**COURSE LEARNING OUTCOME FOR FINAL YEAR PROJECT-1**

**Proposal Examination**

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| **CLOs** | **Description** | **Evaluation Rubrics** | **Marks** |
| CLO1 | Defend a project idea employing technologies related to the program by studying exisiting solutions and related concepts | 1. Introduction: The need of the project and its values is clear? 2. What if we do not do this project? Motivation for the project 3. Scope of the project 4. Problem Statement 5. Suggested Solution 6. Well defined Goals of the project 7. Objectives of the project FYP 1 and 2 8. What will be the end project results look like (Intuition is sufficient)- Expected Results | 8 |
| CLO5 | Manage working with a group of two-three members | How effective was the work distribution. Ideally there should be equal contribution from all group members in each of the major phase e.g. Requirements, design etc. | 2 |

Points (out of 100) of this evaluation are as (Supervisor 3.5 and the Jury 6.5)

**COURSE LEARNING OUTCOME FOR FINAL YEAR PROJECT-1**

**Midterm Examination**

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| **CLOs** | **Description** | **Evaluation Rubrics** | **Marks** |
| CLO1 | Defend a project idea employing technologies related to the program by studying existing solutions and related concepts. | Give a score based on the following points. A table or diagram showing:   * Key results/conclusion * Gap which needs to fill * Formatted and Clear References * Recent and updated References * Refined Problem Statement | 7 |
| CLO2 | Design using necessary tools (UML, Class, Er Diagrams) and implement, a product/project using agile software development methodology (20% modules) | 1. System Analysis (Scale of 0 to 4)    1. (Use Cases/ Use Case Diagram, SSD, SRS, Test Plan (Test Level, Testing Techniques), Software Development Plan, Wireframes, UI Screens) 2. System Design (Scale of 0 to 4)    1. Design Phase (Select the design that is appropriate for your project):    2. Structure Design (Domain Model/ Class Diagram, Component Diagram, Layer Diagram, Structure Chart)    3. Behavior Design (Flow Diagram, Data Flow Diagram (DFD), Data Dictionary, Activity Diagram, Network Automata / Graphs or State Machine, Call Graph or Sequence Diagram, Interaction Overview Diagram) 3. Data Representation (Scale of 0 to 3) (which is applicable)    1. DB Representation (Schema Design/ ER Diagram)    2. Data Structure Design    3. Algorithm Design | 11 |
| CLO4 | Demonstrate project management skills as a group, i.e., planning and forecasting, scheduling, time management, risk management | 1. Updated Timeline and plan of execution of the project 2. Project report for 20% modules 3. Presentation (PPT), communication, effective answer to the question 4. Test case writing/ Evaluation Measures 5. Application of test cases 6. Testing outcomes | 6 |
| CLO5 | Manage working with a group of two-three members | How effective was the work distribution. Ideally there should be equal contribution from all group members in each of the major phase e.g. Requirements, design etc. | 6 |

Points (out of 100) of this evaluation are as (Supervisor 10.5 and the Jury 19.5)

**COURSE LEARNING OUTCOME FOR FINAL YEAR PROJECT-1**

**Final Examination**

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| **CLOs** | **Description** | **Evaluation Rubrics** | **Marks** |
| CLO2 | Design using necessary tools (UML, Class, Er Diagrams) and implement, a product/project using agile software development methodology (40% modules) | 1. System Analysis (Scale of 0 to 4) should have some of the system analysis diagrams in the ppt and report as well. (Use Cases/ Use Case Diagram, SSD, SRS, Test Plan (Test Level, Testing Techniques), Software Development Plan, Wireframes, UI Screens) 2. System Design (Scale of 0 to 3) should the system design diagrams in the ppt and report. The design documents can be one of the following category depending upon nature of the project and approved by the supervisor:    1. Structure Design (Domain Model/ Class Diagram, Component Diagram, Layer Diagram, Structure Chart)    2. Behavior Design (Flow Diagram, Data Flow Diagram (DFD), Data Dictionary, Activity Diagram, Network Automata/ Graphs or State Machine, Call Graph or Sequence Diagram, Interaction Overview Diagram) 3. DB Representation (Schema Design/ ER Diagram) (Scale of 0 to 1) 4. Data Structure Design (Scale of 0 to 1) 5. Algorithm Design (Scale of 0 to 1) 6. Coding Conventions (Scale of 0 to 5)    1. Variable Naming, Modular Structure    2. Avoidance of Hard Coding    3. Proper Comments and Indentations    4. Use of suitable Data Structures    5. Reliance on built-in functions (the lesser the better) | 9 |
| CLO3 | Demonstrate working of the project during the demo presentation while showing effective communication skills. (40% Modules) | Project Prototype Demonstration. Efficiency/ Efficacy. Goals Achieved. Technical Difficulties/Issues resolved. | 15 |
| CLO4 | Demonstrate project management skills as a group, i.e., planning and forecasting, scheduling, time management, risk management | 1. Project Presentation (PPT), communication, effective answer to the question. [6 Marks] 2. Project report for 40% modules, Presentation (including formal language and dressing), communication, effective answer to the question. Updated timeline and plan of execution of the project [8 Marks] | 14 |
| CLO5 | Manage working with a group of two-three members | 1. How effective was the work distribution. Ideally there should be equal contribution from all group members in each of the major phase e.g. Requirements, design etc. 2. Meetings with supervisor: expected to have at least one meeting in a week. | 12 |

