

Undergraduate Senior Design Project (Text Extract)

GHULAM ISHAQ KHAN INSTITUTE OF ENGINEERING SCIENCES AND TECHNOLOGY

FACULTY OF ENGINEERING SCIENCES (FES)

UNDERGRADUATE
SENIOR DESIGN PROJECT
HANDBOOK

Document Issued: SPRING 2024
Prepared By: SDP Committee, FES
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INTRODUCTION

The Senior Design Project (SDP) is a mandatory prerequisite for award of degree in undergraduate programs. At the Faculty of Engineering Sciences (FES), it is spread over the final three semesters as follows:

6th Semester: Project proposal submission, registration

7th Semester: Approval/ Implementation of the Senior Design Project

8th Semester: Implementation/Testing/Finalized Documentation (Report/ Thesis)

Objectives

SDPs are considered as unitary of the core components for undergraduate programs at FES. These projects play a key role in forming the students' mind-set towards performing real life projects. In summation, the SDP aims to encourage the student to integrate and use almost all core modules/forms they have examined during their undergraduate journey. The objectives of SDP include:

To identify and formulate a hardware setup and a computer-based system according to agreed requirements.

To use and implement latest tools and technologies to meet the requirement of industry.

To apply engineering theory and practices in the modelling and design of Hardware/ Software-based systems.

To select and utilize the knowledge, techniques and skills of their respective discipline to produce an efficient system.

To work effectively in a team environment.

To apply and address professional, ethical, legal, and social issues and responsibilities.

To present effectively to a range of audiences.

Schedule for SDP Milestone, Deliverables and Evaluation

Final Year Project-I (6th Semester and Summer Break)

Final Year Project-II (7th Semester)

Final Year Project-III (8th Semester)

Marking scheme at a glance

Project Advisor (50%)

Attendance 10% (Advisor must submit attendance form within a week after the meeting for the attendance to be counted, total 10 meetings required).

Advisor feedback 20%.

Progress Report 1 5%.

Progress Report 2 5%.

Final Report 10%.

Evaluation Committee (50%)

Coordinator meetings 5% (Attendance is mandatory for all meetings).

First presentation 5%.

Second presentation + First Demo 5% + 5%.

Third presentation/demo 5%.

Final presentation + Demo 5% + 15%.

Industrial Open House 5%.

For further details about each milestone, see Chapter 3.

GUIDELINES

Faculty of Engineering Science, with designation of lecturer and above is eligible for supervision of SDP.

The student who is eligible for SDP is encouraged to conform to the guidelines provided by SDP committee.

In case of any complaint/request, students should contact their respective supervisor or SDP Coordinator.

If a student has any issue with their supervisor, evaluator or the respective SDP Coordinator, he or she can submit their complaint of the incident to the SDP Coordinator or Dean, in good time.

For any updates and notifications regarding SDP, it is mandatory for every SDP student to join their respective email groups.

If a student fails to follow the SOPs/Guideline, he / she may be penalized.

Guidelines for Students

Registration Guidelines

Registration:

Each student doing SDP must register during registration week in 6th semester.

Formation and number of students in an SDP Group: There can be minimum 2 and maximum 3 members in an SDP group, depending on the scope of the project. In case of interdisciplinary SDP, 4 members are allowed.

Evaluation Folder:

Each SDP will have an evaluation folder that will include:

Meeting log with Supervisor (See Appendix D).

Evaluator's comments/recommendations/suggestions at each milestone.

Supervisor remarks on the evaluators' comments /recommendations/suggestions.

All documentation related to SDP (e.g. Scope, Abstract, Report/ Thesis).

Documentation at each milestone is to be punched and placed in the evaluation folder.

Meeting with Supervisor:

Students should meet regularly with their respective supervisor and record their meeting log (duly signed by the supervisor) in the evaluation folder.

Each SDP group must submit minimum two meeting logs before evaluation of each milestone. A total of 10 meeting logs are required.

