



Shree Warana Vibhag Shikshan Mandal's

TATYASAHEB KORE INSTITUTE OF ENGINEERING AND TECHNOLOGY
WARANANAGAR, PANCHALA, KOLHAPUR. 416113



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Domain Specific Mini Project Handbook

Computer Science and Engineering Department



THIRD YEAR

Academic Year

2018-19



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**TATYASAHEB KORE INSTITUTE OF ENGINEERING AND
TECHNOLOGY, WARANANAGAR 416113**

Computer Science and Engineering Department

**HANDBOOK
OF
DOMAIN SPECIFIC MINI PROJECT (DSMP)**
Revision: tkiet/cse/te/dsmp/2
[Revised Structure. W.E.F. 2015-2016]

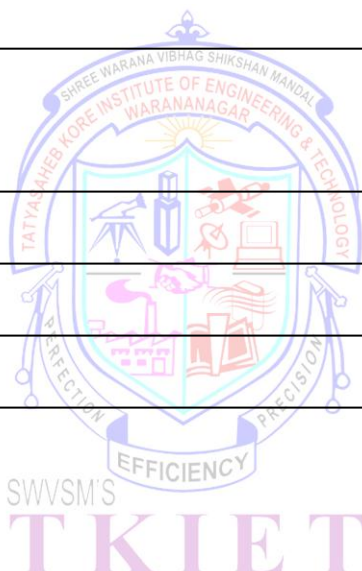
Class		T.E [Computer Science & Engg.]
Subject Code		69051
Examination Scheme		
	Practical	2 Hours/Week
	Term Work	25 Marks
	Oral	50 Marks
	Total	75 Marks

Prepared and Compiled
-- By --
Prof. N. J. Ghatge
Faculty In-charge

Suggestions from Head of Department:

Enhancement if any:

Comments:



DSMP Coordinator
(Prof. N. J. Ghatge)

HOD
(Prof. A. G. Patil)

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WARANANAGAR

Domain Specific Mini Project (DSMP)

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1. The Importance of Domain Specific Mini Project

Third year domain specific mini project is one of the most important aspects of your engineering degree. To see why, let's look at a definition of engineering, taken from the IEEE.

“Engineering is that profession in which knowledge of the mathematical, computational, and natural sciences gained by study, experience, and practice is applied with judgment to develop economically effective use of matter, energy, and information to the benefit of humankind”.

Engineering is first and foremost the application of knowledge. However, the application must be carried out with judgment, to ensure that the resultant system is effective and efficient, and that it is of benefit.

There is another reason why your Domain Specific mini project is so important: The DSMP is one of the primary mechanisms utilized by the University to provide you with an opportunity to gain experience in the practical, effective, efficient, and beneficial application of your final year project. In this way, you will proceed with this work to last year, but the DSM project will be your first exposure of final year project.

Finally, your Domain Specific mini project counts for 30% of your last year works.

2. Objective of Domain Specific Mini Project

- To expose the students to use engineering approach to solve domain specific real time problem.
- To use the appropriate and newer technologies while developing the project.
- To learn the skills of team building and team work
- To learn to handle a large technical project
- An ability to design a system, component, or process to meet desired needs.
- To learn good project management skills.
- To develop abilities to use innovative computing algorithms for problem solving



3. University Syllabus

The students should form group of 5 students each and every group is supposed to **choose a specific domain in which they would like to carry on their Sem-VII and VIII project work.** Further the group should identify the relevant problem and propose the solution, which can be implemented as a mini-project using suitable technology. The domain specific mini-project work should be evaluated by a team of teachers appointed by the department. The evaluation should be done in the mid and end of the semester during which the group should give presentation and demonstration of their work done. **Care should be taken to avoid outsourcing of the work.**

The term-work assessment is to be done as follows.

