

### Study Programme

Academic year 2025-2026

### Faculty of Engineering and Architecture Preparatory Course Master of Science in Biomedical Engineering

# Language of instruction: Dutch Programme version 7

### 1 General Courses

#### 1.1 Intake: BSc/MSc in Engineering

Subscribe to no more than 45 credit units from the following list. Subject to approval by the faculty. Depending on the student's previous degree.

|            | the student's previous degree.  | ODDT |         |         |         |
|------------|---|------|---------|---------|---------|
| Nr Course  |   | CRDT | Ref MT1 | Session | Study   |
| 1 E063682  | Biomechanics [en]<br>Charlotte Debbaut Department of Electronics and Information Systems  | 6    | 1       | A:1     | 180     |
| 2 E045120  | Transport Phenomena<br>Tom De Mulder Department of Civil Engineering  | 6    | 1       | B:2     | 180     |
| 3 E090320  | Electrical Circuits and Networks<br>Inge Nys Department of Electronics and Information Systems  | 6    | 1       | A:1     | 180     |
| 4 E074011  | Quantitative Cell and Tissue Analysis [en]<br>Andre Skirtach Department of Biotechnology  | 6    | 1       | A:1     | 180     |
| 5 E092662  | From Genome to Organism [en]<br>Fransiska Malfait Department of Biomolecular Medicine   | 3    | 1       | A:1     | 90      |
| 6 E092623  | Modelling of Physiological Systems [en]<br>Patrick Segers Department of Electronics and Information Systems                           | 5    | 1       | A:2     | 150     |
| 7 E032511  | Electronic Systems and Instrumentation for Biomedical Engineers<br>Jan Doutreloigne Department of Electronics and Information Systems | 5    | 1       | A:2     | 150     |
| 8 E068661  | Biomedical Polymers and Processing [nl, en]<br>Sandra Van Vlierberghe Department of Organic Chemistry                                 | 3    | 1       | A:1     | 90      |
| 9 E010390  | Medical Signal Processing and Statistics [en]<br>Nilesh Madhu Department of Electronics and Information Systems                       | 3    | 1       | A:2     | 90      |
| 10 E092735 | Medical Physics [en]<br>Klaus Bacher Department of Human Structure and Repair   | 6    | 1       | A:2     | 180     |
| 1.2 Intake | : BSc/MSc Bioscience Engineering  |      |         | 90      | credits |
| Nr Course  |   | CRDT | Ref MT1 | Session | Study   |
| 1 E090320  | Electrical Circuits and Networks<br>Inge Nys Department of Electronics and Information Systems  | 6    | 1       | A:1     | 180     |
| 2 E032511  | Electronic Systems and Instrumentation for Biomedical Engineers<br>Jan Doutreloigne Department of Electronics and Information Systems | 5    | 1       | A:2     | 150     |
| 3 E002910  | Introduction to Numerical Mathematics<br>Karel Van Acoleyen Department of Electronics and Information Systems                         | 3    | 1       | A:2     | 90      |
| 4 E092623  | Modelling of Physiological Systems [en]<br>Patrick Segers Department of Electronics and Information Systems                           | 5    | 1       | A:2     | 150     |
| 5 E005020  | Analysis of Systems and Signals<br>Gert De Cooman Department of Electronics and Information Systems                                   | 6    | 2       | A:1     | 180     |
| 6 E063682  | Biomechanics [en]<br>Charlotte Debbaut Department of Electronics and Information Systems  | 6    | 2       | A:1     | 180     |
| 7 E068661  | Biomedical Polymers and Processing [nl, en]<br>Sandra Van Vlierberghe Department of Organic Chemistry                                 | 3    | 2       | A:1     | 90      |
| 8 E016350  | Artificial Intelligence [en]<br>Aleksandra Pizurica Department of Telecommunications and Information Processing                       | 3    | 2       | B:2     | 90      |

| 9  | E092735 | Medical Physics [en]<br>Klaus Bacher Department of Human Structure and Repair                                   | 6 | 2 | A:2 | 180 |
|----|---------|---|---|---|-----|-----|
| 10 | E010390 | Medical Signal Processing and Statistics [en]<br>Nilesh Madhu Department of Electronics and Information Systems | 3 | 2 | A:2 | 90  |

#### 1.2.1 General Courses depending on the previous degree

Subscribe to no more than 44 credit units from the Bachelor of Science in Engineering, main subject Biomedical Engineering, depending on the student's previous degree. Subject to approval by the faculty.