Students must have their presentations/reports reviewed by the supervisor prior to the milestone deadline.

Students and supervisor should ensure that suggestions/comments given by evaluation committee to the supervisor are carefully addressed.

Note: Students will not contact evaluators after the evaluation slot. In case of any query contact respective supervisor.

Role and Responsibilities of SDP Committee

Faculty of Engineering Sciences, constituted a dedicated SDP committee to smoothly execute the SDP process. The committee consists of the following members and report to Dean of Faculty:

Dr. Muhammad Omer Bin Saeed (Coordinator)

Engr. Muhammad Sadiq (Member)

Role of Coordinator

Constitute an evaluation committee with the consensus of Dean and Supervisor.

Control overall project related activities. (Direct whole SDP process).

Coordinate with SDP Supervisors for all SDP events and activities.

Role of Supervisor

The role of supervisor includes: (may not be limited to this only)

Discussing the project plan and suggesting changes if necessary.

Ensure regular and effective meetings with students.

Advising on the appropriate materials and methods/design/technology to use.

Offering advice on sources of information for respective project.

Advising on issues related to SDP report write up.

Reading drafts of each chapter of SDP report.

Ensure that their groups are following required standard and procedures etc.

Role of Evaluation Committee

Each SDP group will be evaluated by a team of faculty members (referred as evaluators). They are collectively responsible for both:

Critique and evaluate different stages of SDP (milestone) according to predefined rubrics (See Appendix B) along with the coordinator.

Submit evaluations as per evaluation plan/ rubrics to student section office through prescribed method.

SOPs for Evaluation Committee

The evaluation team assigned at the 1st milestone (i.e. before 1st Presentation) will evaluate project at every milestone.

The evaluators and students should book the presentation venue before time to avoid any unnecessary delay.

It is the evaluator's responsibility to ensure:

If any evaluator is not available during the evaluation, he or she inform the SDP coordinator and must provide their substitute.

Any issue regarding substitute arrangement, should be reported through email to the SDP coordinator, with CC to Dean.

After each presentation, evaluators must submit their written feedback and evaluation result sheets to Student Office, within one week, for onward forwarding to the supervisors through the Dean's office.

Evaluators are requested to follow announced schedule and time for smooth conduct of evaluation process.

Important Note:

The Evaluation Committee will decide whether to accept or reject the Project Proposal. If the proposal is rejected or some changes are suggested by the committee then the student will resubmit the Project Proposal in the next week.

Each group member will be graded individually depending on the performance of each student.

Students are advised not to contact the evaluators directly before or after the evaluation.

Formatting and Layout

Students and supervisors to ensure that formatting and layout are as per the SDP Template in Appendix A.

Details of Milestone and Activities

Final Year Project-Phase I (6th Semester and Summer Break)

The Senior Design Project (SDP) kicks off with an announcement in the 2nd week of the 6th semester, guiding students to form groups and choose their project topic and advisor. These groups should then conduct their First Project Meeting with the SDP coordinator in the 3rd week. By the 10th week of the 6th semester, the SDP groups must submit registration forms, specifying group members, advisors, and project topics.

Final Year Project-Phase II (7th Semester)

In the 7th semester, the Senior Design Project (SDP) progresses with several key milestones. The semester begins with the Second Project Meeting with the SDP Coordinator in the 2nd week. Following this, in the 5th week, Presentation 1 takes place, where project groups showcase their initial findings and defend their chosen project title. The results of Presentation 1 are then announced in the 6th week. Two weeks after the mid-term exam, the Third Project Meeting with the SDP Coordinator occurs in the 11th week. In the 13th week, Presentation 2 and Field Test 1 happen, where project groups present their work and conduct initial field tests. The results of Field Test 1 and Presentation 2 are subsequently announced in the 14th week, marking critical progress in the ongoing Senior Design Project.