1. Mid-term assessment
2. End-term assessment
3. Final performance evaluation to be done by guide



4. Academic Calendar for DSMP

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Tatyasaheb Kore Institute of Engineering and Technology, Warananagar
Department of Computer Science and Engineering
T.E. Division (Academic Year: 2018-19)
Domain Specific Mini Project (DSMP)

DSMP TIMELINE 2018-19

Sr.No.	Project Schedule	Starts	Ends	Total
1	Domain Knowledge(5%)	10/12/2018	22/12/2018	12
2	Problem Definition & Scope (5%)	24/12/2018	29/12/2018	6
3	Requirement Gathering (5%)	31/12/2018	05/01/2019	6
4	System Architecture (5%)	07/01/2019	12/01/2019	6
5	Synopsis Report Submission (5%)	12/01/2019	12/01/2019	1
6	Synopsis Presentation (5%)	14/01/2019	19/01/2019	5
7	Design Methodology (20%)	21/01/2019	26/01/2019	6
8	Module Implementation (5%)	28/01/2019	09/02/2019	12
9	DSMP Presentation I (10%)	11/02/2019	16/02/2019	6
10	Module Implementation (15%)	18/02/2019	16/03/2019	24
11	Test Specification (5%)	18/03/2019	19/03/2019	2
12	Project Report (10%)	20/03/2019	23/03/2019	6
13	Final Presentation (10%)	25/03/2019	31/03/2019	6
				98

5. Guidelines for Students

You (students) need to spend a lot of time working on your project, it is essential that you choose a project which you like and which you are capable of doing. Note that these are not necessarily the same things: just because you like a particular project doesn't mean you are qualified to do it. You may not have taken all of the requisite courses or it may be a more theoretically-aligned project here as you might be a more practically-oriented engineering student (or vice versa). Think long and hard before making your final choice. At the very least, you should take the following steps in assessing and choosing an appropriate topic.

1. Find out useful knowledge about the Domain

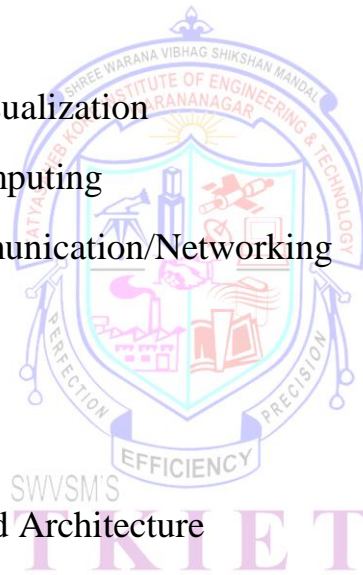
What is domain?

- Domains are used to categorize and classify the project under certain technology. It helps one to identify their interest
- Domains also help to quick search the type and kind of project. Domain helps to streamline the students who don't have any knowledge by arranging the application in a proper hierarchy.
- There is always misconception among student about the domain and technologies and they often tend to confuse one with another.
- The technologies are verticals i.e., columns and the domains are the horizontals i.e., rows. So, the domains (rows) are common for different technologies (columns) and the data in the combination of rows and columns (cells) varies accordingly.

- So the domain name like cloud computing data mining are common to technologies like java, dotnet but their content changes according to the technologies

Following are the domains **but not limited to**

1. Soft computing and artificial intelligence
2. Data mining and information retrieval
3. Operating system and compilers
4. Image processing/Video processing /Signal processing
5. Nano Technology
6. Computer graphics and visualization
7. Networking and cloud computing
8. Mobile and wireless communication/Networking
9. Parallel Computing
10. Cyber security
11. Video/virtual reality
12. Software Engineering and Architecture
13. Distributed computing
14. Web Mining
15. Computation and data security
16. Information security
17. Intrusion detection system
18. Grid computing
19. Internet of Things (IoT)
20. Others



2. How to find relevant knowledge/Contents about project?

Third year students have to find updated information about their project topic. Such information is contained in conferences and journal papers. Conferences are short publications of 4 to 8 pages. Journals are long publications describing more mature and in depth results. Useful bird eye views can be obtained through resources on the web such as Wikipedia. Get familiar with the how to use the resources below:

1. Web Resources

1. Google Scholar

<https://scholar.google.com/>

Google Scholar provides a simple way to broadly search for scholarly literature. From one place, you can search across many disciplines and sources: articles, theses, books, abstracts and court opinions, from academic publishers, professional societies, online repositories, universities and other web sites. Google Scholar helps you find relevant work across the world of scholarly research.

2. IEEE Xplore

<http://ieeexplore.ieee.org/Xplore/dynhome.jsp>

It collects all documents sponsored by IEEE, including both journals and conferences. The PDF of all such documents are available, provided that you are accessing the database within the University.