|           | BSc/MSc in Physics and Astronomy   |  |   | 58   | credits   |
|-----------|--|--|---|--|---|
| Course    |  | CRDT   | Ref MT1   | Session  | Study   |
| E090320   | Electrical Circuits and Networks<br>Inge Nys Department of Electronics and Information Systems   | 6  | 1   | A:1  | 180   |
| E092662   | From Genome to Organism [en]<br>Fransiska Malfait Department of Biomolecular Medicine  | 3  | 1   | A:1  | 90  |
| E074011   | Quantitative Cell and Tissue Analysis [en]<br>Andre Skirtach Department of Biotechnology   | 6  | 1   | A:1  | 180   |
| E032511   | Electronic Systems and Instrumentation for Biomedical Engineers<br>Jan Doutreloigne Department of Electronics and Information Systems  | 5  | 1   | A:2  | 150   |
| E092623   | Modelling of Physiological Systems [en]<br>Patrick Segers Department of Electronics and Information Systems  | 5  | 1   | A:2  | 150   |
| E070310   | Organic Chemistry<br>Filip Du Prez Department of Organic Chemistry   | 6  | 1   | A:2  | 180   |
| E045120   | Transport Phenomena<br>Tom De Mulder Department of Civil Engineering   | 6  | 1   | B:2  | 180   |
| E005020   | Analysis of Systems and Signals<br>Gert De Cooman Department of Electronics and Information Systems  | 6  | 2   | A:1  | 180   |
| E063682   | Biomechanics [en]<br>Charlotte Debbaut Department of Electronics and Information Systems   | 6  | 2   | A:1  | 180   |
| E068661   | Biomedical Polymers and Processing [nl, en]<br>Sandra Van Vlierberghe Department of Organic Chemistry  | 3  | 2   | A:1  | 90  |
| E016350   | Artificial Intelligence [en]<br>Aleksandra Pizurica Department of Telecommunications and Information Processing  | 3  | 2   | B:2  | 90  |
| E010390   | Medical Signal Processing and Statistics [en]<br>Nilesh Madhu Department of Electronics and Information Systems  | 3  | 2   | A:2  | 90  |
| 4 Intake: | MSc Engineering Technology   |  |   | 55   | credits   |
| Course    |  | CRDT   | Ref MT1   | Session  | Study   |
| E001161   | Mathematic Models [en]<br>Karel Van Acoleyen Department of Electronics and Information Systems   | 6  | 1   | A:1  | 180   |
| E092662   | From Genome to Organism [en]<br>Fransiska Malfait Department of Biomolecular Medicine  | 3  | 1   | A:1  | 90  |
| E032511   | Electronic Systems and Instrumentation for Biomedical Engineers<br>Jan Doutreloigne Department of Electronics and Information Systems  | 5  | 1   | A:2  | 150   |
|           | 3 Intake:<br>Course<br>E090320<br>E092662<br>E074011<br>E032511<br>E092623<br>E070310<br>E045120<br>E045120<br>E063682<br>E068661<br>E016350<br>E010390<br>4 Intake:<br>Course<br>E001161<br>E092662 | 3 Intake: BSc/MSc in Physics and Astronomy   Course   E090320 Electrical Circuits and Networks<br>Inge Nys - Department of Electronics and Information Systems   E092662 From Genome to Organism [en]<br>Fransiska Matiati - Department of Biomecular Medicine   E074011 Quantitative Cell and Tissue Analysis [en]<br>Andre Skirtach Department of Biotechnology   E032511 Electronic Systems and Instrumentation for Biomedical Engineers<br>Jan Doutreloigne Department of Electronics and Information Systems   E092623 Modelling of Physiological Systems [en]<br>Patrick Segers Department of Electronics and Information Systems   E070310 Organic Chemistry<br>Filip Du Prez Department of Civil Engineering   E005020 Analysis of Systems and Signals<br>Gert De Cooman Department of Electronics and Information Systems   E063682 Biomechanics [en]<br>Charlotte Debbaut Department of Teleconmunications and Information Systems   E068661 Biomechanics [en]<br>Charlotte Debbaut Department of Teleconmunications and Information Processing   E016350 Artificial Intelligence [en]<br>Milesh Madhu Department of Electronics and Information Systems   4 Intake: MSC Engineering Technology   Course E001161 Mathematic Models [en]<br>Milesh Madhu Department of Electronics and Information Systems   E092662 From Genome to Organism [en]<br>Hransiska Malfait Departme | 3 Intake: BSc/MSc in Physics and Astronomy CRDT   E090320 Electrical Circuits and Networks<br>Inge Mys - Department of Electronics and Information Systems 6   E092662 From Genome to Organism [en]<br>Fransiska Mattait - Department of Biomolecular Medicine 3   E074011 Quantitative Cell and Tissue Analysis [en]<br>Andre Skitrach - Department of Biotechology 6   E032511 Electronic Systems and Instrumentation for Biomedical Engineers<br>Jan Doutrelogine - Department of Electronics and Information Systems 5   E092623 Modelling of Physiological Systems [en]<br>Patrick Seger - Department of Electronics and Information Systems 6   E070310 Organic Chemistry<br>Filip Du Prez - Department of Electronics and Information Systems 6   E005020 Analysis of Systems and Signals<br>Ger De Comma - Department of Electronics and Information Systems 6   E0063682 Biomedical Polymers and Processing [n], en]<br>Sandra Van Wierberghe - Department of Electronics and Information Systems 6   E016350 Artificial Intelligence [en]<br>Medical Signal Processing and Statistics [en]<br>Wiels Madhu - Department of Electronics and Information Processing 3   E016350 Medical Signal Processing and Statistics [en]<br>Miels Madhu - Department of Electronics and Information Systems 3   E010390 Medical Signal Processing and Statistics [en]<br>Miels Madhu - Department of Electronics and Informat | 3 Intake: BSc/MSc in Physics and Astronomy   Course CRDT Ref MTI   E090320 Electrical Circuits and Networks<br>Inge Wis Department of Electronics and Information Systems 6 1   E092662 From Genome to Organism [en]<br>Fransika Maitet Department of Biotechnology 3 1   E074011 Quantitative Cell and Tissue Analysis [en]<br>Andre Skirtach Department of Biotechnology 6 1   E032511 Electronic Systems and Instrumentation for Biomedical Engineers<br>An Doutreloigne Department of Electronics and Information Systems 5 1   E032623 Modelling of Physiological Systems [en]<br>Patrick Seers Department of Electronics and Information Systems 6 1   E070310 Organic Chemistry<br>Filip Du Per Department of Organic Chemistry 6 1   E045120 Transport Phenomena<br>Tom De Muider Department of Electronics and Information Systems 6 2   E063682 Biomedical Polymers and Processing [n], en]<br>Sandra Van Wierberghe Department of Electronics and Information Systems 6 2   E016380 Artificial Intelligence [en]<br>Metshadra Puzurea of Electronics and Information Systems 3 2   E016380 Artificial Intelligence [en]<br>Metshadra Puzurea of Electronics and Information Systems 3 2 | 3 Intake: BSc/MSc in Physics and Astronomy 58   Course CRD T Ref MTI Session   E090320 Electrical Circuits and Networks<br>(log My > Department of Electronics and Information Systems) 6 1 A:1   E092662 From Genome to Organism [en]<br>Ander Skitach - Department of Biomedicalar Medicine 3 1 A:1   E074011 Quantitative Cell and Tissue Analysis [en]<br>Ander Skitach - Department of Biomedicale Medicine 5 1 A:2   E032511 Electronic Systems and Instrumentation for Biomedical Engineers<br>is an Dubrielogne - Department of Electronics and Information Systems 5 1 A:2   E092623 Modelling of Physiological Systems [en]<br>Patrick Seers - Department of Electronics and Information Systems 6 1 A:2   E070310 Organic Chemistry<br>Filio Du Prec - Department of Electronics and Information Systems 6 2 A:1   E045120 Transport Phenomena<br>Tom De Mulder - Department of Electronics and Information Systems 6 2 A:1   E063682 Biomechanics [en]<br>Charlotte Debaut - Department of Electronics and Information Systems 6 2 A:1   E016360 Artificial Intelligence [en]<br>Aleskandie Plurica - Department of Electronics and Information Systems 3 |

