Learning Outcomes:

The subject aims to introduce students to some basic skills of higher mathematics. The emphasis will be on application of mathematical methods to solving practical problems.

Upon satisfactory completion of the subject, students are expected to be able to:
(i) apply mathematical reasoning to analyse essential features of different problems;
(ii) extend their knowledge of mathematical techniques and adapt known solutions to different situations;
(iii) search for useful information and use statistical tables in solving statistical problems in the context of engineering;
(iv) undertake the formulation of mathematical problems through continuous self-learning.

Syllabus Content:

Linear Algebra:
Matrices and determinants; Elementary algebra of matrices, Systems of linear equations.

Statistics:
Descriptive statistics; Frequency distribution; Mean and standard deviation; Probability; Discrete and continuous random variables; Normal distribution; Sampling; Hypotheses testing and estimations.

Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

Assessment (assessment of student performance resulting from learning tasks):

<table>
<thead>
<tr>
<th>Component</th>
<th>Weightage</th>
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<tbody>
<tr>
<td>Continuous Assessment</td>
<td>40%</td>
</tr>
<tr>
<td>Examination</td>
<td>60%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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</tbody>
</table>

To ensure that students learn and reflect continuously, Continuous Assessment is an important element and students are required to obtain Grade D or above in both the Continuous Assessment and the Examination components. The continuous assessment comprises of assignments, in-class quizzes and tests. The assignments are used to assist the students to reflect and review on their progress. The end-of-semester examination is used to assess the knowledge acquired by the students and their ability to apply and extend such knowledge.

Reading List:

Textbooks and Reference Books: