

Walchand College of Engineering, Sangli
(Government Aided Autonomous Institute)

AY 2024-25

Course Information

Programme	M. Tech (Computer Science and Information Technology)
Class, Semester	Second Year M. Tech., Sem III
Course Code	7IT691
Course Name	Dissertation Phase I
Desired Requisites:	

Teaching Scheme		Examination Scheme (Marks)			
Lecture	-	LA1	LA2	Lab ESE	Total
Tutorial	-	30	30	40	100
Practical	24 Hrs/Week				
Interaction	-	Credits: 12			

Course Objectives

1	To instruct factual knowledge, recent methods and trends for dissertation
2	To compare the rigorous literature in research domain
3	To select the publication platform form to communicate the research

Course Outcomes (CO) with Bloom's Taxonomy Level

CO	At the end of the course, the students will be able to,	Blooms Taxonomy	
		Descriptor	Level
CO1	Apply theoretical frameworks to the appropriate area of research	Apply	II
CO2	Construct mathematical model for the dissertation	Apply	II
CO3	Analyze mathematical model using modern tools	Analyze	III
CO4	Provide solution and synthesize research gap for engineering problem	Evaluate	V

Lab Activities

Following activities are to be carried out in dissertation:

- Literature Survey: Detailed summarized literature survey from valid sources and gap Analysis. Research Objectives: Deeply and precisely stated objectives, novel methodologies to address the dissertation work.
- Significance and scope: Comprehensive topic with full of exploration at each level, importance, challenges and expected outcomes
- Synopsis: Technical write up and requirement analysis to achieve defined objectives and its implementation
- Publications: Review/survey paper in standard publications.
- Report writing: Proper citation of sources, organized section of chapters, standard and valid references, nearly absolute contents
- The work should be completed in all aspects of design, implementation and testing and follow software engineering practices
- Dissertation reports should be prepared and submitted in soft and hard form along with the code and other dependency documents. Preferable use online code repositories (github/bitbucket)

The students are required to submit the dissertation work in the form of report as per the institute rule.

Dissertation report (pre-defined template) should be prepared using Latex/Word and submitted along with soft copy on CD/DVD (with code, PPT, PDF, Text report document & reference material) or on an online repository.

Text Books

1	Dr. Hemant Kumar Mishra "A Book on Dissertation Writing" Walnut Publication , July 2023
2	Rajendra Kumbhar , "How to Write Project Reports, Ph. D. Thesis and Research Articles", Universal Prakashan, 2015
3	Marilyn Deegan, "Academic Book of the Future Project Report", A Report to the AHRC & the British Library, 2017

References	
1	Research journals from IEEE, ACM, Elsevier, Springer, Science Direct etc.
Useful Links	
1	https://ieeexplore.ieee.org/Xplore/home.jsp
2	https://www.sciencedirect.com
3	https://onlinecourses.nptel.ac.in/noc19_ge21/preview
4	https://www.researchgate.net

CO-PO Mapping						
Programme Outcomes (PO)						
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3		2			
CO2	2	2		1		
CO3	1		2		1	2
CO4	1		2	2		

Assessment				
There are three components of lab assessment, LA1, LA2 and Lab ESE. IMP: Lab ESE is a separate head of passing. LA1, LA2 together is treated as In-Semester Evaluation.				
Assessment	Based on	Conducted by	Typical Schedule	Marks
LA1	Lab activities, attendance, journal	Lab Course Faculty	During Week 1 to Week 4 Marks Submission at the end of Week 5	30
LA2	Lab activities, attendance, journal	Lab Course Faculty	During Week 5 to Week 10 Marks Submission at the end of Week 10	30
Lab ESE	Lab activities, attendance, journal	Lab Course Faculty	During Week 10 to Week 13 Marks Submission at the end of Week 13	40
Week 1 indicates starting week of a semester. The typical schedule of lab assessments is shown, considering a 13-week semester. The actual schedule shall be as per academic calendar. Lab activities/Lab performance shall include performing experiments, mini-project, presentations, drawings, programming and other suitable activities, as per the nature and requirement of the lab course.				