| 4  | E002910 | Introduction to Numerical Mathematics<br>Karel Van Acoleyen Department of Electronics and Information Systems   | 3 | 1 | A:2 | 90  |
|----|---------|---|---|---|-----|-----|
| 5  | E092623 | Modelling of Physiological Systems [en]<br>Patrick Segers Department of Electronics and Information Systems     | 5 | 1 | A:2 | 150 |
| 6  | E070310 | Organic Chemistry<br>Filip Du Prez Department of Organic Chemistry  | 6 | 1 | A:2 | 180 |
| 7  | E063682 | Biomechanics [en]<br>Charlotte Debbaut Department of Electronics and Information Systems                        | 6 | 2 | A:1 | 180 |
| 8  | E068661 | Biomedical Polymers and Processing [nl, en]<br>Sandra Van Vlierberghe Department of Organic Chemistry           | 3 | 2 | A:1 | 90  |
| 9  | E074011 | Quantitative Cell and Tissue Analysis [en]<br>Andre Skirtach Department of Biotechnology                        | 6 | 2 | A:1 | 180 |
| 10 | E016350 | Artificial Intelligence [en]<br>Aleksandra Pizurica Department of Telecommunications and Information Processing | 3 | 2 | B:2 | 90  |
| 11 | E092735 | Medical Physics [en]<br>Klaus Bacher Department of Human Structure and Repair                                   | 6 | 2 | A:2 | 180 |
|    |         |   |   |   |     |     |

