DE6102 ENGINEERING PROJECT

Level 6 Credits 15

LEARNING TIME

<table>
<thead>
<tr>
<th>Indicative Directed Hours</th>
<th>Self-Directed Hours</th>
<th>Total Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>110</td>
<td>150</td>
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</tbody>
</table>

RECOMMENDED PRE-REQUISITE

DE4103 Technical Literacy and 45 credits Level 5

Civil

DE4201 Materials (Civil)
DE5207 Geotechnical Engineering 1

Mechanical

DE4301 Engineering CAD

Electrical

DE6101 Engineering Management

RECOMMENDED CO-REQUISITE

Nil

AIM/PURPOSE

To apply knowledge and problem-solving skills to plan and complete an engineering project relevant to the discipline strand studied (civil, mechanical, electrical or electronics) to accepted practice and standards from a given specification.

LEARNING OUTCOMES

On successful completion of this course, the student should be able to:

1. Develop preliminary design(s), based on a given specification, for an engineering project relevant to their discipline strand (Civil, Mechanical, Electrical or Electronics)
2. Develop a plan or design parameters considering functionality, safety, environmental, cultural and ethical issues
3. Undertake well-defined planning and produce as project output
4. Produce supporting documentation relevant to project output
5. Evaluate compliance of the project output against specification
6. Present findings to an audience in a professional manner
INDICATIVE CONTENT

Mechanical

- Design process and methodology, design briefs, concepts, stakeholder requirements, alternatives, evaluation, decision making, design standards.
- Producing a detailed design, design evaluation and review, identify and apply relevant design codes.
- Material selection, determining and applying criteria, considering alternatives, selection, specification.
- Design reports, documenting the design, calculations, drawings, specifications, writing a report, design presentations.

Civil

- Research options for planning and construction to meet specifications of a selected civil engineering project.
- Identification and application of relevant standards basic design commissioning methodology, detailed plan, safety requirements, environmental impact.
- A written structured report that includes executive summary, aim, background, preliminary design calculation, drawings and specification, discussion, references.
- Presentation of an overview of the project to peers and/or industry representatives.

Electrical/Engineering

- Research options for design to meet specifications.
- Detailed design or plan, construct or simulated design and commission, identify and apply relevant standards.
- Document the design, calculations, drawings, specification, write a report.
- Present an overview of the project to peers and industry representatives.
ASSESSMENT

<table>
<thead>
<tr>
<th>Assessment Type</th>
<th>Weighting</th>
<th>Outcomes Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project and presentation</td>
<td>100%</td>
<td>1, 2, 3, 4, 5, 6</td>
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</tbody>
</table>

* See Section 3.5 of Regulations

IPENZ TECHNICIAN ATTRIBUTES

The International Engineering Attributes are developed across the entire learning journey of NZDE.

This Project enables evidence that the student exhibits the attributes expected of the graduate. Evidence of these attributes is to be collected as part of consistency of outcomes.

<table>
<thead>
<tr>
<th>IEA Graduate Attributes</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Engineering Knowledge</td>
<td>A</td>
</tr>
<tr>
<td>2. Problem Solving</td>
<td>A</td>
</tr>
<tr>
<td>3. Design/Development of Solutions</td>
<td>A</td>
</tr>
<tr>
<td>4. Investigation</td>
<td>A</td>
</tr>
<tr>
<td>5. Modern Tool Usage</td>
<td>A</td>
</tr>
<tr>
<td>6. The Engineer and Society</td>
<td>A</td>
</tr>
<tr>
<td>7. Environment and Sustainability</td>
<td>✓</td>
</tr>
<tr>
<td>8. Ethics</td>
<td>A</td>
</tr>
<tr>
<td>9. Individual and Team Work</td>
<td>✓</td>
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<tr>
<td>10. Communication</td>
<td>A</td>
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<tr>
<td>11. Project Management and Finance</td>
<td>A</td>
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<tr>
<td>12. Lifelong Learning</td>
<td>A</td>
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</table>

Key:

✓ Course contributes to attribute  A Attribute is assessed and evidence is collected