Final Year Project-Phase III (8th Semester)

In the 8th semester, the Senior Design Project (SDP) unfolds through a series of significant milestones. It begins with the Fourth Project Meeting with the SDP Coordinator in the 2nd week. Following this, in the 4th week, Presentation 3, a demonstration of the project, takes place where groups showcase their work. The results of Presentation 3 are then announced in the 5th week. Progressing further, the Fifth Project Meeting with the SDP Coordinator happens in the 7th week. In the 10th week, a final presentation arrives with PRESENTATION 4 and FIELD TEST 2, where project groups present their work and conduct additional tests. Results for Field Test 2 and Presentation 4 are subsequently announced in the 11th week. Moving on to the 12th week, project groups are required to submit their Project Report for review, with one copy in spiral binding. During the Open House, the Project will be evaluated by the Open House Evaluation Committee. One week after completing the Final Report Review, project groups submit their BOOK BINDING along with the Project Executable Code on DVD. The final step involves the SDP Coordinator submitting results to the Exam Department after the Final Report Submission. This detailed timeline ensures a well-organized and timely conclusion to the Senior Design Project in the 8th semester.

APPENDIX A (DOCUMENTATION TEMPLATES)

« PROJECT TITLE »

Final Year Design Project Report

Submitted by

« Students Names » « Students Registration Numbers »

Advisor

« Advisor's Names » « Advisor's affiliation »

Faculty of Engineering Sciences

Ghulam Ishaq Khan Institute of Engineering Sciences and Technology.

Month 20XX

Certificate of approval

It is certified that the work contained in this thesis entitled "-----" was carried out by (Group members names), under the supervision of (advisor name) for the partial fulfillment of the degree requirement of Bachelor of Science in Engineering Sciences.

Approved by

Name and signature Name and signature
Advisor Dean FES

ACKNOWLEDGEMENT:

ABSTRACT

« A short summary of the project emphasising the actual work performed and the important results obtained in preferably one paragraph and no more than 100 words. »

LIST OF SYMBOLS AND ABBREVIATIONS

« Symbol 1 » « Symbol Description »

« Symbol 1 » « Symbol Description »

“abbreviation 1” « Expansion »

“abbreviation 2” « Expansion »

Note that only important symbols need to be included in this list.

CONTENTS

ABSTRACT i

LIST OF SYMBOLS ii

CHAPTER 1 « CHAPTER TITLE » 1

1.1 « Section Title » «Page no.»

1.2 « Section Title » «Page no.»

... ..

CHAPTER 2 « CHAPTER TITLE » «Page no.»

2.1 « Section Title » «Page no.»

2.2 « Section Title » «Page no.»

REFERENCES «Page no.»

APPENDIX A « APPENDIX TITLE » «Page no.»

APPENDIX B « APPENDIX TITLE » «Page no.»

Chapter 1: Introduction

- 1.1 PROJECT DEFINITION
- 1.2 PROJECT OBJECTIVES
- 1.3 PROJECT SPECIFICATION
- 1.4 APPLICATIONS

Chapter 2: Literature Review

- 2.1 PROJECT BACKGROUND
- 2.2 PREVIOUS WORK
- 2.3 COMPARATIVE STUDY

Chapter 3: Design Methodology

- 3.1 DESIGN CONSTRAINTS
- 3.2 ENGINEERING STANDARDS
- 3.3 THEORY AND THEORETICAL CALCULATIONS
- 3.4 PRODUCT SUBSYSTEMS AND SELECTION OF COMPONENTS

Chapter 4: System Testing and Analysis

- 4.1 EXPERIMENTAL SETUP
- 4.2 RESULTS, ANALYSIS AND DISCUSSION

Chapter 5: Project Management

- 5.1 PROJECT PLAN
- 5.2 CONTRIBUTION OF TEAM MEMBERS
- 5.3 PROJECT EXECUTION MONITORING
- 5.4 CHALLENGES AND DECISION MAKING
- 5.5 PROJECT BILL OF MATERIALS AND BUDGET

Chapter 6: Project Analysis

- 6.1 Life-long Learning
- 6.2 Impact of Engineering Solutions
- 6.3 Contemporary Issues Addressed

Chapter 7: Conclusions and Future Recommendations

- 7.1 CONCLUSIONS
- 7.2 FUTURE RECOMMENDATIONS

REFERENCES

Note: All references quoted in the report should be listed down in the manner and style indicated below and numbered sequentially in the order as they appear in the main text. However, the list should not contain any entry that has not been quoted anywhere in the report.