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| 12 E010390 Medical Signal Processing and Statistics [en] |  | 3 | 2 | A:2 | 90 |
|--|--|---|---|-----|----|
|  | Nilesh Madhu Department of Electronics and Information Systems |   |   |     |    |

#### 1.5 Intake: MSc Biochemical Engineering Technology

|    |         | inee Breenennear Engineering reenneregy   |      |         | • ·     | 0.00.00 |
|----|---------|---|------|---------|---------|---------|
| Nr | Course  |   | CRDT | Ref MT1 | Session | Study   |
| 1  | E090320 | Electrical Circuits and Networks<br>Inge Nys Department of Electronics and Information Systems  | 6    | 1       | A:1     | 180     |
| 2  | E001161 | Mathematic Models [en]<br>Karel Van Acoleyen Department of Electronics and Information Systems  | 6    | 1       | A:1     | 180     |
| 3  | E040420 | Mechanics of Materials<br>Wim Van Paepegem Department of Materials, Textiles and Chemical Engineering                                 | 6    | 1       | A:1     | 180     |
| 4  | E032511 | Electronic Systems and Instrumentation for Biomedical Engineers<br>Jan Doutreloigne Department of Electronics and Information Systems | 5    | 1       | A:2     | 150     |
| 5  | E002910 | Introduction to Numerical Mathematics<br>Karel Van Acoleyen Department of Electronics and Information Systems                         | 3    | 1       | A:2     | 90      |
| 6  | E092623 | Modelling of Physiological Systems [en]<br>Patrick Segers Department of Electronics and Information Systems                           | 5    | 1       | A:2     | 150     |
| 7  | E045120 | Transport Phenomena<br>Tom De Mulder Department of Civil Engineering  | 6    | 1       | B:2     | 180     |
| 8  | E005020 | Analysis of Systems and Signals<br>Gert De Cooman Department of Electronics and Information Systems                                   | 6    | 2       | A:1     | 180     |
| 9  | E063682 | Biomechanics [en]<br>Charlotte Debbaut Department of Electronics and Information Systems  | 6    | 2       | A:1     | 180     |
| 10 | E068661 | Biomedical Polymers and Processing [nl, en]<br>Sandra Van Vlierberghe Department of Organic Chemistry                                 | 3    | 2       | A:1     | 90      |
| 11 | E016350 | Artificial Intelligence [en]<br>Aleksandra Pizurica Department of Telecommunications and Information Processing                       | 3    | 2       | B:2     | 90      |
| 12 | E092735 | Medical Physics [en]<br>Klaus Bacher Department of Human Structure and Repair   | 6    | 2       | A:2     | 180     |
| 13 | E010390 | Medical Signal Processing and Statistics [en]<br>Nilesh Madhu Department of Electronics and Information Systems                       | 3    | 2       | A:2     | 90      |

## 1.6 Intake: BSc/MSc degrees in the field of study of Biomedical Sciences and Medicine, Pharmaceutical Sciences, Dentistry, Revalidation and Kinesitherapy