3. Elsevier

<http://www.elsevier.co.in/web/default.aspx>

Elsevier provides web-based, digital solutions — among them ScienceDirect, Scopus, Elsevier Research Intelligence and ClinicalKey — and publishes over 2,500 journals, including The Lancet and Cell, and more than 33,000 book titles, including a number of iconic reference works.

4. Scopus

<http://www.scopus.com/home.url>

It lists both journal and conference articles. A very useful feature is the links to papers that have cited the work. One can find very up to date this information this way.

5. Web of Knowledge

<http://portal.isiknowledge.com/portal.cgi/wos?Init=Yes&SID=4DN17gpkfjpDJMgDf4e>

It lists journal and conference articles. A useful feature is the links to papers that have cited the work.

6. Science Direct

<http://www.sciencedirect.com/>

This is another useful database that collects journal articles.

7. Wikipedia:

http://en.wikipedia.org/wiki/Main_Page

Wikipedia is a free online dictionary that is extremely useful for getting an overview of a technique:

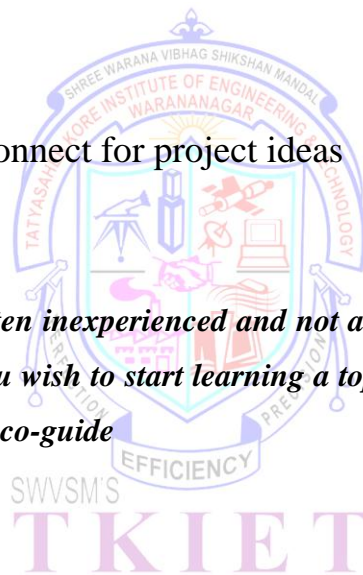
2. Technical magazines available in TKIET library

1. Digit
2. PC World
3. PC Quest
4. Developers IQ
5. Open Source

Also visit Infosys Campus Connect for project ideas

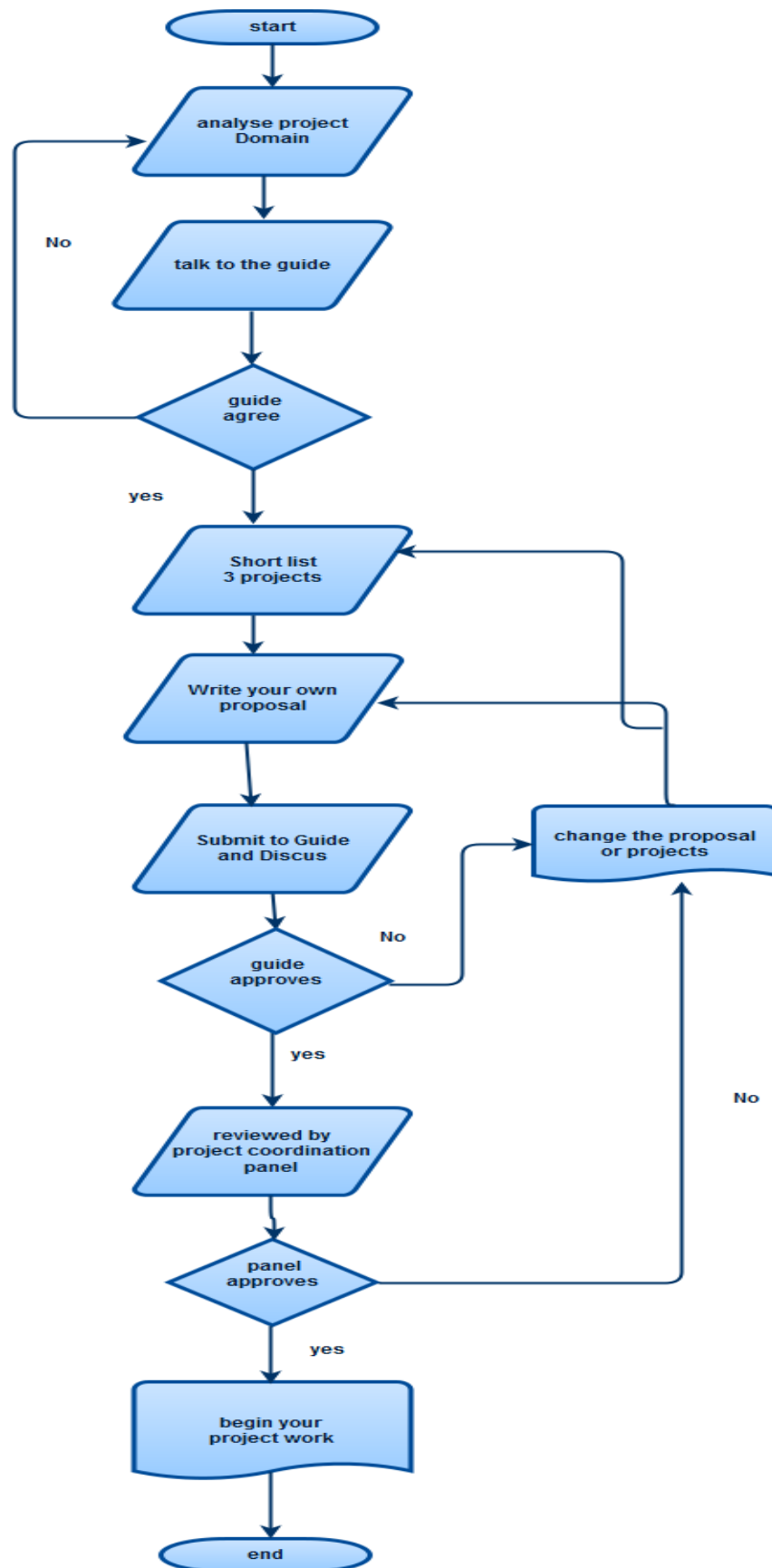
Note: Third year students are often inexperienced and not able to find the most useful papers from the above. In general, if you wish to start learning a topic and domain, do visit an above links and consult with guide and co-guide

