

MATERIALS & PROCESS ENGINEERING

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This specified programme contains two overlapping engineering disciplines. Materials engineers make critical decisions in selecting the best materials for a particular function; process engineers make critical decisions in the processes and utilities required to manufacture the product. Examples include converting trees into paper and fibre board, iron sand into steel, effluent into drinkable water and producing solar panels for electricity.

This specified programme has full IPENZ accreditation, making the Bachelor of Engineering a nationally and internationally recognised degree.

CONTACTS FOR THE SCHOOL OF ENGINEERING

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| School Administrators Mary Dalbeth / Janine Williams | Room: EG.04 Phone: 07 838 4266 / 07 838 4026 Email: engineering@waikato.ac.nz |
| Enrolment Contact Person & First Year Mentor Professor Janis Swan | Room: EG.04C Phone: 07 838 4049 Email: j.swan@waikato.ac.nz |
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Degrees

This specified programme is available for the Bachelor of Engineering or Bachelor of Engineering (Honours) degrees. You may also be interested in the Materials & Processing major, which is available for the Bachelor of Science or Bachelor of Science (Technology) degrees (refer to page 124).

Programme Details

| Structure of the Materials & Process Engineering Programme – BE/BE(Hons) | | | | | | | | |
|---|--|--|--|---|----------------------|----------------------|----------------------|----------------------|
| YEAR 1 | ENGG180 15 points | ENMP102 15 points | MATH101 15 points | MATH102 15 points | CHEM101 15 points | CHEM102 15 points | COMP103 15 points | PHYS103 15 points |
| | ENMP211 20 points | ENMP213 20 points | ENGG282 10 points ENMP282 10 points | ENGG283 10 points ENGG284 10 points | ENMP221 20 points | ENMP223 20 points | ENGG279 0 points | ENGG371 0 points |
| YEAR 3 | ENGG285 10 points ENGG287 10 points | ENMP214 10 points ENMP215 10 points | ENMP311 20 points | ENMP313 20 points | ENMP321 20 points | ENMP323 20 points | ENGG372 0 points | ENGG379 0 points |
| | ENMP411 10 points ENMP421 10 points | ENGG381 20 points | * | DESIGN PROJECT ENGG482 OR ENGG492 60 points | | | | |
| <input type="checkbox"/> Work Placement – Work experience in an appropriate and approved industry or applied field (0 points). <input type="checkbox"/> Design Project – A major design project (60 points) is undertaken in Year 4. | | | | | | | | |

Year 1 – Papers are worth 15 points.

- » CHEM101A – Chemical Concepts
- » CHEM102B – Chemical Change and Organic Compounds
- » COMP103A – Introduction to Computer Science 1
- » ENGG180A – Foundations of Engineering
- » ENMP102B – Introduction to Materials Science and Engineering
- » MATH101A/B/C/D – Introduction to Calculus
- » MATH102A/B/C/D – Introduction to Algebra
- » PHYS103B – Physics for Scientists and Engineers 1

Year 2 – Papers are worth 20 points unless specified.

- » ENGG279B – Preparation for the Professional Workplace (0 points)
- » ENGG282B – Engineering Design (10 points)
- » ENGG283A – Linear Algebra for Engineers (10 points)
- » ENGG284B – Differential Equations for Engineers (10 points)
- » ENMP211A – Materials 1
- » ENMP213B – Mechanics of Materials 1
- » ENMP221A – Engineering Thermodynamics
- » ENMP223B – Thermofluids
- » ENMP282A – Science and Engineering Management A (10 points)
- » ENGG371C – Engineering Work Placement 1 (0 points)

MATERIALS & PROCESS ENGINEERING

Year 3 – Papers are worth 20 points unless specified.

- » ENGG285A – Multivariable Calculus for Engineers (10 points)
- » ENGG287A – Engineering Applications (10 points)
- » ENGG372C – Engineering Work Placement 2 (0 points)
- » ENGG379A – Reflection on Professional Workplace Experience (0 points)
- » ENMP214B – Manufacturing Processes (10 points)
- » ENMP215B – Manufacturing Technology (10 points)
- » ENMP311B – Materials 2
- » ENMP313A – Mechanics of Materials 2
- » ENMP321B – Process Engineering and Design
- » ENMP323A – Transport Processes and Unit Operations

Year 4 – Papers are worth 20 points unless specified.

- » (BE) ENGG482A/B/C/Y – Engineering Design and Management Project (60 points) or
- » (BE (Hons)) ENGG492A/B/C/Y – Honours Research and Management Project (60 points)
- » ENGG381A – Engineering Statistics
- » ENMP411A – Advanced Materials Engineering (10 points)
- » ENMP421A – Advanced Process Engineering and Control (10 points)

*Choose a further 20 points from papers at 200 Level or above.

Note(s): For descriptions of individual papers refer to the following subjects: CHEM Chemistry; ENEL Electronics; ENGG Engineering; ENMP Materials & Processing; PHYS Physics. For descriptions of papers with subject codes COMP, MATH or STATS, refer to the *Computing & Mathematical Sciences Handbook* or the *University Calendar*.