One convenient way to quote a reference is to include the reference number in square brackets. For example, "More details on the instruction formats of the processor can be found in the Processor Instruction Manual [7] ...".

[1] Author(s) name(s), "Article Title", Journal Title volume #, starting page-ending page (year of publication).

[2] Author(s) name(s), "Article Title" in "Book Title," name of editor, ed., Publisher, City, starting page-ending page if applicable (year of publication).

[3] Author(s) name(s), "Book Title", Publisher, City, starting page-ending page if applicable (year of publication).

[4] Author's name, "Thesis Title", name of university (year of publication).

SDP-CEP Mapping

SDG Goals Map

PLACE TICK the Achieved COLUMN

APPENDIX B (EVALUATION RUBRICS)

Senior Design Project – Presentation 1 Rubric

Evaluator Name: Group 01

Senior Design Project – Presentation 2 Rubric

Evaluator Name: Group 01

Senior Design Project – Mid Semester Demonstration Rubric (3rd Assessment)

Evaluator Name: Group 01

Senior Design Project – Presentation 4 Rubric

Evaluator Name: Group 01

Senior Design Project – Field Test 2 Rubric

Evaluator Name: Dr. Group 01

Senior Design Project – Open House Rubric

Evaluator Name: Dr. Group 01

Senior Design Project – Supervisor Feedback Rubric

Evaluator Name: Group 01

APPENDIX C (SDP FORMS)

SDP Registration Form
Senior Design Project Registration Form

Group No
(To allot by the Dean)

APPENDIX D (MEETING & EVALUATION LOG)

SDP ATTENDANCE FORM

SDP ATTENDANCE FORM

Project Number _____ Date _____ Meeting Number _____

Group Members

Advisor Comments

.....
Project Advisor

.....
Signature

.....
Date

S. # | Activity | Deadline

1 | Announcement of commencement of SDP | 2nd week

2 | First project meeting with SDP Coordinator | 3rd week

3 | Registration form submission by students | 10th week

Sr. # | Activity | Deadline

1 | Second project meeting with SDP Coordinator | 2nd week

2 | PRESENTATION 1 (Title/Scope/Prelim Work Defense) | 5th week

3 | Results of Presentation 1 announced | 6th week

4 | Third project meeting with SDP Coordinator | 11th week

5 | PRESENTATION 2 and FIELD TEST 1 | 13th week

6 | Results of Field Test 1 and Presentation 2 announced | 14th week

Sr. # | Activity | Deadline

1 | Fourth project meeting with SDP Coordinator | 2nd week

2 | PRESENTATION 3 (DEMO) | 4th week

3 | Results of Assessment 3 announced | 5th week

4 | Fifth project meeting with SDP Coordinator | 7th week

5 | PRESENTATION 4 and FIELD TEST 2 | 10th week

6 | Submission of Project Report for review (1 copy in spiral binding) | 10th week
7 | Results of Field Test 2 and Presentation 4 announced | 11th week
8 | Open House Evaluation | During Open House
9 | Project Evaluation by Open House Evaluation Committee | During Open House
10 | BOOK BINDING submission along with Project Executable Code in DVD (after review) | 1 week after
Final Report Review Completion (latest by 12th week)
11 | Result Submission to the Exam Department | SDP Coordinator, after Final Report Submission
SDP Title |

Complex Engineering Problem Attributes | Complex Engineering Problem Attributes

Engineering problems which cannot be resolved without in-depth engineering knowledge, and have some or all of the characteristics listed below: | Please write your comments against each attribute in the space below. Attach more sheets if necessary.

