

CORE OBJECTIVES (BME)

| 1. Biomedical Engineering Fundamentals | Code | ES initials and Date of Assessment | | | |
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| | | G | K | E | C |
| 1.1 Appreciate the role of Biomedical Engineers in healthcare system of Hong Kong such as public / private hospitals, clinics, equipment suppliers / manufacturers, service providers or consultants. | K | | | | |
| 1.2 Acquire Basic Biomedical Engineering knowledge and skills:- <ul style="list-style-type: none"> - Basic anatomy and physiology of human body - Basic instrumentation (electrical, mechanical, chemical aspects, etc.) - Basic theories of biomedical equipment (devices) and their applications - Use of tools and testing equipment - Hazards and safety issues (e.g. electrical hazards, mechanical hazards, biohazards, etc.) - Biomedical Ethics (e.g. investigations involving animal or human subjects) | K | | | | |
| 1.3 Have an understanding to clinical and laboratory environment, use of biomedical equipment in these areas. | K | | | | |
| 1.4 Have an understanding to relevant regulations, standards, code of practice, guidelines, etc. | K | | | | |

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| 2. Engineering Solutions and Design | Code | ES initials and Date of Assessment | | | |
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| | | G | K | E | C |
| <p>2.1 Have experience in identifying and defining a BME problem accurately.</p> <p>Take an active part, probably in a supporting role, in researching, assembling and assessing basic data.</p> <p>Record involvement in your Quarterly Reports and demonstrate the thought/analytical process by which the problem was finally defined.</p> | E | | | | |
| <p>2.2 Gain practical experience in the identification and evaluation of alternative solutions to a problem.</p> <p>Assist in the technical and financial evaluation of alternatives.</p> <p>Have a good working understanding of the design concepts of the projects on which you work, and the effect of any other external constraints on the design principles.</p> <p>Detail in your Quarterly Reports your appreciation of the factors involved in the choice of the adopted solutions.</p> | E | | | | |
| <p>2.3 Have a good working appreciation of the application and limitations of national and international Standards, Codes of Practice, Technical Memoranda, Risk Management theories, etc.</p> <p>List the documents you have used.</p> <p>Discuss their relevance to your work in your Quarterly Reports.</p> | E | | | | |
| <p>2.4 Have a good working understanding of the user requirements, product and/or service specifications.</p> <p>Appreciate the work involved in preparing a specification.</p> | E | | | | |

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| <p>2.5 Produce the solution to a BME problem.</p> <p>Draw together all the relevant data and analytical work under 2.1, 2.2 appropriate to your sector of the industry.</p> <p>Produce your preferred solution with justification for assessment by your supervisor showing how this work contributes to the solution of the problem and identify the major factors on which the solution depends for accuracy or completeness. Bear in mind the importance of safety, quality and ease for testing and maintenance.</p> | E | | | | |
| <p>2.6 Achieve competence by practising in the detailed design and development processes to implement the engineering solutions reached under 2.5.</p> | C | | | | |
| <p>2.7 Acquire experience in the method of information processing used and the technique involved in product and/or service design, experimental work and the laboratory testing and proving of equipment against user requirement.</p> | E | | | | |
| <p>2.8 Documentation</p> <p>Produce documentation on the solution containing diagrams, sketched, charts, etc.</p> <p>Acquire experience in computer aided design where appropriate.</p> | C | | | | |
| <p>2.9 Appreciate the costing of solutions to problems by taking off quantities and building up cost estimates.</p> <p>Present examples to the supervisor for discussion and comment.</p> | E | | | | |
| <p>2.10 System Application and Planning</p> <p>Obtain knowledge and/or experience in the systems of which some products or services are provided by your employer.</p> | K | | | | |

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| 3. Implementation Process | Code | ES initials and Date of Assessment | | | |
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| | | G | K | E | C |
| <p>3.1 BME Design and Production</p> <p>3.1.1 Have a good working understanding of design and production process.</p> <p>Demonstrate your knowledge in a Quarterly Report and discuss with your supervisor.</p> <p>3.1.2 Have a good working understanding of how all parties exercise their duties and responsibilities.</p> <p>Demonstrate your knowledge in a Quarterly Report and discuss with your supervisor.</p> <p>3.1.3 Have a good working understanding of the procedure and keep record for the issue and/or receipt, registration and filing of work instructions and/or drawings and amendments.</p> <p>Gain practical experience of those procedures and demonstrate by reference in your Quarterly Reports.</p> <p>3.1.4 Be able to keep accurate daily record of events and instruction.</p> <p>Keep an up-to-date, accurate daily diary for inspection by the supervisor.</p> <p>3.1.5 Read and co-ordinate drawings and/or implement work instructions by being involved on a day-to-day basis in this process.</p> <p>Demonstrate competence by the quality of your work.</p> | <p>E</p> <p>E</p> <p>E</p> <p>C</p> <p>C</p> | | | | |

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| 3. Implementation Process | Code | ES initials and Date of Assessment | | | |
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| | | G | K | E | C |
| <p>3.2 Procurement, Manufacture, Quality Assurance and Testing</p> <p>3.2.1 Have Experience of production methods, planning, quality assurance and control methods, progress methods and the associated documentation from the procurement of raw materials and/or the components of a system through production or site assembly to testing of final product, the component parts of a system and/or the complete system.</p> <p>The context may vary depending upon the business nature of your employer.</p> | E | | | | |
| <p>3.3 Installation, Commissioning, Operating & Maintenance</p> <p>3.3.1 Obtain knowledge and experience in these activities.</p> <p>3.3.2 Through working experience be familiar with works test procedures for major plants and/or product, and able to appraise the information contained in a test report.</p> <p>Describe your understanding in the Quarterly Report and correlate your finding with the specification clauses.</p> | E | | | | |
| <p>3.3.3 Be familiar with handling, assemble and installation of equipment and plants on site, with emphasis on control of workmanship and safety.</p> | E | | | | |

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| 4. Biomedical Engineering Administration, Management and Supporting Functions | Code | ES initials and Date of Assessment | | | |
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| | | G | K | E | C |
| 4.1 BME Project Management 4.1.1 Be able to plan and schedule the resources and activities involved in a project. The size of which depends on the situation. 4.1.2 Be able to measure the progress against the schedule and make necessary amendment to the original schedule as required. Have a good working and appreciate of the importance of and practise in time management. | C C | | | | |
| 4.2 Material and Service Procurement 4.2.1 Be able to specify the material or service requirements, with standards, technical and commercial terms as appropriate. 4.2.2 Be able to appreciate procurement considerations and procedures for materials, products and services. 4.2.3 Be able to measure and verify the quality of material and service. | C C C | | | | |
| 4.3 Product Liability and Servicing 4.3.1 Have understanding in legal liability, local and foreign legislations in relation to the product or service involved. 4.3.2 Have appreciation of spare parts and service support, maintenance arrangement, product life. 4.3.3 Have appreciation of defect monitoring, documentation and feedback to product design and production engineering. 4.3.4 Have appreciation of safety case investigation, following up action and recalls. | K E E E | | | | |