.



3. Choosing Your Project

1. Find out what are your options.
2. Make a short-list of three projects.
3. Think about proposing your own project. Using the descriptions you have read as a guideline, write your own proposal. Note, however, that the feasibility and suitability of your proposal will have to be assessed before it can be added to your list
4. Go and talk to the guide (i.e. the member of staff who nominated by the department).
5. Go away and write down what you think the project is about.
6. Submit a ranked project selection form to your guide by the end of Week.
7. Your selections will now be reviewed by the project coordination panel.
8. A list of allocated projects will be published in next week.
9. Now you can begin your project in earnest ... you should begin by making a preliminary plan (see next points).



4. Problem Identification

Problem Identification involves a lot of background work in the general area of the problem. Normally it calls for the use of prior experience, typically experience you may not yet have. It requires an ability to look at a domain and to identify the issue that needs to be addressed and the problem to be solved. It also required an understanding of the theoretical issues by which we can model the problem. So, the first thing you need to do in your project is become an expert in the problem at hand: a problem-domain expert.

At the same time, you also need to know how to handle the tools that will enable you to solve the problem. These might include the operating system, the programming language, and the application programming interface (API) definitions, class libraries, toolkits, or any application-specific analysis utilities. That is, you also need to become a solution-domain expert.

4. Requirements Elicitation

Having chosen your project, you will have in your possession a short description of what is involved in the project. You will realize by now that this is completely insufficient for you as a basis for doing the project. Consequently, your next task must be to find out exactly – and completely – what the project entails. This isn't as easy as it sounds.

This all translates into one simple rule: find out what you want the final system to do and how it should behave, write it down, and get everyone (Your team members) involved to agree to it in writing. And don't spare the detail: every single aspect of what's wanted should be teased out and agreed: what it does, what it doesn't do, how the user is to use it or how it communicates with the user, what

messages it displays, how it behaves when the user asks it to do something it expects, and especially how it behaves when the user asks it to do something it doesn't expect.

5. Design Methodology / Problem Modelling

Once you know the requirements, and are an expert in the problem domain, you can abstract the problem from the problem space and model it computationally: this means we can identify the theoretical tools we need to solve the problem.



6. Role of Guide('s)

Guide identifies exactly what he wants. That's what good engineers do: they help students understand what they want and then they build it for them. Here's how you do it.