Involve wide-ranging or conflicting technical, engineering and other issues. |

Have no obvious solution and require abstract thinking, originality in analysis to formulate suitable models |

Requires research-based knowledge much of which is at, or informed by, the forefront of the professional discipline and which allows a fundamentals-based, first principles analytical approach. |

Involve infrequently encountered issues |

Are outside problems encompassed by standards and codes of practice for professional engineering. |

Involve diverse groups of stakeholders with widely varying needs |

Have significant consequences in a range of contexts |

Are high level problems including many component parts or sub-problems. |

S. No | SUSTAINABLE DEVELOPMENT GOALS | please Tick ()

1 | GOAL 1: No Poverty |

2

||

3 ||

4 ||

5 ||

6 ||

7 ||

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9 | GOAL 9: |

10 ||

11 ||

12 | GOAL 12: |

13 ||

14 ||

15 ||

16 ||

17 ||

aPPENDIX

PLOs | | Fall Semester | Marks | Poor | Satisfactory | Good | Excellent | Obtained Marks | Obtained Marks |
Obtained Marks | Obtained Marks

| | Presentation 1

(50) | | 0-2 | 3-5 | 6-8 | 9-10 | | | |

PLO-12

Lifelong Learning | | | 0-2 | 3-5 | 6-8 | 9-10 | | | |

PLO-1

Engineering Knowledge | A | Justification of scope in context of FES curriculum | 10 | Scope of project not justified. Revision required. | Scope of project needs to be refined. | Scope of project justified to an acceptable level. | Precise justification of project scope. | | | |

PLO-2

Problem Analysis | B | Description of aims of the project | 10 | Problem statement unclear, project goals undefined | Problem statement needs refining, project goals unclear | Problem statement clearly given but goals unclear | Problem statement and goals clearly and precisely defined | | | |

PLO-11

Project Management | C | Descriptive methodology and background study | 10 | No background study, no cost/time evaluation | Background study, cost/time evaluation provided but without details | Background study, cost/time evaluation provided with adequate details | Background study, cost/time evaluation provided with all details covered | | | |

PLO-11

Project Management | D | Midterm goals for end of Semester 7 | 10 | No goals defined | Goals stated but no details provided | Goals stated with adequate details | Goals clearly stated with all details provided | | | |

PLO-10

Communication | E | Communication and organization

skills | 10 | Unorganised,

inability to

answer questions,

improper English | Organised but inability

to answer some

questions,

erratic English | Organised with

proper details,

answer most

questions

adequately,

proper English | Organised in

detail and in order,

able to answer all

questions with

precision, fluent

English used. | | | |

PLOs | | Fall Semester | Marks | Poor | Satisfactory | Good | Excellent | Obtained Marks | Obtained Marks |
Obtained Marks | Obtained Marks

| | Presentation 2 (50) | | 0-2 (0-4)* | 3-5 (5-10)* | 6-8 (11-16)* | 9-10 (17-20)* | | | |

PLO-12

Lifelong Learning | | | 0-2 (0-4)* | 3-5 (5-10)* | 6-8 (11-16)* | 9-10 (17-20)* | | | |

PLO-2

Problem Analysis | A | Design requirements | 10 | No design requirements or block diagram given. | Design requirements given vaguely. | Design requirements and block diagram given without detail. | Detailed design requirements given, including diagrams. | | | |

PLO-3 Design/ Development of Solutions | B | Design specifications | 10 | No design specifications or parameters defined. | Design specifications mentioned but without any knowledge. | Design specifications given with some knowledge. | Design specifications given in detail with complete knowledge. | | | |

PLO-9

Individual and Teamwork | C | Individual contributions | 20* | No individual contribution. | Limited or incomplete individual contribution. | Failed to complete individual tasks but found alternative ways. | Individual tasks, or alternate tasks, completed successfully. | | | |

