

Savitribai Phule Pune University, Pune
SE(Civil Engineering) 2019 Course
 (With effect from Academic Year 2020-21)

Semester-IV

Course Code	Course Name	Teaching Scheme (Hours/Week)			Examination Scheme and Marks						Credit			
		Theory	Practical	Tutorial	IN-Sem	End-Sem	TW	PR	OR	Total	TH	PR	TUT	Total
201008	Geotechnical Engineering	03	-	-	30	70	--	-	-	100	03	--	--	03
201009	Survey	03	-	-	30	70	-	-	-	100	03	-	-	03
201010	Concrete Technology	03	-	-	30	70	-	-	-	100	03	-	-	03
201011	Structural Analysis	03	-	--	30	70	-	-	-	100	03	-	--	03
201012	Project management	03	--	-	30	70	--	--	--	100	03	-	-	03
201013	Geotechnical Engineering Lab	-	02	-	-	-	-	-	50	50	-	01	-	01
201014	Survey Lab	-	04	-	-	-	-	50	-	50	-	02	-	02
201015	Concrete Technology Lab	-	02	-	-	-	25	-	-	25	-	01	-	01
201016	Structural Analysis Tutorial	--	-	01	--	--	25	-	-	25	--	-	01	01
201017	Project Based Learning	-	04	-	-	-	50	-	-	50	-	02	-	02
Total		15	12	01	150	350	100	50	50	700	15	06	01	22

Abbreviations:

TH : Theory TW: Term Work PR : Practical OR: Oral TUT : Tutorial

Note: The Underlined portion of the syllabus will be covered by video lectures/ on-line lectures/ flip classroom, self study, NPTEL course lectures and/or using relevant ICT technique



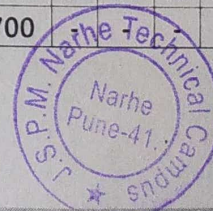
Savitribai Phule Pune University
Second Year of Computer Engineering (2019 Course)
(With effect from Academic Year 2020-21)

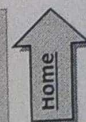
Semester-III

Course Code	Course Name	Teaching Scheme (Hours/Week)			Examination Scheme and Marks						Credit Scheme			
		Lecture	Practical	Tutorial	Mid-Sem	End-Sem	Term work	Practical	Oral	Total	Lecture	Practical	Tutorial	Total
210241	Discrete Mathematics	03	-	-	30	70	-	-	-	100	03	-	-	03
210242	Fundamentals of Data Structures	03	-	-	30	70	-	-	-	100	03	-	-	03
210243	Object Oriented Programming (OOP)	03	-	-	30	70	-	-	-	100	03	-	-	03
210244	Computer Graphics	03	-	-	30	70	-	-	-	100	03	-	-	03
210245	Digital Electronics and Logic Design	03	-	-	30	70	-	-	-	100	03	-	-	03
210246	Data Structures Laboratory	-	04	-	-	-	25	50	-	75	-	02	-	02
210247	OOP and Computer Graphics Laboratory	-	04	-	-	-	25	25	-	50	-	02	-	02
210248	Digital Electronics Laboratory	-	02	-	-	-	25	-	-	25	-	01	-	01
210249	Business Communication Skills	-	02	-	-	-	25	-	-	25	-	01	-	01
210250	Humanity and Social Science	-	-	01	-	-	25	-	-	25	-	-	01	01
210251	Audit Course 3													
Total Credit											15	06	01	22
Total		15	12	01	150	350	125	75	-	700	-	-	-	-

Semester-IV

Course Code	Course Name	Teaching Scheme (Hours/Week)			Examination Scheme and Marks						Credit Scheme			
		Lecture	Practical	Tutorial	Mid-Sem	End-Sem	Term work	Practical	Oral	Total	Lecture	Practical	Tutorial	Total
207003	Engineering Mathematics III	03	-	01	30	70	25	-	-	125	03	-	01	04
210252	Data Structures and Algorithms	03	-	-	30	70	-	-	-	100	03	-	-	03
210253	Software Engineering	03	-	-	30	70	-	-	-	100	03	-	-	03
210254	Microprocessor	03	-	-	30	70	-	-	-	100	03	-	-	03
210255	Principles of Programming Languages	03	-	-	30	70	-	-	-	100	03	-	-	03
210256	Data Structures and Algorithms Laboratory	-	04	-	-	-	25	25	-	50	-	02	-	02
210257	Microprocessor Laboratory	-	02	-	-	-	25	-	25	50	-	01	-	01
210258	Project Based Learning II	-	04	-	-	-	50	-	-	50	-	02	-	02
210259	Code of Conduct	-	-	01	-	-	25	-	-	25	-	-	01	01
210260	Audit Course 4													
Total Credit											15	05	02	22
Total		15	10	02	150	350	150	25	25	700	-	-	-	-





Savitribai Phule Pune University
Second Year of Computer Engineering (2019 Course)

210258: Project Based Learning II

Teaching Scheme	Credit Scheme	Examination Scheme and Marks
Practical: 04 Hours/Week	02	Term Work: 50 Marks

Course Objectives:

- To develop critical thinking and problem solving ability by exploring and proposing solutions to realistic/social problem.
- To Evaluate alternative approaches, and justify the use of selected tools and methods.
- To emphasizes learning activities that are long-term, inter-disciplinary and student-centric.
- To engages students in rich and authentic learning experiences.
- To provide every student the opportunity to get involved either individually or as a group so as to develop team skills and learn professionalism.
- To develop an ecosystem that promotes entrepreneurship and research culture among the students.

Course Outcomes:

- CO1:** Identify the real life problem from societal need point of view
CO2: Choose and compare alternative approaches to select most feasible one
CO3: Analyze and synthesize the identified problem from technological perspective
CO4: Design the reliable and scalable solution to meet challenges
CO5: Evaluate the solution based on the criteria specified
CO6: Inculcate long life learning attitude towards the societal problems

Course Contents

Preamble:

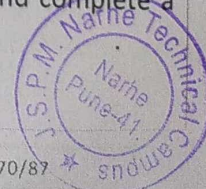
Project-based learning is an instructional approach designed to give students the opportunity to develop knowledge and skills through engaging projects set around challenges and problems they may face in the real world. PBL, is more than just projects. With PBL students "investigate and respond to an authentic, engaging, and complex problem, or challenge" with deep and sustained attention. PBL is "learning by doing." The truth is, many in education are recognizing we live in a modern world sustained and advanced through the successful completion of projects. In short, If students are prepared for success in life, we need to prepare them for a project-based world. It is a style of active learning and inquiry-based learning. (Reference: Wikipedia). Project based learning will also redefine the role of teacher as mentor in learning process. Along with communicating knowledge to students, often in a lecture setting, the teacher will also to act as an initiator and facilitator in the collaborative process of knowledge transfer and development. The PBL model focuses the student on a big open-ended question, challenge, or problem to research and respond to and/or solve. It Brings what students should academically know, understand, and be able to do and requires students to present their problems, research process, methods, and results.^[1]

Project based learning (PBL) requires regular mentoring by faculty throughout the semester for successful completion of the idea/project tasks selected by the students per batch. For the faculty involved in PBL, teaching workload of 4 Hrs/week/batch needs to be considered. The Batch should be divided into sub-groups of 4 to 5 students. Idea implementation /Real life problem/Complex assignments / activities / projects. under project based learning is to be carried throughout semester and Credit for PBL has to be awarded on the basis of internal continuous assessment and evaluation at the end of semester

Group Structure:

Working in supervisor/mentor monitored groups; the students plan, manage, and complete a task/project/activity which addresses the stated problem.

1. There should be team/group of 4-5 students
2. A supervisor/mentor teacher assigned to individual groups



Selection of Project/Problem:

The problem-based project oriented model for learning is recommended. The model begins with the identifying of a problem, often growing out of a question or "wondering". This formulated problem then stands as the starting point for learning. Students design and analyze the problem/project within an articulated interdisciplinary or subject frame.

A problem can be theoretical, practical, social, technical, symbolic, cultural, and/or scientific and grows out of students' wondering within different disciplines and professional environments. A chosen problem has to be exemplary. The problem may involve an interdisciplinary approach in both the analysis and solving phases.

By exemplarity, a problem needs to refer back to a particular practical, scientific, social and/or technical domain. The problem should stand as one specific example or manifestation of more general learning outcomes related to knowledge and/or modes of inquiry.

There are no commonly shared criteria for what constitutes an acceptable project. Projects vary greatly in the depth of the questions explored, the clarity of the learning goals, the content, and structure of the activity.

A few hands-on activities that may or may not be multidisciplinary.

Use of technology in meaningful ways to help them investigate, collaborate, analyse, synthesize, and present their learning.

Activities may include- Solving real life problem, investigation, /study and Writing reports of in depth study, field work.

Assessment:

The institution/head/mentor is committed to assessing and evaluating both student performance and program effectiveness.

Progress of PBL is monitored regularly on weekly basis. Weekly review of the work is necessary. During process of monitoring and continuous assessment and evaluation of the individual and the team performance is to be measured. PBL is monitored and continuous assessment is done by supervisor /mentor and authorities.

Students must maintain an institutional culture of authentic collaboration, self-motivation, peer-learning and personal responsibility. The institution/department should support students in this regard through guidance/orientation programs and the provision of appropriate resources and services. Supervisor/mentor and Students must actively participate in assessment and evaluation processes.

Group may demonstrate their knowledge and skills by developing a public product and/or report and/or presentation.

1. Individual assessment for each student (Understanding individual capacity, role and involvement in the project)
2. Group assessment (roles defined, distribution of work, intra-team communication and togetherness)
3. Documentation and presentation

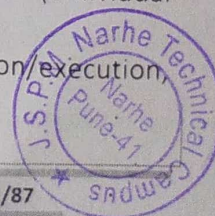
Evaluation and Continuous Assessment:

It is recommended that all activities should be recorded regularly, regular assessment of work need to be done and proper documents need to be maintained at college end by both students as well as mentor (PBL work book).

Continuous Assessment Sheet (CAS) is to be maintained by all mentors/department and institutes.

Recommended parameters for assessment/evaluation and weightage:

1. Idea Inception and Awareness /Consideration of -Environment/ Social /Ethics/ Safety measures/Legal aspects (10%)
2. Outcomes of PBL/ Problem Solving Skills/ Solution provided/ Final product (Individual assessment and team assessment) (40%)
3. Documentation (Gathering requirements, design and modelling, implementation/execution, use of technology and final report, other documents) (15%)
4. Demonstration (Presentation, User Interface, Usability) (20%)



5. Contest Participation/ publication (15%)

PBL workbook will serve the purpose and facilitate the job of students, mentor and project coordinator. It will reflect accountability, punctuality, technical writing ability and work flow of the work undertaken.

Note :

- While planning for the assessment, choose a valid method based on your context. It should be able to understand by both the students as well as the faculty.
- The student group must follow the principles of Software Engineering (Scoping out the problem, the solution implementation and related documentation).
- Researching the problem and outlining various approaches is key here and should be emphasized by the tutor and the mentor.
- Aspects of design thinking (from the point of view of the person facing the problem) are very important. Students should not jump into the technology aspects first.
- The team can follow the principles of Agile Software Development. The weekly meetings could be used as a Scrum meeting.
- The tutor and mentor should actively help the students to scope the work and the approach. They must validate the technology choices.
- If the implementation code is well documented, the project can be continued by subsequent batch – which will help solve a bigger problem.

Text Books:

1. A new model of problem based learning. By Terry Barrett. All Ireland Society for higher education (AISHE). ISBN:978-0-9935254-6-9; 2017
2. Problem Based Learning. By Mahnazmoallem, woei hung and Nada Dabbagh, Wiley Publishers. 2019.
3. Stem Project based learning and integrated science, Technology, Engineering and mathematics approach. By Robert Capraro, Mary Margaret Capraro

Reference Books:

1. De Graaff E, Kolmos A., red.: Management of change: Implementation of problem-based and project-based learning in engineering. Rotterdam: Sense Publishers. 2007.
2. Gopalan, " Project management core text book", 2 Indian Edition
3. James Shore and Shane Warden, " The Art of Agile Development"

Tutors Role in Project Based Learning

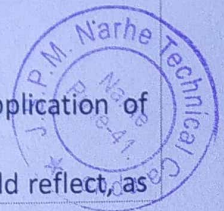
- The fundamentals of problem based learning, lies with the Tutors role.
- Tutors are not the source of solutions rather they act as the facilitator and mentor.
- The facilitator skills of the Tutors / Teacher are central to the success of PBL.

Change of Mindset

- Students are not used to the constructivist approach to learning, it is important that they are carefully told what to expect in PBL.
- Tutors need to explain the differences between PBL and traditional learning.
- Tutors need to explain the principals involved and role of the students in PBL learning.

Designing Problem

- Considering the prior knowledge of the students, their ability and creativity, problem statement should be designed.
- For 2nd year PBL students the tutor should place more emphasis on getting the students to perform higher-level tasks.
- It is important for tutors to design problems that are anchored in authentic contexts only
- Students should take ownership of the problem.
- Problems should not be over simplified or well defiled
- Learning should not be the sequencing of instructional events, but the application of principles for responding to the needs of the situation.
- The problems given to students in PBL should be realistic, complex, and should reflect, as



much as possible, the actual problems that students would encounter in real life.

Basic function of the tutor

- A good understanding of the overall curriculum the students have to study, the principles of problems solving, critical thinking and meta-cognitive skills.

Grouping

- Study the background and profile of each student.
- Make sure that students of different backgrounds and experience are assigned in a group
- It is useful to group students of different abilities, gender, and nationalities together.
- Tutors must have the commitment to devote the time to the tutorial process.
- A good tutor is always interested in helping students to learn better.
- Sufficient resources should be made available for students to take part the PBL tutorial.
- Time management is important.