88 credits

64 credits

| Nr | Course  |   | CRDT | Ref MT1 | Session | Study |
|----|---------|---|------|---------|---------|-------|
| 1  | E015041 | Informatics<br>Bart Dhoedt Department of Information Technology   | 6    | 1       | A:J     | 180   |
| 2  | E001321 | Mathematical Analysis III<br>Hendrik De Bie Department of Electronics and Information Systems   | 6    | 1       | A:1     | 180   |
| 3  | E020220 | Physics II<br>Christophe Leys Department of Applied Physics   | 6    | 1       | A:1     | 180   |
| 4  | E090320 | Electrical Circuits and Networks<br>Inge Nys Department of Electronics and Information Systems  | 6    | 1       | A:1     | 180   |
| 5  | E040420 | Mechanics of Materials<br>Wim Van Paepegem Department of Materials, Textiles and Chemical Engineering                                 | 6    | 1       | A:1     | 180   |
| 6  | E045120 | Transport Phenomena<br>Tom De Mulder Department of Civil Engineering  | 6    | 1       | B:2     | 180   |
| 7  | E032511 | Electronic Systems and Instrumentation for Biomedical Engineers<br>Jan Doutreloigne Department of Electronics and Information Systems | 5    | 1       | A:2     | 150   |
| 8  | E002910 | Introduction to Numerical Mathematics<br>Karel Van Acoleyen Department of Electronics and Information Systems                         | 3    | 1       | A:2     | 90    |
| 9  | E092623 | Modelling of Physiological Systems [en]<br>Patrick Segers Department of Electronics and Information Systems                           | 5    | 1       | A:2     | 150   |
| 10 | E068661 | Biomedical Polymers and Processing [nl, en]<br>Sandra Van Vlierberghe Department of Organic Chemistry                                 | 3    | 2       | A:1     | 90    |
| 11 | E022110 | Electromagnetism I<br>Dries Vande Ginste Department of Information Technology   | 6    | 2       | A:1     | 180   |

| 12 E063682 | Biomechanics [en]<br>Charlotte Debbaut Department of Electronics and Information Systems                                 | 6 | 2 | A:1 | 180 |
|------------|--|---|---|-----|-----|
| 13 E005020 | Analysis of Systems and Signals<br>Gert De Cooman Department of Electronics and Information Systems                      | 6 | 2 | A:1 | 180 |
| 14 E007120 | Modelling and Control of Dynamic Systems<br>Mia Loccufier Department of Electromechanical, Systems and Metal Engineering | 6 | 2 | A:2 | 180 |
| 15 E016350 | Artificial Intelligence [en]<br>Aleksandra Pizurica Department of Telecommunications and Information Processing          | 3 | 2 | B:2 | 90  |
| 16 E092735 | Medical Physics [en]<br>Klaus Bacher Department of Human Structure and Repair  | 6 | 2 | A:2 | 180 |
| 17 E010390 | Medical Signal Processing and Statistics [en]<br>Nilesh Madhu Department of Electronics and Information Systems          | 3 | 2 | A:2 | 90  |

1.6.1 General Courses depending on the previous degree

Subscribe to no more than 3 credit units from the Bachelor of Science in Engineering, main subject Biomedical Engineering, depending on the student's previous degree. Subject to approval by the faculty.

Teaching

When a course is not taught (solely) in the programme's language of instruction, the effectively used languages are indicated in square brackets following the cours name, using the following ISO codes:

| bg: Bulgarian | de: German  | es: Spanish | ja: Japanese  | pl: Polish     | sh: Kroatian/Serbian | zh: Chinese |
|---------------|-------------|-------------|---------------|----------------|----------------------|-------------|
| cs: Czech     | el: Greek   | fr: French  | nl: Dutch     | pt: Portuguese | sl: Slovene          |             |
| da: Danish    | en: English | it: Italian | no: Norwegian | ru: Russian    | sv: Swedish          |             |

#### Semester

Semesters are indicated by their number (1 or 2); semester 3 represents the summer period and J indicates a course spanning semesters 1 and 2. When a capital letter precedes a semester number, the course has multiple offerings. The letter indicates the offering concerned. When a semester is shown in brackets, the course in not offered this year in the specific offering. The offering frequency and first year of offering are indicated by the following codes:

| a: bi-annually  | c: annually, from 2026-2027     |
|-----------------|---------------------------------|
| b: tri-annually | d: bi-annually, from 2026-2027  |
| -               | e: tri-annually, from 2026-2027 |

f: annually, from 2027-2028 g: bi-annually, from 2027-2028 h: tri-annually, from 2027-2028 i: annually, from 2028-2029 j: bi-annually, from 2028-2029 k: tri-annually, from 2028-2029