PLO-10

Communication | D | Communication
and organization

skills | 10 | Unorganized,
inability to

answer questions,

improper English | Organized but inability
to answer some

questions,

erratic English | Organized with

proper details,

answer most

questions

adequately,

proper English | Organized in

detail and in order,

able to answer all

questions with

precision, fluent

English used. | | | |

| | Field Test 1 (100) | | 0-6 (0-8)** | 7-15 (9-20)** | 16-24 (21-32)** | 25-30 (33-40)** | | | |

PLO-12

Lifelong Learning | | | 0-6 (0-8)** | 7-15 (9-20)** | 16-24 (21-32)** | 25-30 (33-40)** | | | |

PLO-5 Modern Tool Usage | A | Midterm results as declared in Presentation 1 | 30 | No results achieved. | Some results achieved but not as declared. | Some results achieved as declared. | Results achieved successfully as declared. | | | |

PLO-4

Investigation | B | Analysis of results | 30 | No idea about how results were attained. | Some knowledge about how results were achieved but cannot explain. | Have knowledge about the results but cannot explain. | Have complete knowledge and can successfully explain the working. | | | |

PLO-9

Individual and Teamwork | C | Individual contributions | 40** | No individual contribution. | Limited or incomplete individual contribution. | Failed to complete individual tasks but found alternative ways. | Individual tasks completed successfully. | | | |

PLOs | | Fall Semester | Marks | Poor | Satisfactory | Good | Excellent | Obtained Marks | Obtained Marks |
Obtained Marks | Obtained Marks

| | Mid Semester Demo (50) | | 0-2 (0-4)* | 3-5 (5-10)* | 6-8 (11-16)* | 9-10 (17-20)* | | | |

PLO-12

Lifelong Learning | | | 0-2 (0-4)* | 3-5 (5-10)* | 6-8 (11-16)* | 9-10 (17-20)* | | | |

PLO-3 Design/ Development of Solutions | A | Relevance of demo with approved proposal | 10 | The design/solution has NO relevance or very little relevance, or an updated proposal is unapproved. | Some relevance but undefined. | Mostly relevant but lacking in certain perspectives. | Completely relevant, students have a good justification for choosing a particular design. | | | |

PLO-4

Investigation | B | Investigation (Function of a component/part of code + Results) | 10 | Not able to analyze

design, functionality and/or results. | Somewhat able to analyze design, functionality and/or results. | Significantly able to analyze design, functionality and/or results. | Completely able to analyze design, functionality and results. | | | |

PLO-9

Individual and Teamwork | C | Individual contributions | 20* | No individual contribution or tasks not well defined for a project member. | Limited or incomplete individual contribution. | Partially completed individual tasks. | Individual tasks completed successfully. | | | |

PLO-11

Project Management | D | Achievability of final targets (Well-Defined Plan/Goals + Time management) | 10 | Poor time management, targets not achievable/not defined properly. | Below average time management, some targets may be achieved. | Good time management and most targets can be achieved. | Excellent time management and all targets can be achieved. | | | |

PLOs | | Spring Semester | Marks | Poor | Satisfactory | Good | Excellent | Obtained

Marks | Obtained

Marks | Obtained

Marks | Obtained

Marks

PLOs | | Presentation 4

(100) | Marks | 0-2 | 3-5 | 6-8 | 9-10 | | | |

PLO-3

Design / Development of Solutions | A | Design relevance with approved title/goals | 10 | No design presented | Design presented but not completely in line with approved title/goals | Design in line with approved title/goals but incomplete | Complete design, in line with approved title/goals | | | |

PLO-6

Engineer and Society | B | Project relevance with SDGs | 10 | No relevance shown | Relevance only mentioned | Relevance shown but not well described | Relevance with specific SDGs described in detail | | | |

PLO-3

Design / Development of Solutions | C | Design, block diagram/flowchart and understanding | 10 | No block diagram/flowchart | Block diagram/flowchart shown but no understanding | Block diagram/flowchart shown with little understanding | Block diagram/flowchart with complete understanding presented | | | |

