

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |              |   |                                                                                         |                   |                                        |  |  |  |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--------------|---|-----------------------------------------------------------------------------------------|-------------------|----------------------------------------|--|--|--|
| 1.  | Name of Course                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |              |   | Civil Engineering Thesis I                                                              |                   |                                        |  |  |  |
| 2.  | Course Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |              |   | JCET4372                                                                                |                   |                                        |  |  |  |
|     | JCET= the first alphabet identify the faculty within which the subject is offered., JCET= the remaining three alphabet identify the course that offers the subject, 4372 = the first digit identify level of study; in this case undergraduate level, 4372= the second and third digits identify subject identity and 4372 = the fourth digit identify credit value or credit hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |              |   |                                                                                         |                   |                                        |  |  |  |
| 3.  | Name(s) of academic staff                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |              |   | To be Assigned                                                                          |                   |                                        |  |  |  |
| 4.  | Rationale for the inclusion of the course/module in the programme                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |              |   | Student’s ability to carry out the project thesis and to present at the end of semester |                   |                                        |  |  |  |
| 5.  | Semester and Year offered                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |              |   | 1/4                                                                                     |                   |                                        |  |  |  |
| 6.  | Total Student Learning Time (SLT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  | Face to Face |   |                                                                                         |                   | Total Guided and Independent Learning  |  |  |  |
|     | L = Lecture      T = Tutorial<br>P = Practical      S=Studio Works<br>O= Others                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  | L            | T | P/S                                                                                     | O<br>Consultation | Independent Study(IS)= 14<br>Total =84 |  |  |  |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  | 14           | - | 56                                                                                      | 14                |                                        |  |  |  |
| 7.  | Credit Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |              |   | 2.0                                                                                     |                   |                                        |  |  |  |
|     | Consultation ( 1hour per week x 14 weeks)<br>Practical ( 4 hours per week x 14 weeks )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |  |              |   |                                                                                         |                   |                                        |  |  |  |
| 8.  | Prerequisite (if any)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |              |   | None                                                                                    |                   |                                        |  |  |  |
| 9.  | <b>Course Objectives</b><br>1. The objective of this course is to equip the students with research skills and communication skills at the of the project study.<br><br><b>Course Learning Outcomes (CLO)</b><br>At the end of the semester students should be able to:<br><br>CLO1: To understand and undertake in research, design any projects in the area of student interest relevant to Civil Engineering.<br>CLO2: To understand statements of facts and defend such statement for the learned audience.<br>CLO3: To involved any carry out experimental study project work methodology relevant for pursuing higher degrees or similar vocations that demands it.<br>CLO4: To produce a report on the relevant work which they are carried out.                                                                                                                                                           |  |  |              |   |                                                                                         |                   |                                        |  |  |  |
| 10. | <b>Transferable Skills:</b><br>This course is expected the development of the following transferable skills:<br>a) Self-management – an ability to manage time and task<br>b) Learning skills <ul style="list-style-type: none"><li>An ability to learn both independently and co—operatively;</li><li>An ability to use library skills, to find and organize information ;</li><li>An ability to use a wide range of academic skills (research, analysis, synthesis etc.);</li><li>An ability to identify and evaluate personal learning strategies.</li></ul> c) Teamwork <ul style="list-style-type: none"><li>An ability to take responsibility and carry out agreed task;</li><li>An ability to take initiative and lead other;</li><li>An ability to identify and evaluate personal learning strategy.</li></ul> d) Problem solving <ul style="list-style-type: none"><li>An ability to analyse;</li></ul> |  |  |              |   |                                                                                         |                   |                                        |  |  |  |

