## Module code
SP-3407

## Module Title
Introduction to Renewable Energy

## Degree/Diploma
Bachelor of Science (Applied Physics)

## Type of Module
Breadth

## Modular Credits
4

<table>
<thead>
<tr>
<th>Total student workload</th>
<th>8 hours/week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact hours</td>
<td>4 hours/week</td>
</tr>
</tbody>
</table>

## Prerequisite
None

## Anti-requisite
None

## Aims
The module examines the availability and distribution of various renewable energy resources such as solar thermal, photovoltaic, wind, tidal, ocean, hydroelectric, fuel cells, biomass and others. The module will enable the student to evaluate renewable energy resources in a well-informed way.

## Learning Outcomes:
On successful completion of this module, a student will be expected to be able to:

<table>
<thead>
<tr>
<th>Lower order: 40%</th>
<th>Middle order: 40%</th>
<th>Higher order: 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe renewable energy resources</td>
<td>Assess and evaluate the performance of renewable energy resources</td>
<td>Appraise, recommend and justify renewable energy resources</td>
</tr>
<tr>
<td>Search information sources</td>
<td>Investigate, analyse and interpret information related to renewable energy</td>
<td>Present information and arguments for justification in written communications</td>
</tr>
</tbody>
</table>

## Module Contents
- The sun, measurements and estimation of solar radiation,
- solar thermal energy,
- photovoltaic energy,
- wind energy,
- ocean and tidal energy,
- geothermal energy,
- fuel cells,
- biomass,
- hydroelectric,
- energy storage,
- evaluation of energy resources,
- fossil fuels,
- environmental effects of renewable and non-renewable energies.

## Assessment

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Formative assessment</th>
<th>Online multiple choice questions and feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summative assessment</td>
<td>Examination: 60%</td>
<td>Coursework: 40%</td>
</tr>
<tr>
<td></td>
<td>- 2 written assignments (20% each)</td>
<td></td>
</tr>
</tbody>
</table>