Assessment of Learning

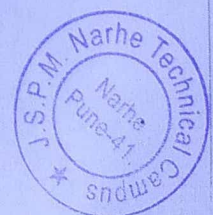
- It is important for tutors to make sure that assessment is consistent with learning objectives of the groups in PBL
- Assessment of students should not be focused only on the final leaning product.
- PBL tutors need to understand meaningful ways of assessing students' work to motivate learning.
- For assessment to be implemented properly there should be well designed and clearly defined goals and objectives and well thought out strategies, techniques, criteria, and marking schemes.

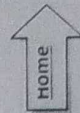
Student's Role in PBL

- Prepare students for PBL before starting the sessions.
- Students must have ability to initiate the task/idea .they should not be mere imitators.
- They must learn to think.
- Students working in PBL must be responsible for their own learning.
- Throughout the PBL process, students have to define and analyze the problem, generate learning issues and apply what they have learned to solve the problem and act for themselves and be free.
- Students must quickly learn how to manage their own learning, Instead of passively receiving instruction.
- Students in PBL are actively constructing their knowledge and understanding of the situation in groups.
- Students in PBL are expected to work in groups.
- They have to develop interpersonal and group process skills, such as effective listening or coping creatively with conflicts.

Inquiry Skills

- Students in PBL are expected to develop critical thinking abilities by constantly relating:
 - What they read to do?
 - What they want to do with that information?
 - They need to analyze information presented within the context of finding answers.
 - Modeling is required so that the students can observe and build a conceptual model of the required processes.
 - Formative and summative questions for evaluation:
 - How effective is?
 - How strong is the evidence for?
 - How clear is?
 - What are the justifications for thinking?
 - Why is the method chosen?
 - What is the evidence given to justify the solution?





Information Literacy

- Information literacy is an integral part of self-directed learning
- Information literacy involves the ability to:
 - Know when there is a need for information
 - Identify the information needed to solve a given problem or issue
 - Be able to locate the needed information
 - Use the information to solve the given problem effectively.
- Skills required by students in information literacy include:
 - How to prepare the search , How to carry out the research,
 - Sorting and assessing of information in general

Collaborative learning

- It is an educational approach to teaching and learning that involves
- groups of students working together to solve a problem or complete a project
- In collaborative learning, learners have the opportunity to talk with peers, exchange diverse beliefs present and defend ideas, as well as questioning other ideas.

Interpersonal Skills

- Interpersonal skills relating to group process are essential for effective problem solving and learning.
 - It is important that students are made aware of these inter personal skills.
 - Consensual decision making skills, Dialogue and discussion skills, Team maintenance skills
 - Conflict management skills and Team leadership skills.
- Students who have these skills have a better opportunity to learn than students who do not have these skills and Time Management

Resources

- Students need to have the ability to evaluate the resources used
- Students have to evaluate the source of the resources used by asking the following questions:
- How current is it?, Is there any reason to suspect bias in the source?
 - How credible and accurate is it?

Meta-cognitive Skills

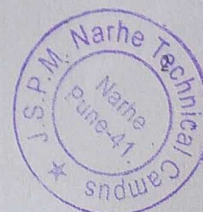
- Students need to reflect on the processes they are using during the learning process,
- Compare one strategy with another, and evaluate the effectiveness of the strategy used

Reflection Skills

- Reflection helps students refine and strengthen their high-level thinking skills and abilities through self-assessment.
- Reflection gives students opportunities to think about how they answered a question, made a decision, or solved a problem.
- What strategies were successful or unsuccessful? ,What issues need to be remembered for next time? , What could or should be done differently in the future?

@The CO-PO Mapping Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	-	-	-	-	-	-	-	-	-	-	-
CO2	-	2	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	3	-	-	-	-	-	-	-	-
CO4	-	-	-	-	2	-	-	-	-	-	-	-
CO5	-	-	-	-	-	3	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-



Savitribai Phule Pune University, Pune
S.E. (Electronics / E&TC Engineering) 2019 Course
 (With effect from Academic Year 2020-21)

Semester-IV

Course Code	Course Name	Teaching Scheme (Hours/Week)			Examination Scheme and Marks						Credit			
		Theory	Practical	Tutorial	In-Sem	End-Sem	TW	PR	OR	Total	TH	PR	TUT	Total
204191	Signals & Systems	03	-	01	30	70	25	-	-	125	03	-	01	04
204192	Control Systems	03	-		30	70		-	-	100	03	-	-	03
204193	Principles of Communication Systems	03	-	-	30	70	-	-	-	100	03	-	-	03
204194	Object Oriented Programming	03	-	-	30	70	-	-	-	100	03	-	-	03
204195	Signals & Control System Lab		02				50			50		01		01
204196	Principle of Communication Systems Lab	-	02	-	-	-	-	50	-	50	-	01	-	01
204197	Object Oriented Programming Lab	-	02	-	-	-	-	-	50	50	-	01	-	01
204198	Data Analytics Lab		02				-		25	25		01		01
204199	Employability Skill Development	02	02	-	-	-	50	-	-	50	02	01	-	03
204200	Project Based Learning [†]	-	04				50		-	50		02		02
204201	Mandatory Audit Course 4 ^{&}	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		14	14	01	120	280	175	50	75	700	14	07	01	22

Abbreviations:

In-Sem: In semester
 PR : Practical

End-sem: End semester
 OR : Oral

TH : Theory
 TUT : Tutorial

TW : Term Work

Note: Interested students of S.E. (Electronics/E&TC) can opt any one of the audit course from the list of audit courses prescribed by BoS (Electronics & Telecommunications Engineering)

JSPM Narhe Technical Campus, Narhe Pune-41
Department of Electronics & Telecommunication Engineering
SEM-II (A.Y. 2021-2022)

Date: 14/03/2022

NOTICE

All the students of S.E. E&TC are here by informed to finalize the topic for Project Based Learning by the proper discussion with their respective guide. All groups must register their topics on or before 28/03/2022 to Mr. A.B. Ikhe

Project Selection

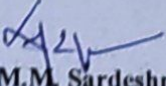
The project can be selected by understanding a survey of journal paper, patents or field visit (A problem can be theoretical, practical, social, technical, symbolic, cultural and/ or scientific). The problem shall consist of following facets:

1. Feasibility of arriving of at a solution
2. Analyzing problem
3. Design and development of the system (hardware or virtual/software).

Refer the syllabus copy of S.E. E&TC (2019 Pattern) of SPPU, Pune university.