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |     |              |     |        |     |       |  |                     |                    |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----|--------------|-----|--------|-----|-------|--|---------------------|--------------------|
|                     | <ul style="list-style-type: none"> <li>▪ An ability to think laterally about a problem;</li> <li>▪ An ability to identify strategy options;</li> <li>▪ An ability to solve the problems</li> </ul> <p>e) Information technologies</p> <p>An ability to use specialist software where relevant to the discipline.</p>                                                                                                                                                                                                                                                                                                                                                                                      |              |     |              |     |        |     |       |  |                     |                    |
| 11.                 | <p><b>Teaching-learning and assessment strategy</b></p> <p>A variety of leaching strategies are used throughout the course, including the following:</p> <ul style="list-style-type: none"> <li>• Classroom Lessons; Lecturer and power point presentations</li> <li>• Tutorial Session;</li> <li>• Student-Lecturer Discussion</li> <li>• Collaborative and Co-operative learn;</li> <li>• Independent study.</li> </ul> <p><b>Assessment:</b></p> <table> <tr> <td>Consultation</td><td>10%</td></tr> <tr> <td>Presentation</td><td>20%</td></tr> <tr> <td>Report</td><td>70%</td></tr> <tr> <td colspan="2"><hr/></td></tr> <tr> <td><b><u>Total</u></b></td><td><b><u>100%</u></b></td></tr> </table> | Consultation | 10% | Presentation | 20% | Report | 70% | <hr/> |  | <b><u>Total</u></b> | <b><u>100%</u></b> |
| Consultation        | 10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |     |              |     |        |     |       |  |                     |                    |
| Presentation        | 20%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |     |              |     |        |     |       |  |                     |                    |
| Report              | 70%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |     |              |     |        |     |       |  |                     |                    |
| <hr/>               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |     |              |     |        |     |       |  |                     |                    |
| <b><u>Total</u></b> | <b><u>100%</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |              |     |              |     |        |     |       |  |                     |                    |
| 12.                 | <p><b>Synopsis:</b></p> <p>Students would be given a wide selection of thesis titles of their interest related to the course they take. Each student would be assigned a thesis title and work independently under the supervision of an academic staff</p>                                                                                                                                                                                                                                                                                                                                                                                                                                               |              |     |              |     |        |     |       |  |                     |                    |
| 13.                 | <p><b>Mode of Delivery:</b></p> <p>Supervision session.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              |     |              |     |        |     |       |  |                     |                    |

|     |                                                                                                                                             |                                         |                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                    |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14. | <b>Performance Criteria :</b>                                                                                                               |                                         |                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                    |
|     | CLO-PLO                                                                                                                                     | Assessment Tool                         | 1                                                                                                                                                                                                                                                                         | 2                                                                                                                                                                                                                                                                         | 3                                                                                                                                                                                                                                                                                 | 4                                                                                                                                                                                                                                                                         | 5                                                                                                                                                                                                                                                                                  |
|     | Marks                                                                                                                                       |                                         | 0-39                                                                                                                                                                                                                                                                      | 40-49                                                                                                                                                                                                                                                                     | 50-59                                                                                                                                                                                                                                                                             | 60-74                                                                                                                                                                                                                                                                     | 75-100                                                                                                                                                                                                                                                                             |
|     | Grade                                                                                                                                       |                                         | (F)                                                                                                                                                                                                                                                                       | (D,D+)                                                                                                                                                                                                                                                                    | (C-,C,C+)                                                                                                                                                                                                                                                                         | (B-,B,B+)                                                                                                                                                                                                                                                                 | (A-,A,A+)                                                                                                                                                                                                                                                                          |
|     | <b>CLO1:</b><br>To understand and undertake in research, design any projects in the area of student interest relevant to Civil Engineering. | <b>Consultation Presentation Report</b> | <b>Fail to:</b> <ul style="list-style-type: none"> <li>• Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> | <b>Poor to:</b> <ul style="list-style-type: none"> <li>• Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> | <b>Satisfactory to:</b> <ul style="list-style-type: none"> <li>• Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> | <b>Good to:</b> <ul style="list-style-type: none"> <li>• Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> | <b>Excellent to:</b> <ul style="list-style-type: none"> <li>• To: Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> |

|  |                                                                                                                                                                      |                                         |                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                    |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>CLO2:</b><br><br>To understand statements of facts and defend such statement for the learned audience.                                                            | <b>Consultation Presentation Report</b> | <b>Fail to:</b> <ul style="list-style-type: none"> <li>• Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> | <b>Poor to:</b> <ul style="list-style-type: none"> <li>• Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> | <b>Satisfactory to:</b> <ul style="list-style-type: none"> <li>• Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> | <b>Good to:</b> <ul style="list-style-type: none"> <li>• Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> | <b>Excellent to:</b> <ul style="list-style-type: none"> <li>• To: Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> |
|  | <b>CLO3:</b><br><br>To involved any carry out experimental study project work methodology relevant for pursuing higher degrees or similar vocations that demands it. | <b>Consultation Presentation Report</b> | <b>Fail to:</b> <ul style="list-style-type: none"> <li>• Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> | <b>Poor to:</b> <ul style="list-style-type: none"> <li>• Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> | <b>Satisfactory to:</b> <ul style="list-style-type: none"> <li>• Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> | <b>Good to:</b> <ul style="list-style-type: none"> <li>• Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time</li> </ul>          | <b>Excellent to:</b> <ul style="list-style-type: none"> <li>• To: Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> |