1. Talk to your Guide.
2. Write up everything he or she says (by 'write up' I mean express what your guide said in your own words).
3. Build a document describing what you think is required.
4. Go back to your guide and ask for her or his comments.
5. Write up everything he or she says (by 'write up' I mean express what your guide said in your own words).
6. Go Return to step 1, and keep returning until you are both happy with your requirements document.
7. Have periodic meetings with guide. Guide and students, both should take the initiative to arrange meetings.
8. Prepare system architecture and project planning schedule after discussion with guide

7. Role of Expert Panel

- Expert panel members are expert in that domains
- Expert panel members will evaluate 25% of total work
- Assessment scheme as given below
 1. Synopsis presentation – 5%
 2. Project presentation I - 10%
 3. Final Presentation – 10%
- Marks given by panel members will not be changed in any cases



8. Synopsis Preparation and Presentation

SYNOPSIS

1. GROUP NO: _____

Name	Roll No
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____

2. PROJECT TITLE:

3. GUIDE NAME:

Prof. N. J. Ghatge

Assistant Professor, Department of Computer science and Engineering

Tatyasaheb Kore Institute of Engineering and Technology

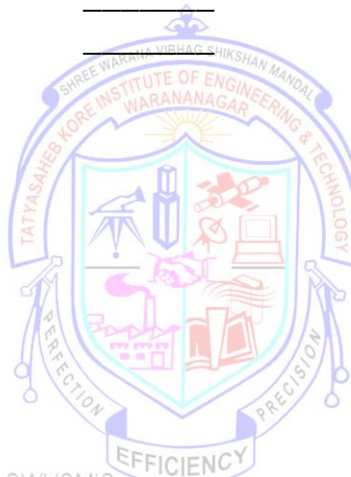
Warananagar, Panhala, Kolhapur.

3. TECHNICAL KEYWORDS:

Keyword1, Keyword2, Keyword3, Keyword4.....

4. RELEVANT OBJECTIVES:

- Objective1



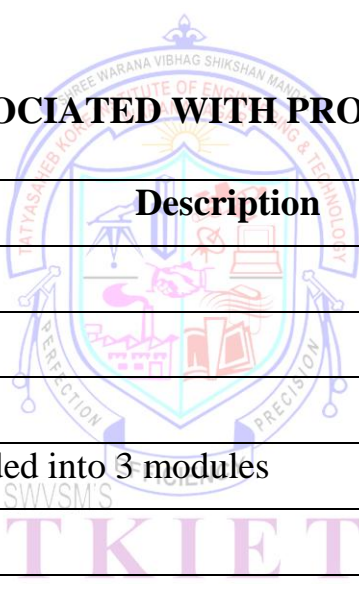
- Objective2
- Objective3
- Objective4

.....

5. PROBLEM STATEMENT:

6. LAYOUT OF SYSTEM ARCHITECTURE:

7. STRATEGY PLAN ASSOCIATED WITH PROJECT:



Work Task	Description	Duration
Literature Research		
Requirement Analysis		
Design, Planning		
Implementation	Divided into 3 modules	
Module 1		
Module 2		
Module 3.....		
System Testing		
Initial Report		
Final Report		

8. OUTCOME:

Outcome would be of 4 to 6 lines

Guidelines for Synopsis Presentation

Expected Contents:

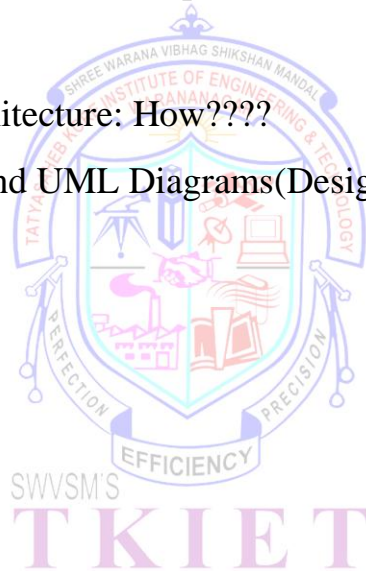
- Domain Introduction: What? Why??
- Example of 4 to 5 applications (or Project) from your domain: Where???
- Project Introduction
- Literature Overview
- Motivation : according to above explanation
- Objective
- Proposed System Architecture: How????