Mr. A.B. Ikhe

Project Based Learning Coordinator (E&TC)


Dr. M.M. Sardeshmukh
HOD (E&TC)

Enclosure: Project Based Learning Guide Allotment

JSPM Narhe Technical Campus, Narhe Pune-41
Department of Electronics & Telecommunication Engineering
SEM-II (A.Y. 2021-2022) Class: S.E. (E&TC)

Guide Allotment for PBL Group

Group No.	Roll No.	Student Name	Guide Name	Remark
1	1	Agnihotri Shruti Sanjay	Mrs. S.N. Pawar	<i>S.N. Pawar</i>
	24	Ingale Snehal Dhanaji		
	30	Kambale Sandhyarani Prakash		
2	67	Hanmante Sejal Hemant	Mr. A.B. Ikhe	<i>A.B. Ikhe</i>
	28	Kadrame Rameshwai Siddharam		
	31	Sneha shrikant Karande		
3	56	Patankar Shivam Jaysing	Mrs. J.R. Shinde	<i>J.R. Shinde</i>
	58	Patil Dhiraj Divakar		
	59	Patil Himanshu Bhikanrao		
4	15	Dhenge Mrunali Bhagwat	Mrs. K.P. Wagh	<i>K.P. Wagh</i>
	62	Rokade Daya Bapurav		
	75	Udhane Samiksha Santosh		
5	37	Lahane Akshay Kakasaheb	Mr. A.B. Ikhe	<i>A.B. Ikhe</i>
	71	Shruti Shashikant Magar		
	77	Wategaonkar Swaroop Shirish		
6	9	Bhosale Giriraj Anilkumar	Mrs. N.R. Kadam	<i>N.R. Kadam</i>
	36	Kulkarni Aditya Sunil		
	68	Sharma Prathmeh Suraj		
7	73	Suryawanshi Abhijeet Dilip	Mrs. A.S. Patil	<i>A.S. Patil</i>
	61	Raut Radhika Sunil		
	18	Gadave Rohit Vijay		
8	8	Bhole Yoshita Gunwant	Mr. A.B. Ikhe	<i>A.B. Ikhe</i>
	22	Helge Neha Kailash		
	60	Pawar Pratiksha Rohidas		
9	2	Badgujar Mohit Bhimrao	Dr. S.W. Shaikh	<i>S.W. Shaikh</i>
	3	Batule Pawan Balasaheb		
	4	Bhalerao saurabh upendra		
10	5	Bhandare Rohan Bapurao	Dr. M.M. Sardeshmukh	<i>M.M. Sardeshmukh</i>
	6	Bhandarkar Om Ravindra		
	7	Bhandekar Sail Chandrakant		
11	10	Bichkule Vishal Balasaheb	Mrs. M.P. Hajare	<i>M.P. Hajare</i>
	11	Chaudhari Namrata Ajay		
	12	Chavan Pranav Ravindranath		
12	13	Choudhary Krushnal Bharat	Mrs. S.N. Pawar	<i>S.N. Pawar</i>
	14	Deshmukh Nishant Prashant		
	16	Dhome Prajakta Rajaram		

Group No.	Roll No.	Student Name	Guide Name	Remark
13	17	Donajamath Pratik Prakash	Mrs. J.R.Shinde	<i>J.R.Shinde</i>
	19	Gaurang Ravindra Joshi		
	20	Gavahane Abhishek Arun		
14	21	Gurav Aniket Ashok	Mrs. K.P.Wagh	<i>K.P.Wagh</i>
	23	Honde Prachee Sudhir		
	25	Jadhav Harshwardhan Dattatray		
15	26	Jagannath Sakharam Suryawanshi	Mrs. N.R.Kadam	<i>NRK</i>
	27	Kadam Pornima Mohan		
	29	Kalshetty Suraj Kalleshwar		
16	32	Kaustubh Vivekanand Unecha	Mrs. S.N. Pawar	<i>S.N.Pawar</i>
	33	Khadatare Sourav Vishnu		
	34	Khadse Subodh Subhash		
17	35	Kshirsagar Pranav Ajay	Mrs. M.P.Hajare	<i>M.P.Hajare</i>
	38	Makne Mangesh Madhav		
	39	Malave Rutvik Bhimrao		
18	40	Mane Adesh Ramdas	Dr. S.W.Shaikh	<i>S.W.Shaikh</i>
	41	Mane Sakshi Anil		
	42	Mashruwala Pratham Prashant		
19	43	Masule Chetan Gyanu	Mrs. K.P.Wagh	<i>K.P.Wagh</i>
	44	Mate Viraj Hemant		
	45	Metkar Yash Hemant		
20	46	More Mayur Rohidas	Mrs. A.S. Patil	<i>A.S.Patil</i>
	47	Mudavath Rasagnya Nayak		
	48	Mundphan Nikita Balwant		
21	49	Nartawar Siddhant Subhash	Mrs. J.R.Shinde	<i>J.R.Shinde</i>
	50	Navneet Acharya		
	51	Nigade Rutuja Dattatraya		
22	52	Nikam Shrikant Shamkant	Dr. S.W.Shaikh	<i>S.W.Shaikh</i>
	53	Pardeshi Atharva Umesh		
	54	Pardeshi Chandrakant Pralhad		
23	55	Pardeshi Kunal Digambar	Mrs. A.S. Patil	<i>A.S.Patil</i>
	57	Patel Prathmesh Vijay		
	63	Salunkhe Nikita Pravin		
24	64	Sardar Kunal Nitin	Dr. M.M. Sardeshmukh	<i>M.M.Sardeshmukh</i>
	65	Satyajit Shantaram More		
	66	Sawant Omkar Nandkumar		
25	69	Shelar Aditya Vinayak	Mrs. M.P.Hajare	<i>M.P.Hajare</i>
	74	Tapare Prathamesh Sudhir		
	72	Suraj Sanjay Waghmare		
26	70	Shimpi Rahul Abhay	Mrs. N.R.Kadam	<i>NRK</i>
	76	Waghmare Yogesh Sachin		

IKheA.B.
PBL Coordinator

M.M.Sardeshmukh
HOD
Dr. M.M. Sardeshmukh

JSPM Narhe Technical Campus, Narhe Pune-41
Department of Electronics & Telecommunication Engineering
SEM-II (A.Y. 2021-2022) Class: S.E. (E&TC)