Points (out of 100) of this evaluation are as (Supervisor 17.5 and the Jury 32.5)

**COURSE LEARNING OUTCOME FOR FINAL YEAR PROJECT-1**

**Poster Evaluation**

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| **CLOs** | **Description** | **Evaluation Rubrics** | **Marks** |
| CLO1 | Defend a project idea employing technologies related to the program by studying existing solutions and related concepts. | Poster design | 5 |
| CLO3 | Demonstrate working of the project during the demo presentation while showing effective communication skills. (40% Modules) | Project demonstration on poster | 5 |

Points (out of 100) of this evaluation are as (Supervisor 3.5 and the Jury 6.5)

**COURSE LEARNING OUTCOME FOR FINAL YEAR PROJECT-2**

**Midterm Examination**

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| **CLOs** | **Description** | **Evaluation Rubrics** | **Marks** |
| CLO1 | Design using necessary tools (UML, Class, Er Diagrams) and implement, a product/project using formal software development methodology (Complete project) | 1. System Analysis (Scale of 0 to 4) (Use Cases/ Use Case Diagram, SSD, SRS, Test Plan (Test Level, Testing Techniques), Software Development Plan, Wireframes, UI Screens 2. System Design (Scale of 0 to 3)    * Design Phase (Select the design that is appropriate for your project):      1. Structure Design (Domain Model/ Class Diagram, Component Diagram, Layer Diagram, Structure Chart)      2. Behavior Design (Flow Diagram, Data Flow Diagram (DFD), Data Dictionary, Activity Diagram, Network Automata/ Graphs or State Machine, Call Graph or Sequence Diagram, Interaction Overview Diagram) 3. Data Representations (Scale of 0 to 3)    * DB Representation (Schema Design/ ER Diagram)    * Data Structure Design (Scale of 0 to 1)    * Algorithm Design (Scale of 0 to 1) | 10 |
| CLO2 | Demonstrate capability to integrate software modules into a coherent working system | A working application demonstration on scale of 0 to 5 for the application working and completeness. | 5 |
| CLO3 | Demonstrate formal testing techniques for the developed project | Give a score based on the following points.   1. Some preliminary results although not complete is sufficient which indicate feasibility of the project 2. The metrics or methodology should be clear that was used for obtaining the results 3. Metrics for Testing, Comparison, Performance and/or Accuracy Measurement of the final product. 4. Test case writing/ Evaluation Measures 5. Application of test cases 6. Testing outcomes | 7 |
| CLO4 | Demonstrate working of the project during the demo presentation while showing effective communication skills. | 1. Project Prototype Demonstration 2. Efficiency/ Efficacy in the development 3. Goals Achieved by this presentation (expected at least 80% progress) 4. Technical Difficulties/Issues resolved by the presentation | 5 |
| CLO5 | Demonstrate project management skills as a group, i.e., planning and forecasting, scheduling, time management, risk management | 1. Project Progress 2. Timeline update 3. Clarity about final deliverables, whether simulation or some testing results 4. Plan of execution, limitations, Assumptions. Updated report and ppt | 6 |
| CLO6 | Manage working with a group of two-three members | How effective was the work distribution. Ideally there should be equal contribution from all group members in each of the major phase e.g. Requirements, design etc. | 7 |

Points (out of 100) of this evaluation are as (Supervisor 14 and the Jury 26)