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Course Information

Programme	M. Tech. (Computer Science and Information Technology)
Class, Semester	Second Year M. Tech., Semester III
Course Code	
Course Name	Online/NPTEL/Swayam Course
Desired Requisites:	--

Note:

NPTEL courses syllabus is available online with respective course link. The course links are shared in Structure as follows:

Sr. No.	Course Code	Name of NPTEL courses	Link	Institute
1	7IT611	Data Science for Engineers, Prof. Shanka, Rengasamy	https://nptel.ac.in/courses/106106179	IIT Madras
2	7IT612	Deep Learning-Prof. S. Iyengar, Sukrit Gupta	https://nptel.ac.in/courses/106106184	IIT Ropar, IIT Madras
3	7IT613	Introduction to Machine Learning, Dr. B. Ravindran	https://nptel.ac.in/courses/106106139	IIT Madras
5	7IT 614	Cloud Computing- Prof. Soumya Kanti Ghosh	https://nptel.ac.in/courses/106105167	IIT Kharagpur

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Course Information

Programme	M. Tech. (Computer Science and Information Technology)
Class, Semester	Second Year M. Tech., Sem IV
Course Code	7IT692
Course Name	Dissertation Phase II
Desired Requisites:	Dissertation Phase I

Teaching Scheme		Examination Scheme (Marks)			
Lecture	-	LA1	LA2	Lab ESE	Total
Tutorial	-	30	30	40	100
Practical	34 Hrs/Week				
Interaction	-	Credits: 17			

Course Objectives

1	To instruct the issues of research design, methodology and ethics
2	To elaborate the process research with reference to existing systems
3	To test the objectives of research with standard benchmark

Course Outcomes (CO) with Bloom's Taxonomy Level

CO	Description	Blooms Taxonomy	
		Descriptor	Level
CO1	Demonstrate proposed solution for a dissertation	Apply	III
CO2	Test and validate designed system towards fault tolerance	Evaluate	V
CO3	Produce research findings in terms of technical publications and IPRs	Create	VI
CO4	Publish and present research work in reputed journals or conferences	Create	VI

Lab Activities

Following activities are to be carried out in dissertation:

1. Objective Achieved: 100 % of stated objective in synopsis, test cases to be use.
2. Design and Methodology: Standard design for implementation of dissertation, inline methodologies to achieve objectives
3. Analysis: Review of methodology, debugging the codes, identifications of standard benchmarks for test comparisons
4. Publications: at least 2 publications in standard/indexed publication.
5. Report writing: Proper citation of sources, organized section of chapters, standard and valid references, nearly absolute contents
6. The work should be completed in all aspects of design, implementation and testing Dissertation reports should be prepared and submitted in soft and hard form along with the code and other dependency documents. Preferable use online code repositories (GitHub/bitbucket)

It is expected that the student has completed most of the experimental/computation works and analyzed the results so obtained as proposed in the synopsis. The work should be completed in all respects in this semester.

The students are required to submit the dissertation work in the form of report as per the institute rule.

Dissertation report (pre-defined template) should be prepared using Latex/Word and submitted along with soft copy on CD/DVD (with code, PPT, PDF, Text report document & reference material) or on an online repository.

Text Books

1	Dr. Hemant Kumar Mishra "A Book on Dissertation Writing" Walnut Publication , July 2023
2	Rajendra Kumbhar , "How to Write Project Reports, Ph. D. Thesis and Research Articles", Universal Prakashan, 2015
3	Marilyn Deegan, "Academic Book of the Future Project Report", A Report to the AHRC & the British Library, 2017

References	
1	Research journals from IEEE, ACM, Elsevier, Springer, Science Direct etc
Useful Links	
1	https://ieeexplore.ieee.org/Xplore/home.jsp
2	https://www.sciencedirect.com
3	https://www.researchgate.net
4	https://onlinecourses.nptel.ac.in/noc19_ge21/preview

CO-PO Mapping						
Programme Outcomes (PO)						
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	2	3		2		1
CO2	2		1			1
CO3	1			1		
CO4		3	2	3	2	

Assessment				
There are three components of lab assessment, LA1, LA2 and Lab ESE. IMP: Lab ESE is a separate head of passing. LA1, LA2 together is treated as In-Semester Evaluation.				
Assessment	Based on	Conducted by	Typical Schedule	Marks
LA1	Lab activities, attendance, journal	Lab Course Faculty	During Week 1 to Week 4 Marks Submission at the end of Week 5	30
LA2	Lab activities, attendance, journal	Lab Course Faculty	During Week 5 to Week 10 Marks Submission at the end of Week 10	30
Lab ESE	Lab activities, attendance, journal	Lab Course Faculty	During Week 11 to Week 13 Marks Submission at the end of Week 13	40
Week 1 indicates starting week of a semester. The typical schedule of lab assessments is shown, considering a 13-week semester. The actual schedule shall be as per academic calendar. Lab activities/Lab performance shall include performing experiments, mini-project, presentations, drawings, programming and other suitable activities, as per the nature and requirement of the lab course.				

