

## Subject Description Form

| Subject Code                                  | BME5158  |   |   |   |  |  |                               |                                    |  |  |  |  |  |   |   |   |   |  |  |                 |   |   |   |   |  |  |                  |   |   |   |   |  |  |
|---|--|---|---|---|--|--|-------------------------------|------------------------------------|--|--|--|--|--|---|---|---|---|--|--|-----------------|---|---|---|---|--|--|------------------|---|---|---|---|--|--|
| Subject Title                                 | Advanced Topics in Health Technology   |   |   |   |  |  |                               |                                    |  |  |  |  |  |   |   |   |   |  |  |                 |   |   |   |   |  |  |                  |   |   |   |   |  |  |
| Credit Value                                  | 3  |   |   |   |  |  |                               |                                    |  |  |  |  |  |   |   |   |   |  |  |                 |   |   |   |   |  |  |                  |   |   |   |   |  |  |
| Level   | 5  |   |   |   |  |  |                               |                                    |  |  |  |  |  |   |   |   |   |  |  |                 |   |   |   |   |  |  |                  |   |   |   |   |  |  |
| Pre-requisite /<br>Co-requisite/<br>Exclusion | Nil  |   |   |   |  |  |                               |                                    |  |  |  |  |  |   |   |   |   |  |  |                 |   |   |   |   |  |  |                  |   |   |   |   |  |  |
| Objectives                                    | To enable students to explore specific scientific and technological areas of their interest that are related to their professional discipline or personal development.   |   |   |   |  |  |                               |                                    |  |  |  |  |  |   |   |   |   |  |  |                 |   |   |   |   |  |  |                  |   |   |   |   |  |  |
| Intended Learning Outcomes                    | <p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> <li>a. investigate further a topic in biomedical engineering, radiology, radiotherapy, or medical laboratory science, that is worth pursuing</li> <li>b. demonstrate the ability for in-depth discussion in the area of the chosen topic</li> <li>c. integrate the area of study with professional practice</li> <li>d. critically appraise applications of the topic to professional practice</li> </ol>  |   |   |   |  |  |                               |                                    |  |  |  |  |  |   |   |   |   |  |  |                 |   |   |   |   |  |  |                  |   |   |   |   |  |  |
| Subject Synopsis/<br>Indicative Syllabus      | The student will choose a topic of his/her interest in biomedical engineering / medical imaging and radiation science / medical laboratory science and discuss with a potential supervisor. When the supervisor is confirmed, the student and supervisor will establish a tailored course of study that adheres to the academic workload and assessment criteria specified for the student.  |   |   |   |  |  |                               |                                    |  |  |  |  |  |   |   |   |   |  |  |                 |   |   |   |   |  |  |                  |   |   |   |   |  |  |
| Teaching/Learning Methodology                 | <p>Students will be required to undertake guided independent study in depth on a topic mutually agreed upon with the supervisor. The student will read widely on the scientific issues and, in specific areas, also in depth. Students may be arranged into small groups and share their information in presentations.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="text-align: center;">Teaching/learning methodology</th> <th colspan="6" style="text-align: center;">Intended subject learning outcomes</th> </tr> <tr> <th style="text-align: center;">a</th> <th style="text-align: center;">b</th> <th style="text-align: center;">c</th> <th style="text-align: center;">d</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1. Guided study</td> <td style="text-align: center;">√</td> <td style="text-align: center;">√</td> <td style="text-align: center;">√</td> <td style="text-align: center;">√</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">2. Presentations</td> <td style="text-align: center;">√</td> <td style="text-align: center;">√</td> <td style="text-align: center;">√</td> <td style="text-align: center;">√</td> <td></td> <td></td> </tr> </tbody> </table> |   |   |   |  |  | Teaching/learning methodology | Intended subject learning outcomes |  |  |  |  |  | a | b | c | d |  |  | 1. Guided study | √ | √ | √ | √ |  |  | 2. Presentations | √ | √ | √ | √ |  |  |
| Teaching/learning methodology                 | Intended subject learning outcomes   |   |   |   |  |  |                               |                                    |  |  |  |  |  |   |   |   |   |  |  |                 |   |   |   |   |  |  |                  |   |   |   |   |  |  |
|   | a  | b | c | d |  |  |                               |                                    |  |  |  |  |  |   |   |   |   |  |  |                 |   |   |   |   |  |  |                  |   |   |   |   |  |  |
| 1. Guided study                               | √  | √ | √ | √ |  |  |                               |                                    |  |  |  |  |  |   |   |   |   |  |  |                 |   |   |   |   |  |  |                  |   |   |   |   |  |  |
| 2. Presentations                              | √  | √ | √ | √ |  |  |                               |                                    |  |  |  |  |  |   |   |   |   |  |  |                 |   |   |   |   |  |  |                  |   |   |   |   |  |  |

|   |  |             |   |   |   |         |          |
|---|--|-------------|---|---|---|---------|----------|
| Assessment Methods in Alignment with Intended Learning Outcomes | Specific assessment methods/tasks  | % weighting | Intended subject learning outcomes to be assessed |   |   |         |          |
|   |  |             | a   | b | c | d       |          |
|   | 1. Tutorial participation  | 10 %        | √   | √ | √ |         |          |
|   | 2. Presentation  | 60 %        |   | √ | √ | √       |          |
|   | 3. Report  | 30 %        |   |   | √ | √       |          |
| Total   | 100 %  |             |   |   |   |         |          |
|   | <p>Regular tutorials with the student (in small group) will encourage the students to read and think more deeply about the topic.</p> <p>Presentation will allow students to organize his ideas and knowledge and make his thought clear to himself and the audience. It also allows interaction and discussion between the student as a presenter and the audience and this will trigger broader and deeper thoughts into the topic.</p> <p>The report facilitates the integration of and reflection in the topic with professional practice, and enables students to more critically appraise the applications of the topic area to their professional practice independently.</p> |             |   |   |   |         |          |
| Student Study Effort Expected                                   | Class contact:   |             |   |   |   |         |          |
|   | <input type="checkbox"/> Guided Study  |             |   |   |   | 6 Hrs.  |          |
|   | Other student study effort:  |             |   |   |   |         |          |
|   | <input type="checkbox"/> Self-study  |             |   |   |   | 96 Hrs. |          |
|   | <input type="checkbox"/> Assignments and presentations   |             |   |   |   | 40 Hrs. |          |
|   | Total student study effort   |             |   |   |   |         | 142 Hrs. |
| Reading List and References                                     | <p>Brall, Stefan, Richert Anja, Hees, Frank. Self-directed learning: knowledge modules for the effective learning, Aachen, Germany : Centre of Learning and Knowledge Management and Dept. of Computer Science in Mechanical Engineering, 2007.</p> <p>Schunk D.H., Simmerman B.J. Motivation and self-regulated learning: theory research and applications. New York, NY: Lawrence Erlbaum Associates, 2008.</p> <p>Harvey V.S., Chickie-Wolfe L.A. Fostering independent learning: practical strategies to promote student success. New York: Guilford Press, 2007.</p> <p>Literature of specific topics can be accessed from the library.</p>                                     |             |   |   |   |         |          |