**COURSE LEARNING OUTCOME FOR FINAL YEAR PROJECT-2**

**Final Examination**

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| **CLOs** | **Description** | **Evaluation Rubrics** | **Marks** |
| CLO1 | Design using necessary tools (UML, Class, Er Diagrams) and implement, a product/project using formal software development methodology (Complete project) | 1. Data Representation (Scale of 0 to 4) 2. DB Representation (Schema Design/ ER Diagram) 3. Data Structure/Representation Design 4. Algorithm Design/ Coding Methodologies | 4 |
| CLO2 | Demonstrate capability to integrate software modules into a coherent working system | 1. A working application demonstration on scale of 0 to 5 for the application working and completeness. (**The incomplete project will get F grade.)** 2. Coding Style (0 to 5)    1. Variable Naming    2. Modular Structure    3. Avoidance of Hard Coding    4. Proper Comments and Indentation    5. Use of suitable Data Structures    6. Reliance on built-in functions | 12 |
| CLO3 | Demonstrate formal testing techniques for the developed project | 1. Test case writing/ Evaluation Measures 2. Application of test cases 3. Testing outcomes | 10 |
| CLO4 | Demonstrate working of the project during the demo presentation while showing effective communication skills. | 1. Project Demonstration 2. Efficiency/ Efficacy 3. Goals Achieved. 4. Technical Difficulties/Issues resolved. 5. Some preliminary results although not complete is sufficient which indicate feasibility of the project 6. The metrics or methodology should be clear that was used for obtaining the results 7. Metrics for Testing, Comparison, Performance and/or Accuracy Measurement of the final product. | 12 |
| CLO5 | Demonstrate project management skills as a group, i.e., planning and forecasting, scheduling, time management, risk management | Project Versions  GitHub/storage  Deployment of the project | 3 |
| CLO6 | Manage working with a group of two-three members | How effective was the work distribution. Ideally there should be equal contribution from all group members in each of the major phase e.g. Requirements, design etc. | 9 |

Points (out of 100) of this evaluation are as (Supervisor 17.5 and the Jury 32.5)

**COURSE LEARNING OUTCOME FOR FINAL YEAR PROJECT-2**

**Final Report Evaluations**

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| **CLOs** | **Description** | **Evaluation Rubrics** | **Marks** |
| CLO5 | **Preamble Correctness** | Title page [1]  Student Declaration [1]  Certificate of Approval [1]  Acknowledgment [1]  Abstract [1] | 0.5 |
| CLO5 | **Cover Page** | Students’ name and registration number is written.  Supervisor's name is mentioned.  Title of the degree is written correctly.  University and campus name are written correctly.  Date of completion/defense (only year and month) is mentioned. | 0.5 |
| CLO1 | **UML** | Use case Diagram and Use cases [5]  Sequence Diagram (in case of OOAD)/ Activity Diagram [3]  Class Diagram (in case of OOAD) / API Diagram [3]  Visual Quality [4] | 1.5 |
| CLO5 | **Style and formatting issues** | Consistent font is used throughout the thesis. [2]  Page numbering is done appropriately. [2]  Figures are readable and are aligned correctly. [2]  Captions for tables, figures, and equations use consistent format and style. [2]  Table of Contents/Figures/Tables follow proper indentation/styling. [2]  Chapter name and numbering follows consistent style. [2]  Paragraphs are not less than 5 lines each. [2]  There are no images without text on any page. [2]  Spacing is uniform throughout the document. [2]  Images and Tables Quality are in at least 300 dpi or in vector format. [2] | 2.0 |
| CLO5 | **Chapters** | Introduction [3]  Literature Review [3]  Methodology/Proposed Solution/ Implementation (Include Code snippets that explains the solution only), Equations are properly written, described, and cited. [3]  Iterations [4]  Results [3]  Discussions (How was the problem addressed.) [4]  Conclusion + Future Work [2]  References + Appendix (For Code and Relevant data) [3] | 2.5 |
| CLO5 | **References** | There are at least 25 references. [2]  IEEE style [2]  Complete- Author Name, Title, Venue, Year (Also in case of websites or other resources) [2]  URL(Optional) [2]  All the references are cited in the body of text. [2] | 1.0 |
| CLO5 | **General** | Report length = 30-35 pages [5]  Latex sources file [5]  Grammar and Punctuation [10] | 2.0 |

Points (out of 100) of this evaluation are as (Jury 10)