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Course Information

Programme	M. Tech. (Computer Science and Information Technology)
Class, Semester	Second Year M. Tech., Semester IV
Course Code	7IT645
Course Name	Internship
Desired Requisites:	

Teaching Scheme

Examination Scheme (Marks)

Lecture	-	LA1	LA2	ESE	Total
Tutorial	-	-	-	100	100
Practical	4 Hrs./Week	Credits: 2			

Course Objectives

- 1 To expose the students to real life engineering problems encountered in industry/society.
- 2 To provide an opportunity to work in collaborative and multidisciplinary environment.

Course Outcomes (CO) with Bloom's Taxonomy Level

CO	At the end of the course, the students will be able to,	Blooms Taxonomy	
		Descriptor	Level
CO1	Perceive knowledge of group dynamics and contribute to multidisciplinary work in industry.	Understand	II
CO2	Apply acquired knowledge to solve problems and handle efficient management of projects independently /or in teams.	Apply	III
CO3	Communicate effectively with industry/society for engineering activities and comprehend and write effective reports.	Create	VI
CO4	Establish ethical behavior with professional code of conduct and contribute to sustainable development of society.	Apply	III

Contents

The objective of this training is to expose the students to industry environment and practices. Students are sent to leading Engineering organizations/Research laboratories/Design and Consultancy organizations to undergo a rigorous training for a minimum period of one month during summer term/vacation.

CO-PO Mapping

	Programme Outcomes (PO)					
	1	2	3	4	5	6
CO1		3				
CO2	2	2	1	2	1	1
CO3				3	2	
CO4					3	1

Assessment

- The assessment is based on ESE. The panel of minimum two members from the department shall assess the student for the internship.
- The students are expected to present the work done in internship tenure.
- The students should submit a detailed report based on activities done in an internship and learning's through the same.
- The students should submit the duly signed internship certificate from the organization/s where internship was done, clearly indicating the period of internship in the certificate.

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Course Information					
Programme	M. Tech. (Computer Science and Information Technology)				
Class, Semester	Second Year M. Tech., Semester IV				
Course Code	7IT646				
Course Name	Techno-socio activity				
Desired Requisites:	--				
Teaching Scheme		Examination Scheme (Marks)			
Lecture	-	LA1	LA2	ESE	Total
Tutorial	-	-	-	100	100
Practical	2 Hrs./Week				
Interaction	-	Credits: 1			
Course Objectives					
1	Develop skills like leadership, teamwork, ethics and communication through technical contribution on socio-economic issues				
2	Enhance understanding of the socio-economic impact of engineering projects and technology on society.				
3	Apply engineering knowledge and problem-solving skills to address real-world challenges				
Course Outcomes (CO)					
At the end of the course, the students will be able to,					
CO	Description	Blooms Taxonomy			
		Descriptor	Level		
CO1	Acquire professional culture/ethics and build proficiency in leadership, professional communication, teamwork, and decision making.	Apply	II III		
CO2	Apply the technical knowledge through participation in various techno-socio assignments.	Apply	III		
CO3	Demonstrate ethical quality and social responsibilities through the technical or social knowledge gained.	Evaluate	V		
CO4	Participate in Techno –socio activities.	Evaluate	V		
List of Activities					
List of Activities:					
1. Involvement in techno-socio activity					
a) Presentation on involvement in techno-socio activity individually/through student clubs during F.Y. & S.Y. M. Tech.					
b) Submission of summary report on these activities.					
2. Techno-socio activity (Team Activity)					
a) Organization of a technical activity/event for the benefit of society in a batch.					
b) Submission of report on the organized activity.					
3. Submission of certificates/documents required for student port-folio (Participation in Curricular and Extra-Curricular Activities within and outside the campus).					
References					
1	National Institute for Engineering Ethics (NIEE)				
2	Professional ethics, National Society of Professional Engineers (NSPE).				
Useful Links					
1	https://www.asce.org/pdf/ethics_manual.pdf				
2	https://www.aicte-india.org/atal				
3	https://onlinecourses.nptel.ac.in/noc19_ge21/preview				

CO-PO Mapping						
	Programme Outcomes (PO)					
	1	2	3	4	5	6
CO1		1		3	3	
CO2		2		3	1	1
CO3				3	3	
CO4				3	3	1

Assessment
<p>The assessment is based on ESE. The panel of minimum two members from the department shall assess the student for the techno-socio activity.</p> <p>The students are expected to present the work done in an four semesters.</p> <p>The students shall also submit a detailed report based on activities done and learning's through the same.</p> <p>The students shall also submit the duly signed certificate from the organization/s, local bodies where activities were carried out.</p>