Guide Allotment for PBL Group

Group No.	Roll No.	Student Name	Sign
1	1	Agnihotri Shruti Sanjay	<i>Shruti</i>
	24	Ingale Snehal Dhanaji	<i>Snehal</i>
	30	Kambale Sandhyarani Prakash	<i>S.P. Kambale</i>
2	67	Hanmante Sejal Hemant	<i>H...</i>
	28	Kadrame Rameshwai Siddharam	<i>Rsk</i>
	31	Sneha shrikant Karande	<i>S. Karande</i>
3	56	Patankar Shivam Jaysing	<i>Shivam</i>
	58	Patil Dhiraj Divakar	<i>D. Patil</i>
	59	Patil Himanshu Bhikanrao	<i>H. Patil</i>
4	15	Dhenge Mrunali Bhagwat	<i>M. Dhenge</i>
	62	Rokade Daya Bapurav	<i>Rokade D.B.</i>
	75	Udhane Samiksha Santosh	<i>Samiksha</i>
5	7	Bhandekar Sail Chandrakant	<i>S. Bhandekar</i>
	10	Bichkule Vishal Balasaheb	<i>V.B. Bichkule</i>
	43	Masule Chetan Gyanu	<i>C. Masule</i>
6	70	Shimpi Rahul Abhay	<i>R. Shimpi</i>
	76	Waghmare Yogesh Sachin	<i>Y. Waghmare</i>
	54	Pardeshi Chandrakant Pralhad	<i>C. Pardeshi</i>
7	5	Bhandare Rohan Bapurao	<i>R. Bhandare</i>
	12	Chavan Pranav Ravindranath	<i>P. Chavan</i>
	21	Gurav Aniket Ashok	<i>A. Gurav</i>
8	55	Pardeshi Chandrakant Pralhad	<i>C. Pardeshi</i>
	64	Sardar Kunal Nitin	<i>K. Sardar</i>
	27	Kadam Pornima Mohan	<i>P. Kadam</i>
9	11	Chaudhari Namrata Ajay	<i>N. Chaudhari</i>
	19	Gaurang Ravindra Joshi	<i>G. Joshi</i>
	20	Gavahane Abhishek Arun	<i>A.A. Gavhane</i>
10	2	Badgujar Mohit Bhimrao	<i>M. Badgujar</i>
	6	Bhandarkar Om Ravindra	<i>O. Bhandarkar</i>
	26	Jagannath Sakharam Suryawanshi	<i>J.S.</i>
11	17	Donajamath Pratik Prakash	<i>P. Donajamath</i>
	14	Deshmukh Nishant Prashant	<i>N. Deshmukh</i>
	63	Salunkhe Nikita Pravin	<i>N. Salunkhe</i>
12	41	Mane Sakshi Anil	<i>S. Mane</i>
	48	Mundphan Nikita Balwant	<i>N. Mundphan</i>
	51	Nigade Rutuja Dattatraya	<i>R. Nigade</i>

Group No.	Roll No.	Student Name	
13	29	Kalshetty Suraj Kalleshwar	<u>Suraj</u>
	44	Mate Viraj Hemant	<u>Viraj</u>
	69	Shelar Aditya Vinayak	<u>Aditya</u>
14	53	Pardeshi Atharva Umesh	<u>Atharva</u>
	32	Kaustubh Vivekanand Unecha	<u>Kaustubh</u>
	25	Jadhav Harshwardhan Dattatray	<u>Harshwardhan</u>
15	16	Dhome Prajakta Rajaram	<u>Prajakta</u>
	23	Honde Prachee Sudhir	<u>Prachee</u>
	47	Mudavath Rasagnya Nayak	<u>Rasagnya</u>
16	13	Choudhary Krushnal Bharat	<u>Krushnal</u>
	40	Mane Adesh Ramdas	<u>Adesh</u>
	33	Khadatare Sourav Vishnu	<u>Sourav</u>
17	66	Sawant Omkar Nandkumar	<u>Omkar</u>
	45	Metkar Yash Hemant	<u>Yash</u>
	49	Nartawar Siddhant Subhash	<u>Siddhant</u>
18	37	Lahane Akshay Kakasaheb	<u>Akshay</u>
	71	Shruti Shashikant Magar	<u>Shruti</u>
	77	Wategaonkar Swaroop Shirish	<u>Swaroop</u>
19	9	Bhosale Giriraj Anilkumar	<u>Giriraj</u>
	36	Kulkarni Aditya Sunil	<u>Aditya</u>
	68	Sharma Prathmeh Suraj	<u>Prathmeh</u>
20	73	Suryawanshi Abhijeet Dilip	<u>Abhijeet</u>
	61	Raut Radhika Sunil	<u>Radhika</u>
	13	Gadave Rohit Vijay	<u>Rohit</u>
21	8	Bhole Yoshita Gunwant	<u>Yoshita</u>
	22	Helge Neha Kailash	<u>Neha</u>
	60	Pawar Pratiksha Rohidas	<u>Pratiksha</u>
22	3	Batule Pawan Balasaheb	<u>Pawan</u>
	74	Tapare Prathamesh Sudhir	<u>Prathamesh</u>
	50	Navneet Acharya	<u>Navneet</u>
23	35	Kshirsagar Pranav Ajay	<u>Pranav</u>
	38	Makne Mangesh Madhav	<u>Mangesh</u>
	52	Nikam Shrikant Shamkant	<u>Shrikant</u>
24	46	More Mayur Rohidas	<u>Mayur</u>
	39	Malave Rutvik Bhimrao	<u>Rutvik</u>
	42	Mashruwala Pratham Prashant	<u>Pratham</u>
25	4	Bhalerao saurabh upendra	<u>Saurabh</u>
	57	Patel Prathmesh Vijay	<u>Prathmesh</u>
	34	Khadse Subodh Subhash	<u>Subodh</u>
26	65	Satyajit Shantaram More	<u>Satyajit</u>
	72	Suraj Sanjay Waghmare	<u>Sanjay</u>



Jayawant Shikshan Prasarak Mandal's
JSPM Narhe Technical Campus

S. No. 12/2/2 and 14/9, Narhe, Tal : Haveli, Dist.: Pune – 411041

Phone : +91 20 2460 8700, 701, 702 Email : director@jspmntc.edu.in Web : www.jspmntc.edu.in

Affiliated to Savitribai Phule Pune University. Approved by AICTE New Delhi and DTE Maharashtra.

DTE Code : 6755 PUN Code : CEGP019070 AISHE Code : C-45874



Date: 20-05-2022


NOTICE

PROJECT BASED LEARNING REVIEW PANEL

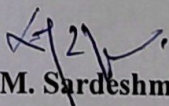
The following staff panel has been finalized for Project Based Learning Review which is scheduled on **26/05/2022** at **10.00 a.m.** sharp at following venue.

Date	Time	Group No.	Venue	Name of Staff
26/05/2022	10 a.m. onwards	1-13	C-305	Mrs. A.S. Patil, Mrs. S.N. Pawar, Mrs. N.R.Kadam, Dr. S.W. Shaikh.
		14-26	C-310	Mrs. M.P.Hajare, Mrs. J.R.Shinde, Mr. A.B. Ikhe, Dr. M.M. Sardeshmukh

Note: Guide must be present during presentation.


Mr. A.B. Ikhe

PBL Coordinator (E&TC)


Dr. M.M. Sardeshmukh

HOD (E&TC)

JSPM Narhe Technical Campus
Department of Electronics & Telecommunication Engineering

Class: S.E.

Subject: SS-CS Lab.