PLO-4

Investigation | D | Presentation and/or analysis of results | 10 | Not able to analyze design, functionality and/or results. | Somewhat able to analyze design, functionality and/or results. | Significantly able to analyze design, functionality and/or results. | Completely able to analyze design, functionality and results. | | | |

PLO-9 Individual & Teamwork | E | Individual contribution | 10 | No individual contribution or tasks not well defined for a project member. | Limited or incomplete individual contribution. | Partially completed individual tasks. | Individual tasks completed successfully. | | | |

PLO-10

Communication | F | Communication and organization skills | 10 | Unorganized, inability to answer questions, improper English | Organized but inability to answer some questions, erratic English | Organized with proper details, answer most questions adequately, proper English | Organized in detail and in order, able to answer all questions with precision, fluent English used. | | | |

PLOs | Rubric Numbers | Spring Semester | Marks | Poor | Satisfactory | Good | Excellent | Obtained

Marks | Obtained

Marks | Obtained

Marks | Obtained

Marks

PLOs | Rubric Numbers | Presentation 4

(150) | Marks | 0-4 | 5-10 | 11-16 | 17-20 | | | |

PLO-11

Project Management | A | Project completion as per approved goals | 20 | Results significantly below par | Some results achieved | Most results achieved | Project completed | | | |

PLO-4

Investigation | B | In-depth knowledge of all project aspects (including analysis of design and results) | 20 | Very basic or limited knowledge about the project. | Some knowledge about some aspects of the project. | Some knowledge about most aspects of the project. | Complete knowledge about all aspects of the project. | | | |

PLO-10

Communication | C | Project pitch | 20 | Cannot pitch their project at all | Can pitch their project in a weak manner | Have a good pitch but with poor timing | Have an excellent and well-timed pitch | | | |

PLO-9

Individual & Teamwork | D | Demonstration setup quality | 20 | Poor or no setup. | Some parts of the demo setup properly. | Most parts of the demo setup properly. | Excellent setup. | | | |

PLOs | Rubric Numbers | Spring Semester | Marks | Poor | Satisfactory | Good | Excellent | Obtained

Marks | Obtained

Marks | Obtained

Marks | Obtained

Marks

PLOs | Rubric Numbers | Presentation 4

(50) | Marks | 0-2 | 3-5 | 6-8 | 9-10 | | | |

PLO-6

Engineer & Society | A | Project significance (Industry, Research, Society) | 10 | No significance mentioned. |

One of the three aspects partially covered. | At least one aspect completely covered. | At least two aspects completely covered. | | | |

PLO-11

Project Management | B | Quality demonstration of a completed prototype | 10 | Prototype incomplete and/or poor demo quality. | Prototype somewhat completed but demo quality is average. | Prototype mostly completed but demo quality is average. | Prototype completed with excellent demo. | | | |

PLO-10

Communication | C | Project pitch | 10 | Cannot pitch their project at all | Can pitch their project in a weak manner | Have a good pitch but with poor timing | Have an excellent and well-timed pitch | | | |

PLO-10

Communication | D | Poster and Stall quality | 10 | Not following template and/or not describing project correctly, stall poorly prepared. | Template followed and/or project correctly described but lacking in details/stall quality average | Template followed but lacking in details/stall quality above average | Excellent poster and stall quality. | | | |

PLOs | | Spring Semester | Marks | Poor | Satisfactory | Good | Excellent | Obtained

Marks | Obtained

Marks | Obtained

Marks

PLOs | | Supervisor Feedback

(200) | Marks | 0-10 | 11-25 | 26-40 | 41-50 | | | |

PLO-10

Communication | A | Final Report | 50 | | | | | | |

PLO-10

Communication | B | Supervisor feedback on meetings | 50 | | | | | | |

PLO-9 Individual & Teamwork | C | Individual contribution | 50 | | | | | | |

Reg No | Student Name | Attendance

| |
| |
| |
| |
| |