SUBJECT DESCRIPTION FORM

Subject Title: Rehabilitation Engineering

Subject Code: HTI5134

Credit Value: 3

Date of Submission: Mar 2009

Responsible Staff and Department(s): Dr. Eric Tam / Dr. Aaron Leung (HTI)

Pre-requisites: Nil

Recommended Background Knowledge: Knowledge of basic engineering/physics or Human anatomy and Physiology

Exclusions: Nil

Learning Approach:

There will be lectures, seminar as well as laboratory sessions.

Contact Hours:

<table>
<thead>
<tr>
<th>Activities</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures/tutorial/Seminar</td>
<td>36</td>
</tr>
<tr>
<td>Laboratories</td>
<td>6</td>
</tr>
<tr>
<td>Sub-total</td>
<td>42</td>
</tr>
</tbody>
</table>

Independent Study Hours:

<table>
<thead>
<tr>
<th>Activities</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-study</td>
<td>60</td>
</tr>
<tr>
<td>Assignments</td>
<td>25</td>
</tr>
<tr>
<td>Laboratory Reports</td>
<td>15</td>
</tr>
<tr>
<td>Sub-total</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>142</td>
</tr>
</tbody>
</table>

Assessment (types & weighting):

Course Work (100%)

<table>
<thead>
<tr>
<th>Activities</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments, lab reports and projects</td>
<td>70%</td>
</tr>
<tr>
<td>Quiz</td>
<td>30%</td>
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</tbody>
</table>

Learning Outcomes:

This subject aims to provide students a good background on current engineering solutions and their limitations for persons who suffer from physical or sensory impairments. This knowledge will enhance the students’ ability to provide quality of care to the people with disabilities thorough the provision of appropriate rehabilitation engineering devices. On successful completion of this subject, the student will be able to:

- Understand and apply fundamental knowledge of engineering in rehabilitation
- Apply analytical skills to assess and evaluate the need of the end-user
- Conduct patient/technology evaluation via the use of modern instrumentation
- Develop self-learning initiatives and integrate learned knowledge for problem solving
- Apply assistive technology to help individuals with disabilities
**Syllabus:**
This subject is concerned with the application of engineering solutions for people with disabilities. Rehabilitation is multi-disciplinary in nature and the team approach is the preferred clinical approach in the provision of rehabilitation engineering devices. The ideal team consists of medical and health professionals and rehabilitation engineers. This subject is appropriate for professionals concerned with rehabilitation.

The contents of this subject covers:
- Augmentative and Alternative Communication Devices
- Sensory Aids for Hearing and Visual Impairments
- Seating and Mobility Devices
- Prosthetics and Orthotics Technology
- Evaluation and Training Technology
- CAD/CAM Application in Rehabilitation
- Human-Machine Interface and Universal Design
- Emerging Technologies

**References:**