Roll No.	Name of Students	Roll No.	Name of Students
1	Agnihotri Shruti Sanjay	39	Malave Rutvik Bhimrao
2	Badgujar Mohit Bhimrao	40	Mane Adesh Ramdas
3	Batule Pawan Balasaheb	41	Mane Sakshi Anil
4	Bhalerao saurabh upendra	42	Mashruwala Pratham Prashant
5	Bhandare Rohan Bapurao	43	Masule Chetan Gyanu
6	Bhandarkar Om Ravindra	44	Mate Viraj Hemant
7	Bhandekar Sail Chandrakant	45	Metkar Yash Hemant
8	Bhole Yoshita Gunwant	46	More Mayur Rohidas
9	Bhosale Giriraj Anilkumar	47	Mudavath Rasagnya Nayak
10	Bichkule Vishal Balasaheb	48	Mundphan Nikita Balwant
11	Chaudhari Namrata Ajay	49	Nartawar Siddhant Subhash
12	Chavan Pranav Ravindranath	50	Navneet Acharya
13	Choudhary Krushnal Bharat	51	Nigade Rutuja Dattatraya
14	Deshmukh Nishant Prashant	52	Nikam Shrikant Shamkant
15	Dhenge Mrunali Bhagwat	53	Pardeshi Atharva Umesh
16	Dhome Prajakta Rajaram	54	Pardeshi Chandrakant Pralhad
17	Donajamath Pratik Prakash	55	Pardeshi Kunal Digambar
18	Gadave Rohit Vijay	56	Patankar Shivam Jaysing
19	Gaurang Ravindra Joshi	57	Patel Prathmesh Vijay
20	Gavahane Abhishek Arun	58	Patil Dhiraj Divakar
21	Gurav Aniket Ashok	59	Patil Himanshu Bhikanrao
22	Helge Neha Kailash	60	Pawar Pratiksha Rohidas
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24	Ingale Snehal Dhanaji	62	Rokade Daya Bapurav
25	Jadhav Harshwardhan Dattatray	63	Salunkhe Nikita Pravin
26	Jagannath Sakharam Suryawanshi	64	Sardar Kunal Nitin
27	Kadam Pornima Mohan	65	Satyajit Shantaram More
28	Kadrame Rameshwai Siddharam	66	Sawant Omkar Nandkumar
29	Kalshetty Suraj Kaleshwar	67	Hanmante Sejal Hemant
30	Kambale Sandhyarani Prakash	68	Sharma Prathmeh Suraj
31	Sneha shrikant Karande	69	Shelar Aditya Vinayak
32	Kaustubh Vivekanand Unecha	70	Shimpi Rahul Abhay
33	Khadatare Sourav Vishnu	71	Shruti Shashikant Magar
34	Khadse Subodh Subhash	72	Suraj Sanjay Waghmare
35	Kshirsagar Pranav Ajay	73	Suryawanshi Abhijeet Dilip
36	Kulkarni Aditya Sunil	74	Tapare Prathamesh Sudhir
37	Lahane Akshay Kakasaheb	75	Udhane Samiksha Santosh
38	Makne Mangesh Madhav	76	Waghmare Yogesh Sachin
		77	Wategaonkar Swaroop Shirish

Savitribai Phule Pune University
Board of Studies - Automobile and Mechanical Engineering
Undergraduate Program - Automobile Engineering & Mechanical Engineering (2019 pattern)

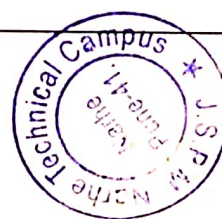
Course Code	Course Name	Teaching Scheme (Hours/Week)			Examination Scheme and Marks						Credit			
		TH	PR	TUT	ISE	ESE	TW	PR	OR	TOTAL	TH	PR	TUT	TOTAL
Semester-III														
202041	Solid Mechanics	4	2	-	30	70	-	50	-	150	4	1	-	5
202042	Solid Modeling and Drafting	3	2	-	30	70	-	50	-	150	3	1	-	4
202043	Engineering Thermodynamics	3	2	-	30	70	-	-	25	125	3	1	-	4
202044	Engineering Materials and Metallurgy	3	2	-	30	70	25	-	-	125	3	1	-	4
203156	Electrical and Electronics Engineering	3	2	-	30	70	25	-	-	125	3	1	-	4
202045	Geometric Dimensioning and Tolerancing Lab	-	2	-	-	-	25	-	-	25	-	1	-	1
202046	Audit Course - III	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	16	12	-	150	350	75	100	25	700	16	6	-	22
Semester-IV														
207002	Engineering Mathematics - III	3	-	1	30	70	25	-	-	125	3	-	1	4
202047	Kinematics of Machinery	3	2	-	30	70	-	-	25	125	3	1	-	4
202048	Applied Thermodynamics	3	2	-	30	70	-	-	25	125	3	1	-	4
202049	Fluid Mechanics	3	2	-	30	70	-	-	25	125	3	1	-	4
202050	Manufacturing Processes	3	-	-	30	70	-	-	-	100	3	-	-	3
202051	Machine Shop	-	2	-	-	-	50	-	-	50	-	1	-	1
202052	Project Based Learning - II	-	4	-	-	-	50	-	-	50	-	2	-	2
202053	Audit Course - IV	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	15	12	1	150	350	125	-	75	700	15	6	1	22

Abbreviations: TH: Theory, PR: Practical, TUT: Tutorial, ISE: In-Semester Exam, ESE: End-Semester Exam, TW: Term Work, OR: Oral

Note: Interested students of SE (Automobile Engineering and Mechanical Engineering) can opt for any one of the audit course from the list of audit courses prescribed by BoS (Automobile and Mechanical Engineering)

Instructions

- Practical/Tutorial must be conducted in three batches per division only.
- Minimum number of required Experiments/Assignments in PR/ Tutorial shall be carried out as mentioned in the syllabi of respective subjects.
- Assessment of tutorial work has to be carried out as a term-work examination. Term-work Examination at second year of engineering course shall be internal continuous assessment only.
- Project based learning (PBL) requires continuous mentoring by faculty throughout the semester for successful completion of the tasks selected by the students per batch. While assigning the teaching workload of 2 Hrs/week/batch needs to be considered for the faculty involved. The Batch needs to be divided into sub-groups of 5 to 6 students. Assignments / activities / models/ projects etc. under project based learning is carried throughout semester and Credit for PBL has to be awarded on the basis of internal continuous assessment and evaluation at the end of semester.
- Audit course is mandatory but non-credit course. Examination has to be conducted at the end of Semesters for award of grade at institute level. Grade awarded for audit course shall not be calculated for grade point & CGPA.



Savitribai Phule Pune University, Pune

Faculty of Commerce and Management

Master of Computer Application (MCA)

Programme Curriculum (2020-2022)

Preamble:

1. The name of the programme shall be Masters of Computer Application (M.C.A)
2. The revised MCA Curriculum 2020 builds on the implementation of the Choice Based Credit System (CBCS) and Grading System initiated in the AY 2015. The curriculum takes the MCA programme to the next level in terms of implementing Outcome Based Education along with the Choice Based Credit System (CBCS) and Grading System.
3. The Institutes should organize placement programme for M.C.A. students by interacting with Industries and software consultancy.
4. At the end of each semester, appearing for various certifications is possible for each student enabling them to make their resume rich.
5. With the rapidly changing scenario industry and academia should identify possible areas of collaboration and work together. Institute's placement cell should focus on identifying industrial expectations and institutional preparation for meeting industrial needs.