9. Guidelines for Project Presentation - I

Expected Contents:

- Domain Introduction: What? Why??
- Example of 4 to 5 applications (or Project) from your domain: Where???
- Project Introduction
- Literature Overview
- Motivation : according to above explanation
- Objective
- Proposed System Architecture: How????
- Modules using DFD and UML Diagrams(Design Methodology)



10. Guidelines for final Presentation

Expected Contents:

- Project Introduction
- Literature Overview
- Motivation
- Objective
- Proposed System Architecture
- Modules Implementation
- Algorithm Used
- Screen Shot
- Advantages
- Conclusion and Future Enhancement



11. Project Documentation

Typical Structure of a DSMP Project Report

- **TITLE PAGE**
- **CERTIFICATE PAGE**
- **ACKNOWLEDGEMENT**
- **List of Figures**
- **List of Tables**
- **ABSTRACT**
- **SYNOPSIS**

Chapter 1.

Introduction

1.1 Domain Information

1.2 Objective

1.3 Motivation

1.3.1 Survey of similar work

Chapter 2.

Problem definition and scope

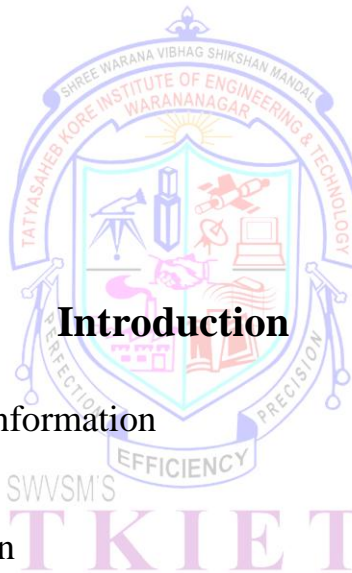
2.1 Problem definition

2.2 Scope of the work

2.3 Technologies and Associated Platforms

2.3.1 Hardware Requirement

2.3.2 Software Requirement



Chapter 3. Requirement Analysis

- 3.1 Design Requirement
- 3.2 Functional Requirement
- 3.3 Nonfunctional Requirement

Chapter 4. Design Methodology

- 4.1 System Architecture
- 4.2 Data Flow Diagram
- 4.3 UML Diagrams
 - 4.3.1 Use Case Diagram
 - 4.3.2 Class Diagram
 - 4.3.3 Sequence Diagram
 - 4.3.4 Activity Diagram
 - 4.3.5 Component Diagram
 - 4.3.6 Deployment Diagram

Chapter 5. Module Implementation Details

- 5.1 Module1 (Name)
- 5.2 Module2 (Name)
- 5.3 Module3 (Name).....
- 5.4 Algorithm strategy
 - 5.4.1 Algorithm 1
 - 5.4.2 Algorithm 2
 - 5.4.3 Algorithm 3.....

Chapter 6. Test Specification

6.1 Introduction

6.1.1 Objective

6.1.2 What is testing?

6.2 Testing Strategy

6.3 Test Cases

Chapter 7. System Design and Implementation

7.1 GUI Screen Shots

Chapter 8. Conclusion and Future Enhancement

8.1 Conclusion

8.2 Future Enhancement



12. Final Report Preparation Guidelines

- Students should prepare Report format using Latex only
- Students have to use TextMaker application for Latex Report
- Students will get Latex template and Application from college Moodle



13. Project Assessment and Marks

Projects are assessed according to several criteria and at several points during the year. This assessment will be based both on your report and on presentations. The assessment criteria are as follows:

Sr. No.	Section		% Of Total	Mark Awarded (0-100)	Date	Guide Sign	DSMP Co-or Sign
1	Domain Knowledge		5%				
2	Project Specification	Problem Definition & Scope	20%				
		Requirement Gathering (5%)					
		System Architecture (5%)					
		Synopsis Report (5%)					
3	Synopsis Presentation		5%				
4	Project Execution	Design Methodology	20%				
5	DSMP Presentation I		10%				
6	Final System	Module Implementation (15%)	20%				
		Test Specification (5%)					
7	Project Report		10%				
8	Final Presentation		10%				
TOTAL			100%		HOD Signature		

1. Project Progress Report

To fulfill above assessment work students should maintain minimum 12-15 progress report

Date: - / /


Project Progress Report

Group No.: _____ Roll No of Present Students: _____

Year & Semester: _____ Roll No of Absent Students: _____

Name of Project: _____

Topics discussed with Guide: _____



Guide
(Prof. _____)

DSMP Coordinator
(Prof. N. J. Ghatge)

HOD
(Prof. A.G.Patil)