

# FACULTY OF ENGINEERING

## DEPARTMENT OF DESIGN, MANUFACTURING AND ENGINEERING MANAGEMENT

### SPORTS DESIGN ENGINEERING

Master of Engineering in Sports Design Engineering  
Bachelor of Engineering with Honours in Sports Design Engineering  
Bachelor of Engineering in Sports Design Engineering  
Diploma of Higher Education in Sports Design Engineering  
Certificate of Higher Education in Sports Design Engineering

*These regulations are to be read in conjunction with [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.](#)*

#### Mode of Study

1. The programmes are available by full-time study only.

#### Curriculum

2. **First Year** - All students shall undertake modules amounting to 120 credits as follows:

#### Compulsory Modules

| Module Code | Module Title                                          | Level | Credits |
|-------------|-------------------------------------------------------|-------|---------|
| DM100       | Design 1                                              | 1     | 20      |
| DM101       | Integrating Studies 1                                 | 1     | 20      |
| DM102       | Introduction to Production Engineering and Management | 1     | 20      |
| DM103       | Technology Concepts                                   | 1     | 20      |
| BE100       | Anatomy and Physiology for Biomedical Engineers       | 1     | 20      |
| MM115       | Mathematics 1D                                        | 1     | 20      |

3. **Second Year** - All students shall undertake modules amounting to 120 credits as follows:

#### Compulsory Modules

| Module Code | Module Title            | Level | Credits |
|-------------|-------------------------|-------|---------|
| BE209       | Sports Biomechanics     | 2     | 20      |
| DM200       | Design 2                | 2     | 20      |
| DM204       | Integrating Studies 2   | 2     | 20      |
| DM205       | Production Techniques 1 | 2     | 20      |
| DM206       | Sports Engineering      | 2     | 20      |

|  |                    |   |    |
|--|--------------------|---|----|
|  | Elective Module(s) | 1 | 20 |
|--|--------------------|---|----|

4. **Third Year** - All students shall undertake modules amounting to 120 credits as follows:

**Compulsory Modules**

| Module Code | Module Title                          | Level | Credits |
|-------------|---------------------------------------|-------|---------|
| B1225       | Physiology of Aerobic Exercise        | 2     | 20      |
| DM303       | Engineering Design                    | 3     | 20      |
| DM306       | Product Development                   | 3     | 20      |
| DM312       | Mechatronic Design and Applications   | 3     | 10      |
| DM313       | Multidisciplinary Integrating Project | 3     | 10      |
| DM314       | Individual Integrating Project        | 3     | 10      |
| DM315       | Mechatronics: Product Programming     | 3     | 10      |

**Optional Modules**

20 credits at Level 3 or 4 chosen from the list below, or such other modules as approved by the Year Adviser.

| Module Code | Module Title                         | Level | Credits |
|-------------|--------------------------------------|-------|---------|
| DM300       | Design Emotion and Experience        | 3     | 20      |
| DM305       | Innovation Management                | 3     | 20      |
| DM307       | Production and Operations Management | 3     | 20      |
| Various     | Vertically Integrated Project        | 3     | 10      |
| DM400       | Advanced Design Methods              | 4     | 20      |

Not all optional modules on this list may be available in each academic year.

5. **Fourth Year** - All students shall undertake modules amounting to 120 credits as follows:

**Compulsory Modules**

| Module Code | Module Title                                   | Level | Credits |
|-------------|------------------------------------------------|-------|---------|
| DM402       | Individual Project 1                           | 4     | 40      |
| DM403       | Industrial Group Project 1                     | 4     | 20      |
| BE431       | Rehabilitation Technology                      | 4     | 10      |
| BE433       | Biomedical Artificial Intelligence Application | 4     | 10      |
| BE400       | Advanced Topics in Human Movement              | 4     | 20      |

### **Optional Modules**

20 credits chosen from the list below, or such other modules as approved by the Year Adviser.

| <b>Module Code</b> | <b>Module Title</b>                          | <b>Level</b> | <b>Credits</b> |
|--------------------|----------------------------------------------|--------------|----------------|
| DM300              | Design Emotion and Experience                | 3            | 20             |
| DM305              | Innovation Management                        | 3            | 20             |
| DM307              | Production and Operations Management         | 3            | 20             |
| DM308              | Production Techniques 2                      | 3            | 20             |
| Various            | Vertically Integrated Project                | 4            | 10             |
| DM400              | Advanced Design Methods                      | 4            | 20             |
| DM401              | Advanced Product Design and Manufacture      | 4            | 20             |
| DM404              | Quality Management                           | 4            | 20             |
| DM406              | Industrial Placement 1                       | 4            | 20             |
| DM506              | Industrial Placement 4                       | 5            | 20             |
| DM918              | People, Organisation and Technology          | 5            | 10             |
| DM957              | Management of Technology and Innovation      | 5            | 10             |
| DM923              | Product Modelling and Visualisation          | 5            | 10             |
| DM926              | Supply Chain Operations                      | 5            | 10             |
| DM943              | Sustainable Product Design and Manufacturing | 5            | 10             |
| DM956              | Digital Manufacturing and Smart Products     | 5            | 10             |
| DM985              | Remanufacturing                              | 5            | 10             |
| DM993              | Systems Architectures and Design             | 5            | 10             |
| DM994              | Systems Engineering Concepts                 | 5            | 10             |
| EF950              | Design Methods and Management                | 5            | 10             |