Introduction:

1. Definition: Outcome Based Education:

1.1 Outcome Based Education (OBE) Approach: Outcomes are about performance, and this implies:

- 1.1.1** There must be a performer – the student (learner), not only the teacher
- 1.1.2** There must be something performable (thus demonstrable or assessable) to perform
- 1.1.3** The focus is on the performance, not the activity or task to be performed

1.2 Programme Educational Objectives (PEOs): Programme educational objectives are broad statements that describe the career and professional accomplishments that the programme is preparing graduates to achieve. Programme Educational Objectives are a set of broad future focused learner's performance outcomes that explicitly identify what learners will be able to do with what they have learned, and what they will be like after they leave institution and are living full and productive lives. Thus, PEOs are what the programme is preparing graduates for in their career and professional life (to attain within a few years after graduation).

- 1.3 Programme Outcomes (POs):** Programme Outcomes are a set of narrow statements that describes what students (learners) of the programme are expected to know and be able to perform or attain by the time of graduation.
- 1.4 Course Outcomes (COs):** Course Outcomes are narrower statements that describe what students are expected to know and be able to do at the end of each course. These relate to the skills, knowledge, and behavior that students acquire in their matriculation through the course.
- 1.5 Learning Outcomes:** A learning outcome is what a student CAN DO because of a learning experience. It describes a specific task that he/she can perform at a given level of competence under a certain situation. The three broad types of learning outcomes are: a) Disciplinary knowledge and skills b) Generic skills c) Attitudes and values
- 1.6 Teaching and Learning Activities (TLAs):** The set of pedagogical tools and techniques or the teaching and learning activities that aim to help students to attain the intended learning outcomes and engage them in these learning activities through the teaching process.
- 1.7 Assessment and Evaluation:** Assessment is one or more processes, carried out by the institution, that identify, collect, and prepare data to evaluate the achievement of programme educational objectives and programme outcomes. Evaluation is one or more processes, done by the evaluation team, for interpreting the data and evidence accumulated through assessment practices. Evaluation
- 1.8** determines the extent to which programme educational objectives or programme outcomes are being achieved, and results in decisions and actions to improve the programme.

2. MCA Programme Focus:

The basic objective of the Master of Computer Application (MCA) is to provide a steady stream of necessary knowledge, skills and foundation for acquiring a wide range of rewarding careers into rapidly expanding world of Information Technology

2.1 Programme Educational Objectives: PEOs are defined by institution. Following are the guidelines for defining PEOs

- 2.1.1 PEOs should be assessable and realistic within the context of the committed resources.
- 2.1.2 The PEOs should be consistent with the mission of the institution.
- 2.1.3 All the stakeholders should participate in the process of framing PEOs.
- 2.1.4 The number of PEOs should be manageable.
- 2.1.5 It should be based on the needs of the stakeholders.
- 2.1.6 It should be achievable by the programme.
- 2.1.7 It should be specific to the programme and not too broad.
- 2.1.8 It should not be too narrow and similar to the POs.

2.2 MCA Programme Outcomes (POs): At the end of the MCA programme the learner will possess the following Program Outcome:

PO1: Apply knowledge of computing fundamentals, computing specialization, mathematics, and domain knowledge appropriate for the computing specialization to the abstraction and conceptualization of computing models from defined problems and requirements.

PO2: Identify, formulate, research literature, and solve *complex* Computing problems reaching substantiated conclusions using fundamental principles of Mathematics, Computing sciences, and relevant domain disciplines.

PO3: Design and evaluate solutions for complex computing problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

PO4: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.

PO5: Create, select, adapt and apply appropriate techniques, resources, and modern computing tools to complex computing activities, with an understanding of the limitations.

PO6: Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practice.

PO7: Recognize the need, and have the ability, to engage in independent learning for continual development as a Computing professional.

PO8: Demonstrate knowledge and understanding of computing and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO9: Communicate effectively with the computing community, and with society at large, about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.

PO10: Understand and assess societal, environmental, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practice.

PO11: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary environments.

PO12: Identify a timely opportunity and using innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large.

3. Admission Details:

3.1 Eligibility for Admission: The eligibility criteria for admission for the MCA course will be as decided by the All Indian Council of Technical Education (AICTE), New Delhi and Directorate of Technical Education (DTE), Government of Maharashtra. It will published on their respective websites time to time.

3.2 Reservation of Seat: The percentage of seat reserved for candidates belonging to backward classes only from Maharashtra State in all the Government Aided, Un-aided Institutions/Colleges and University Departments is as per the norms given by Government of Maharashtra, time to time.

3.3 Selection Basis: The selection would be done as per the guidelines given by the Director of Technical Education, Maharashtra State, time to time.

4. Lecture-Practical/Project-Tutorial (L-P-T)

A course shall have either or all the three components, i.e. a course may have only lecture component, or only practical/project component or a combination of any two/three components

4.1 Lecture(L): Classroom sessions delivered by faculty in an interactive mode. It should be conducted as per the scheme of lectures indicated in respective course.

4.2 Practical/Project(P): Practical / Project Work consisting of Hands-on experience /Field Studies / Case studies that equip students to acquire the much required skill component. Besides separate Practical/Project course, three course in each semester include few practical assignment and it will be evaluated under internal evaluation

4.3 Tutorial(T): Session consisting of participatory discussion/ self-study/ desk work/ brief seminar presentations by students and such other novel methods that make a student to absorb and assimilate more effectively the contents delivered in the Lecture sessions

4.4 A Mini project is an assignment that the student needs to complete at the end of every semester in order to strengthen the understanding of fundamentals through effective application of the courses learnt. The details guidelines have been given in the course structure.

4.5 The Project Work to be conducted in the FINAL Semester and evaluated at the end of the semester. The detail guidelines have been in the respective course structure.

4.6 The teaching / learning as well as evaluation are to be interpreted in a broader perspective as follows:

- i) Teaching – Learning Processes: Classroom sessions, Group Exercises, Seminars, Small Group Projects, Self-study, etc.
- ii) Evaluation: Tutorials, Class Tests, Presentations, Field work, Assignments, competency-based Activity, Research papers, Term papers, etc.

The MCA programme is a combination of:

- a. Three-Credit Courses (75 Marks each): 3 Credits each
- b. Two-Credit Courses (50 Marks each): 2 Credits each
- c. One-Credit Courses (25 Marks each) : 1 Credits each

Following are the session details per credit for each of L-P-T model

- 1) Every ONE-hour session per week of L amounts to 1 credit per semester,
- 2) Minimum of TWO hours per week of P amounts to 1 credit per semester,
- 3) Minimum of ONE hours per week of T amounts to 1 credit per semester

5. Open Courses (OC):

Institute has to offer two open courses of 1 credit each per semester to the students from Semester I to Semester III. The motive behind keeping an open course is to make students aware of current/upcoming trends in Information Technology and other domains. Full autonomy is given to the Institute to plan and execute the open courses. It is expected to extend the autonomy to the student also. Care must be taken to consider credit points and necessary contact hours assigned to it while finalizing any open course for the given semester. In each semester total 2 credits are reserved for open courses.