|  |                                                                                          |                                         |                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                    |
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|  |                                                                                          |                                         |                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                   | and task                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                    |
|  | <b>CLO4:</b><br><br>To produce a report on the relevant work which they are carried out. | <b>Consultation Presentation Report</b> | <b>Fail to:</b> <ul style="list-style-type: none"> <li>• Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> | <b>Poor to:</b> <ul style="list-style-type: none"> <li>• Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> | <b>Satisfactory to:</b> <ul style="list-style-type: none"> <li>• Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> | <b>Good to:</b> <ul style="list-style-type: none"> <li>• Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> | <b>Excellent to:</b> <ul style="list-style-type: none"> <li>• To: Learn both independent and cooperatively</li> <li>• Use library skills, to find and organize information</li> <li>• Take responsibility and carry out laboratory test</li> <li>• Manage time and task</li> </ul> |

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|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| 15.                                                                                            | <b>Mapping of the Programme Objectives to the Programme Learning Outcomes</b>                                                                                                                                                                 |                                                                                      |                                                                                     |                                                                                                  |                                                                                     |                                                                                                                                                                                   |                                                                                                                |                                                                |                                                                                                    |                                                                                                                     |                                               |
| <div> <div>Programme Learning Outcomes (PLO)</div> <div>Programme Objectives (PO)</div> </div> | <b>PLO1:</b> Ability to acquire and apply knowledge of science and engineering fundamentals;                                                                                                                                                  | <b>PLO2:</b> Acquired in-depth technical competence in civil engineering discipline; | <b>PLO3:</b> Ability to undertake problem identification, formulation and solution; | <b>PLO4:</b> Ability to utilize systems approach to design and evaluate operational performance; | <b>PLO5:</b> Understanding of the principles of design for sustainable development; | <b>PLO6:</b> Understanding of professional ethics, Islamic values, social, cultural, global and environmental responsibilities of a professional engineer and commitment to them; | <b>PLO7:</b> Ability to communicate effectively, not only with engineers but also with the community at large; | <b>PLO8:</b> ability to function effectively as an individual; | <b>PLO9:</b> Ability to function effectively in group with the capacity to be a leader or manager; | <b>PLO10:</b> Recognizing the need to undertake lifelong learning, and possessing /acquiring the capacity to do so; | <b>PLO11:</b> ability to become Entrepreneur; |
|                                                                                                | <b>PEO1:</b> To produce graduates with proficient knowledge and competency in various areas in Civil/Electrical/Mechanical Engineering                                                                                                        | ✓                                                                                    | ✓                                                                                   | ✓                                                                                                |                                                                                     |                                                                                                                                                                                   |                                                                                                                |                                                                |                                                                                                    |                                                                                                                     |                                               |
|                                                                                                | <b>PEO2:</b> To produce graduates with professional, generic attributes to meet the present and future global demands.                                                                                                                        |                                                                                      |                                                                                     | ✓                                                                                                | ✓                                                                                   | ✓                                                                                                                                                                                 |                                                                                                                |                                                                | ✓                                                                                                  | ✓                                                                                                                   |                                               |
|                                                                                                | <b>PEO3:</b> To produce graduates with Islamic humanistic values and reinvention skills to meet the requirement of a dynamic environment. These skills include Civil Intelligence, Moral Intelligence, Self-Reliance and Communication Skills |                                                                                      |                                                                                     |                                                                                                  |                                                                                     |                                                                                                                                                                                   | ✓                                                                                                              | ✓                                                              | ✓                                                                                                  |                                                                                                                     | ✓                                             |