Not all optional modules on this list may be available in each academic year.

6. **Fifth Year** - All students shall undertake modules amounting to no fewer than 120 credits as follows:

### **Compulsory Modules**

| <b>Module Code</b> | <b>Module Title</b>  | <b>Level</b> | <b>Credits</b> |
|--------------------|----------------------|--------------|----------------|
| DM511              | Individual Project 2 | 5            | 60             |

|       |                            |   |    |
|-------|----------------------------|---|----|
| DM501 | Industrial Group Project 2 | 5 | 20 |
| DM502 | Research Studies           | 5 | 20 |

### **Optional Modules**

No fewer than 20 credits at Level 4 or 5 (which must bring the total at Level 5 to no fewer than 120 credits) chosen from the list below or such other modules as approved by the Year Adviser.

| <b>Module Code</b> | <b>Module Title</b>                          | <b>Level</b> | <b>Credits</b> |
|--------------------|----------------------------------------------|--------------|----------------|
| DM400              | Advanced Design Methods                      | 4            | 20             |
| DM401              | Advanced Product Design and Manufacture      | 4            | 20             |
| DM404              | Quality Management                           | 4            | 20             |
| DM406              | Industrial Placement 1                       | 4            | 20             |
| Various            | Vertically Integrated Project                | 4            | 10             |
| DM503              | Global Design                                | 5            | 10             |
| DM506              | Industrial Placement 4                       | 5            | 20             |
| DM918              | People, Organisation and Technology          | 5            | 10             |
| DM957              | Management of Technology and Innovation      | 5            | 10             |
| DM923              | Product Modelling and Visualisation          | 5            | 10             |
| DM926              | Supply Chain Operations                      | 5            | 10             |
| DM933              | Engineering Risk Management                  | 5            | 10             |
| DM955              | Total Quality Management                     | 5            | 10             |
| DM956              | Digital Manufacturing and Smart Products     | 5            | 10             |
| DM941              | Fundamentals of Lean Six Sigma               | 5            | 10             |
| DM943              | Sustainable Product Design and Manufacturing | 5            | 10             |
| DM983              | Design Form and Aesthetics                   | 5            | 10             |
| DM984              | Human Centred Design                         | 5            | 10             |
| DM985              | Remanufacturing                              | 5            | 10             |
| DM993              | Systems Architectures and Design             | 5            | 10             |
| DM994              | Systems Engineering Concepts                 | 5            | 10             |
| EF950              | Design Methods and Management                | 5            | 10             |
| BE902              | Prosthetics and Orthotics                    | 5            | 10             |

|       |                                  |   |    |
|-------|----------------------------------|---|----|
| BE903 | Cardiovascular Devices           | 5 | 10 |
| BE904 | Clinical and Sports Biomechanics | 5 | 10 |
| BE908 | Biomedical Instrumentation       | 5 | 10 |
| BE909 | Biomedical Electronics           | 5 | 10 |

Not all optional modules on this list may be available in each academic year.

### Progress

7. In order to progress to the second year of the programme, see [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#).
8. In order to progress to the third year of the programme, see [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#).
9. In order to progress to the fourth year of the programme, see [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#).
10. In order to progress to the fifth year of the programme, see [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#).

### Final Classification

11. The final award for the chosen degree in Sports Engineering will normally be based on the first assessed attempt at all modules taken in the second, third, fourth and fifth years.

### Award

12. **MEng:** In order to qualify for the award of the degree of MEng in Sports Design Engineering, see [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#); and must include DM402 Individual Project 1 and DM511 Individual Project 2.
13. **BEng with Honours:** In order to qualify for the award of the degree of BEng with Honours in Sports Design Engineering, see [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#); and must include DM402 Individual Project 1.
14. **BEng:** In order to qualify for the award of the degree of BEng in Sports Design Engineering, see [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#).
15. **Diploma of Higher Education:** In order to qualify for the award of a Diploma of Higher Education in Sports Design Engineering, see [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#).
16. **Certificate of Higher Education:** In order to qualify for the award of a Certificate of Higher Education in Sports Design Engineering, see [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#).