Suggestive List of OPEN Courses

FOR SEMESTER I		FOR SEMESTER II		FOR SEMESTER III	
1	Data Privacy and Protection	1	Software Agent	1	Speech Recognition
2	Linux system administration	2	Aptitude building -1	2	Sentiment Analysis
3	social media listening	3	Basics of Tableau	3	R Programming
4	Research Methodology	4	Fraud detection	4	Gesture recognition
5	Applied Statistical Methods	5	Ruby Basics	5	Aptitude building-2
6	Digital Marketing	6	LaTeX	6	Digital Image processing
7	G-Suite	7	Big data Analytics	7	Network Security
8	Joomla	8	Game Programming in Unity	8	big data Technologies
9	e-trading	9	Block Chain Technology	9	AWS Fundamentals
10	Scratch and MIT App Inventor Programming	10	Business Intelligence - be specific	10	Edge Computing
11	Random Forest using MS Excel	11	Design Thinking & Problem-solving skills		
12	WordPress	12	Green Computing		
13	MS-OFFICE	13	IoT		
14	Code ignitor				

6. Extra Reading and Certification:

Each Chapter in the course is added with the extra reading part which gives extra pointer to gain In-depth knowledge apart from basic knowledge imparted in the syllabus. Learners should be encouraged to complete this extra reading portion as regular practice. Also, each course(Where ever applicable) includes suggested certification which help learners to enrich themselves as per industry demands and requirements.

7. Evaluation and Assessment:

In total 112 credits represent the workload of a year for MCA program.

Semester	Credit	IE	UE
Semester I	28	350	350
Semester II	28	350	350
Semester III	28	350	350
Semester IV	28	350	350
Total	112	1400	1400
			2800

The final total assessment of the candidate is made in terms of an internal (concurrent) evaluation and an external (university) examination for each course. In total the internal (concurrent) to external (university) marks ratio is maintained 50:50.

In general

- 1) For each course, 25 will be based on evaluation and 50 marks for semester end examination conducted by University, unless otherwise stated.
- 2) The internal evaluation of 25 marks further divided into Written Examination (Assignments/Unit test/written examination etc.), Practicals and Tutorials. The details have been specified in each course.
- 3) There will be one Practical course and one Mini Project course in each semester with 75 marks allotted for internal evaluation and 50 marks allotted for University examination. External assessment will be done by university appointed examiner. During external examination, examiner should ask the programs/practical ONLY from the work book of the students.
- 4) The internal marks will be communicated to the University at the end of each semester, but before the semester-end examinations. These marks will be considered for the declaration of the results.

Examination: Examinations shall be conducted at the end of the semester i.e. during November and in April/May. However supplementary examinations will also be held in November and April/May.

Concurrent Evaluation: A continuous assessment system in semester system (also known as internal assessment/comprehensive assessment) is spread through the duration of course and is done by the teacher teaching the course. The continuous assessment provides a feedback on teaching learning process. The feedback after being analyzed is passed on to the concerned student for implementation and subsequent improvement. As a part of concurrent evaluation, the learners shall be evaluated on a continuous basis by the Institute to ensure that student learning takes place in a graded manner. Concurrent evaluation components should be designed in such a way that the faculty can monitor the student learning & development and intervene wherever required. The faculty must share the outcome of each concurrent evaluation component with the students, soon after the evaluation, and guide the students for betterment Individual faculty member shall have the flexibility to design the concurrent evaluation components in a manner so as to give a balanced assessment of student capabilities across Knowledge, Skills & Attitude (KSA) dimensions based on variety of assessment tools.

Suggested components for Concurrent Evaluation (CE) are:

1. Case Study / Situation Analysis – (Group Activity or Individual Activity)
2. Class Test
3. Open Book Test
4. Field Visit / Study tour and report of the same
5. Small Group Project & Internal Viva-Voce
6. Learning Diary
7. Scrap Book
8. Group Discussion
9. Role Play / Story Telling
10. Individual Term Paper / Thematic Presentation
11. Written Home Assignment
12. Industry Analysis – (Group Activity or Individual Activity)
13. Literature Review / Book Review
14. Model Development / Simulation Exercises – (Group Activity or Individual Activity)
15. In-depth Viva
16. Quiz

Institute can decide the type, method and frequency of Concurrent Evaluation for each course and execute accordingly. Detailed record of the Concurrent Evaluation shall be maintained by the Institute. The same shall be made available to the University, on demand.

8. Choice based Credit System (CBCS) and Grading:

The detail document about Choice based Credit System for PG Programme is available on university website. The Grading methodology is also available on university website. University reserves rights to revise CBCS and grading system time to time.

9. Medium of Instruction:

The medium of Instruction will be English.

10. Clarification of Syllabus:

It may be necessary to clarify certain points regarding the course. The BOS should meet to study and clarify any difficulties from the Institutes, as and when required.

11. Revision of Syllabus:

As the computer technology is changing very fast, revision of the syllabus should be considered every 2 years.

12. Attendance:

The student must meet the requirement of 75% attendance per semester per course for grant of the term. The Director shall have the right to withhold the student from appearing for examination of a specific course if the above requirement is not fulfilled. Since the emphasis is on continuous learning and concurrent evaluation, it is expected that the students study all-round the semester. Therefore, there shall not be any preparatory leave before the University examinations.

13. ATKT Rules:

The ATKT rules mention in CBCS handbook (available on university website) is application to MCA Programme.

14. Maximum Duration for completion of the Programme:

The candidates shall complete the MCA Programme WITHIN 5 YEARS from the date of admission, by earning the requisite credits. The student will be finally declared as failed if she/he does not pass in all credits within a total period of four years. After that, such students will have to seek fresh admission as per the admission rules prevailing at that time.

15. Structure of the Programme and detail syllabus of each course:

Semester I					
Sr. No.	Course Title	Course Code	CP	EXT	INT
1	Java Programming	IT11	3	50	25
2	Data Structure and Algorithms	IT12	3	50	25
3	Object Oriented Software Engineering	IT13	3	50	25
4	Operating System Concepts	IT14	3	50	25
5	Network Technologies	IT15	3	50	25
6	Open Course 1	OC11	1		25
7	Open Course 2	OC12	1		25
* Practicals					
8	Practical	IT11L	5	50	75
9	Mini Project	ITC11	5	50	75
Soft Skills					
10	Soft Skills - I	SS11	1		25
			28	350	350

Semester II					
Sr. No.	Course Title	Course Code	CP	EXT	INT
1	Python Programming	IT21	3	50	25
2	Software Project Management	IT22	3	50	25
3	Optimization Techniques	MT21	3	50	25
4	Advanced Internet Technologies	IT23	3	50	25
5	Advanced DBMS	IT24	3	50	25
6	Open Course 3	OC21	1		25
7	Open Course 4	OC22	1		25
* Practicals					
8	Practical	IT21L	5	50	75
9	Mini Project	ITC21	5	50	75
Soft Skills					
10	Soft Skills - II	SS21	1		25
			28	350	350