric PR3 & PR6	10% (10) & 5% (05)	CO2 & CO5
Review 4	3rdProject Evaluation	Rubric PR4, PR5 & PR6	20% (20), 10% (10) & 5% (05)	CO3, CO4 & CO5
Review 5	Project Report Evaluation	Rubric PR7	15% (15)	CO6
Total			**100% (100)**	

Academic Year:

_____

Class:_____

_____

Name of the Project Guide:

_____

Name of the Student:

_____

Group Number:_____

_____

Form #PR1: Project Synopsis/Proposal Evaluation

Maximum Marks*: 20

		Excellent (4)	**Good (3)**	**Average (2)**	**Poor (1-0)**
a	Topic selection				
b	Problem Definition				
c	Literature Survey Purpose and need of the project				
d	Justification of Project Objectives				
e	Project Scheduling & Distribution of Work among Team members				

TOTAL MARKS= a+b+c+d+e

Signature of Project Guide/Evaluator

_____

Form #PR2: First Project Evaluation

Maximum Marks*: 10

LEVELS OF ACHIEVEMENTS					
		Excellent	**Good (8-7)**	**Average (6-5)**	**Poor (4-0)**

		(10-9)			
a.	Quality of Software Requirements Specification				
b.	Quality, appropriateness and accuracy of Design				

TOTAL MARKS= (a+b)/2

Signature of Project Guide/Evaluator

Form#PR3: Second Project Evaluation

Maximum Marks*: 10

LEVELS OF ACHIEVEMENTS					
		Excellent (10-9)	**Good (8-7)**	**Average (6-5)**	**Poor (4-0)**
a	Quality, appropriateness and accuracy of project Implementation				
b	Quality, appropriateness and accuracy of Testing				

TOTAL MARKS= (a+b)/2

Signature of Project Guide/Evaluator

Form#PR4: Third Project Evaluation

Maximum Marks*: 20

LEVELS OF ACHIEVEMENTS					
		Excellent (20-16)	**Good (15-11)**	**Average (10-6)**	**Poor (5-0)**
a	Quality and accuracy of Software System/Model				
b	Demonstration of software system /Module working and Functioning				

TOTAL MARKS= (a+b)/2

Signature of Project Guide/Evaluator

Form#PR5

Maximum Marks*: 10

LEVELS OF ACHIEVEMENTS

		Excellent (10-9)	Good (8-7)	Average (6-5)	Poor (4)
a.	Identification of the social, environmental and ethical issues of the project problem				

Signature of Project Guide/Evaluator

Form#PR6 Individual Contribution Evaluation

LEVELS OF ACHIEVEMENTS					
		Excellent (5)	**Good (4)**	**Average (3)**	**Poor (2-0)**
a	Individual Presentation				
b	Individual Contribution				
c	To observe the completion of work referring to the original set plan				

Maximum Marks*: 5

TOTAL MARKS= (a+b+c)/3

Signature of Project Guide/Evaluator

_____

_____

Form #PR7: Project Report Evaluation

Maximum Marks*: 15

LEVELS OF ACHIEVEMENTS					
		Excellent (15-12)	**Good (11-8)**	**Average (7-4)**	**Poor (4-0)**
a	Style, structure and form and the perceived clarity, 'readability of report				
b	Effectiveness of the project report				
c	Results, Conclusion and Discussion				

TOTAL MARKS= (a+b+c)/3

Signature of Project Guide/Evaluator

_____

_____

11-Department Faculty Details

Academic Year: 2024-25

Sr. No	Name of Faculty	Designation	Email ID	Mobile No.
1	Prof. R. A. Bharatiya	HOD IT	rajesh.sanadi@jjmcoe.ac.in	9860650444
2	Prof. J. T. Patil	Assistant Professor	jayashri.patil@jjmcoe.ac.in	8605962312
3	Prof. S. J. Chougule	Assistant Professor	Sadhana.chougule@jjmcoe.ac.in	7774009161
4	Prof. P. A. Tamgave	Assistant Professor	pranoti.tamgave@jjmcoe.ac.in	9119454504
5	Prof. S. B. Holkar	Assistant Professor	sayali.holkar@jjmcoe.ac.in	9665397982
6	Prof. P. R. Patil	Assistant Professor	pournima.patil@jjmcoe.ac.in	8788096923
7	Prof. S. A. Bandgar	Assistant Professor	seema.bandgar@jjmcoe.ac.in	8390131345
8	Prof. N. A. Kothali	Assistant Professor	namita.kothali@jjmcoe.ac.in	9405258817
9	Prof. P. P. Mane	Assistant Professor	priyanka.mane@jjmcoe.ac.in	7620155371
10	Prof. D. Madnaik	Assistant Professor	dhanashree.madnaik@jjmcoe.ac.in	9404987078

*Indicates Female Faculties

12-Department Staff:

Academic Year: 2024-25

Sr.No	Name of the Staff	Designation	Email ID	Phone No
1	Ms. V. S. Patil	Technical Assistant	veena.patil@jjmcoe.ac.in	9975031658
2	Mr. Bhosale	Peon		9673875263

Prof. S. J. Chougule
Academic Coordinator

Prof. R. A. Bharatiya
HOD-IT