|                                                                                                    |                                                                                                                                                                     |                                                                                      |                                                                                     |                                                                                                  |                                                                                     |                                                                                                                                                                                   |                                                                                                                |                                                                |                                                                                                    |                                                                                                                     |                                               |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| 16.                                                                                                | <b>Mapping of the course Learning Outcome to the Programme Outcome</b>                                                                                              |                                                                                      |                                                                                     |                                                                                                  |                                                                                     |                                                                                                                                                                                   |                                                                                                                |                                                                |                                                                                                    |                                                                                                                     |                                               |
| <div> <div>Programme Learning Outcomes (PLO)</div> <div>Course Learning Outcome (CLO)</div> </div> | <b>PLO1:</b> Ability to acquire and apply knowledge of science and engineering fundamentals;                                                                        | <b>PLO2:</b> Acquired in-depth technical competence in civil engineering discipline; | <b>PLO3:</b> Ability to undertake problem identification, formulation and solution; | <b>PLO4:</b> Ability to utilise systems approach to design and evaluate operational performance; | <b>PLO5:</b> Understanding of the principles of design for sustainable development; | <b>PLO6:</b> Understanding of professional ethics, Islamic values, social, cultural, global and environmental responsibilities of a professional engineer and commitment to them; | <b>PLO7:</b> Ability to communicate effectively, not only with engineers but also with the community at large; | <b>PLO8:</b> ability to function effectively as an individual; | <b>PLO9:</b> Ability to function effectively in group with the capacity to be a leader or manager; | <b>PLO10:</b> Recognising the need to undertake lifelong learning, and possessing /acquiring the capacity to do so; | <b>PLO11:</b> ability to become Entrepreneur; |
|                                                                                                    | <b>CLO1:</b><br><br>To understand and undertake in research, design any projects in the area of student interest relevant to Civil Engineering.                     | ✓                                                                                    |                                                                                     |                                                                                                  |                                                                                     |                                                                                                                                                                                   |                                                                                                                |                                                                |                                                                                                    |                                                                                                                     |                                               |
|                                                                                                    | <b>CLO2:</b><br><br>To understand statements of facts and defend such statement for the learned audience.                                                           | ✓                                                                                    |                                                                                     |                                                                                                  |                                                                                     |                                                                                                                                                                                   |                                                                                                                |                                                                |                                                                                                    |                                                                                                                     |                                               |
|                                                                                                    | <b>CLO3:</b><br><br>To involved any carry out experimental study project work methodology relevant for pursuing higher degrees or similar vocations that demands it | ✓                                                                                    | ✓                                                                                   | ✓                                                                                                |                                                                                     |                                                                                                                                                                                   |                                                                                                                |                                                                |                                                                                                    |                                                                                                                     |                                               |

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|  | <b>CLO4:</b><br><br>To produce a report on the relevant work which they are carried out. | ✓ | ✓ | ✓ |  |  |  |  |  |  |  |  |
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|         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |    |    |    |       |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----|----|----|-------|
| 17.     | Content outline of the course/module and the SLT per topic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |    |    |    |       |
|         | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | SLT (Hour) |    |    |    |       |
|         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | L          | C  | P  | IS | Total |
| Topic 1 | <ul style="list-style-type: none"><li>Topics are carefully selected by the Departmental Head and or his committee so that reasonable results could be obtained within the time stipulated and the resources available. Individual study is encouraged though in exceptional cases, two or more students may collaborate (for example, where the approved topics require co-operative effort to see reasonable progress within the time and resources available) but each student must submit an individual report.</li><li>Co-supervisor could be from outside the Department or outside bodies and agencies.</li><li>The topics should be selected before the end of year 3. The course 'Experimental Techniques' will form and exposition and presents the opportunity for discussion of some types of project.</li><li>A study/investigation project may be undertaken through laboratory experimental investigations. Other areas include case histories, investigation, computational and analytical studies. In these cases, data obtained from “secondary” recourses such as published report are preferably be treated with further analysis or interpretation before being included in the thesis.</li><li>The presentation of the thesis include objective, literature review , research methodology , expected results or product and project schedule</li><li>Specific and detailed requirements of the thesis submission, assessment and format are as according to Departmental Regulations.</li><li>The report would be assigned together with the oral presentation by the student at the end of the semester</li></ul> | -          | 14 | 56 | 14 | 126   |
|         | Total (Hour)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -          | 14 | 56 | 14 | 84    |
| 18.     | Main references supporting the course                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |    |    |    |       |
|         | All materials will be available to the students in the library                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |    |    |    |       |
|         | Additional references supporting the course                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |    |    |    |       |
|         | All materials will be available to the students in the library                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |    |    |    |       |
| 19.     | Other additional information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |    |    |    |       |
|         | All materials will be available to the students in the library.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |    |    |    |       |