Subject Description Form

Subject Code	BME31210
Subject Title	**Biomedical Engineering Industrial Internship**
Credit Value	4 Training Credits (Work-Integrated Education: 8 weeks minimum)
Level	3
Prerequisite	BME11108 Biomedical Engineering in Society
Objectives	This subject provides students with practical working experience in the industry and ensure students can function as a beginning staff. Hence, high professional standards are strived for. Initiative, responsibility, teamwork, creative thinking, and problem-solving are emphasized.
Intended Learning Outcomes	a. Five categories of professional training are emphasized: Professional Competency (PC); Professional Development (PD); Inter-Personal Relationship (IR); Communication Skill (CS); and Organization and Management (OM). b. On successful completion of this course, students should be able to: c. Perform in the real working environment of the biomedical engineering discipline in clinical and/or industrial settings (PC & PD); d. Perform confidently in basic project management (OM); e. Work coherently within the working team (PC, PD, IR & CS); f. Communicate effectively professionally with clients (IR & CS); g. Present and interpret accurately, comprehensively, and concisely all matters pertaining to the client's management and in all other way communicate effectively with other professionals (PC & CS); h. Liaise and recommend, based on the concept of a multidisciplinary approach, referrals of clients to and from other industrial/healthcare personnel (IR & CS); i. Document, compile, and interpret relevant in clients' information and/or technological information (PC, PD & OM); j. Synthesize both knowledge and assessment findings to identify short- and long-term approach to solve industrial/clinical problems (PD & OM); k. Plan, prioritize, and implement management programmes with the maximum degree of safety, effectiveness, and efficiency (PC, PD & OM);

	l. execute highly competent organization of time and space within professional practice (PC, PD & OM); m. Implement the principles of investigative methods in the working environment (PC & PD); n. Work according to the ethics of the profession (PC & PD).
Contribution to Programme Outcomes (Refer to Part I Section 10)	▪ Programme Outcome 1: Demonstrate an ability to apply knowledge of mathematics, science, and engineering appropriate to the Biomedical Engineering (BME) discipline. (Practice and Measure) ▪ Programme Outcome 2: Demonstrate an ability to design and conduct BME experiments, as well as to analyze and interpret data. (Practice) ▪ Programme Outcome 3: Demonstrate an ability to design a system, component, or process relevant to BME to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability. (Practice) ▪ Programme Outcome 4: Demonstrate an ability to identify, formulate, and solve BME problems. (Practice) ▪ Programme Outcome 5: Demonstrate an ability to understand the impact of BME solutions in a global and societal context, especially the importance of health, safety, and environmental considerations to both workers and the general public. (Practice and Measure) ▪ Programme Outcome 7: Demonstrate an ability to use the techniques, skills, and modern engineering tools necessary for BME practice. (Practice) ▪ Programme Outcome 9: Demonstrate an ability to function in multi-disciplinary teams. (Practice and Measure) ▪ Programme Outcome 10: Demonstrate an understanding of professional and ethical responsibility. (Practice and Measure) ▪ Programme Outcome 11: Demonstrate an ability to communicate effectively and advise clients, professional colleagues, and other members of the community. (Practice and Measure) ▪ Programme Outcome 12: Demonstrate an ability to recognize the need for, and to engage in life-long learning. (Practice and Measure) ▪ Programme Outcome 13: Demonstrate an understanding of contemporary issues. (Practice and Measure) ▪ Programme Outcome 14: Demonstrate an understanding of entrepreneurship and leadership. (Practice and Measure)
Subject Synopsis/ Indicative Syllabus	The importance of continuing education and applying investigative methods within later professional development is reinforced. The BME industrial training will focus on the student's ability in applying academic knowledge

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<tr><td></td><td>to solve assigned work tasks; learning new engineering tools and techniques; following professional and ethical responsibilities; effectiveness in verbal and written communication as well as participations in team working. Questions and immediate feedback of the student–mentor interaction is an important part of the learning/teaching strategy.</td></tr>
<tr><td>Teaching and Learning Methodology</td><td>Working experience in BME/healthcare industry and presentation.</td></tr>
<tr><td>Assessment Methods in Alignment with Intended Learning Outcomes</td><td>
<table>
<tr><td rowspan="2">Specific assessment methods/tasks</td><td rowspan="2">% weighting</td><td colspan="12">Intended subject learning outcomes to be assessed (Please tick as appropriate)</td></tr>
<tr><td>a</td><td>b</td><td>c</td><td>d</td><td>e</td><td>f</td><td>g</td><td>h</td><td>i</td><td>j</td><td>k</td><td>l</td></tr>
<tr><td>Mentor Evaluation</td><td>75%</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td></tr>
<tr><td>Presentation</td><td>25%</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td></tr>
<tr><td>Total</td><td>100%</td><td colspan="12"></td></tr>
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Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:
Student performance will be assessed based on the 5 categories of professional training mentioned above.</td></tr>
<tr><td rowspan="5">Student Study Effort Expected</td><td>▪ Working in industry</td><td>Minimum 280 Hrs.</td></tr>
<tr><td>▪ Oral presentation</td><td>3 Hrs.</td></tr>
<tr><td>Other student study effort:</td><td></td></tr>
<tr><td>▪ Oral presentation preparation</td><td>6 Hrs.</td></tr>
<tr><td>Total student study effort</td><td>Minimum 289 Hrs.</td></tr>
<tr><td>Reading List and References</td><td colspan="2">Nil</td></tr>
<tr><td>Date of Last Major Revision</td><td colspan="2">30 Nov 2016</td></tr>
<tr><td>Date of Last Minor Revision</td><td colspan="2">3 Sep 2017</td></tr>
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