

Bachelor of Engineering in MECHANICAL ENGINEERING, specialization in SUSTAINABLE DESIGN ENGINEERING

PMECES25

Structure of studies	ECTS
Basic studies	90
Professional studies	75
Optional studies	30
Practical training	30
Thesis	15
Sum	240

1st Academic Year

"GETTING ENGINEERING BASIC SKILLS AND TOOLS & DESIGNER-ATTITUDE"

Autumn 2025	Spring 2026	Summer 2026
Engineering Tools 1 15 Introduction to Mathematical Sciences 5 Physics 5 ICT-tools 5	Engineering Tools 2 - 15 ECTS 15 Engineering Precalculus 5 Technical Drawing and 3D Modelling 5 Heat and Electricity 5	Basic Training 10
Working Life Skills for Engineers 15 Finnish A1 5 English Professional Skills B2 5 Introduction to Higher Education Studies 5	Design Skills 1 - 15 ECTS 15 User-centered Design Approach 5 Visualization, Prototyping and Ideation 7 Designer CAD 1 5	
	Recommended optional studies Fundamentals of Sustainable Development 1 Occupational Safety 1 Hot work safety education and training 1 Finnish A2 5	

2nd Academic Year

"DEEPENING MECHANICAL ENGINEERING SKILLS & INTRODUCTION TO SUSTAINABLE DEVELOPMENT"

Autumn 2026	Spring 2027	Summer 2027
Sustainable Perspective in Engineering 15 SUSTIS Sustainable Development Project 3 Introduction to Life Cycle Assessment 2 Material science for mechanical engineering 2 Production Technology 5	Working Life Skills for Engineers 2 15 Finnish for engineers A2 / B2 5 Design of Machine Elements 5 Strength of Materials 5	Field-Specific Training 10
Engineering Tools 3 - 15 ECTS 15 Calculus 5 Engineering Mechanics 5 Product documentation 5	Optional module, includes Finnish language 15 Finnish B1 5	

3rd Academic Year

"SPECIALIZING IN ENGINEERING AND SUSTAINABLE DESIGN INNOVATION"

Autumn 2027	Spring 2028	Summer 2028
Optimal Design and Control - 15 ECTS 15 Computational Design of Structures and Fluid-thermal Systems 6 Robust and Optimal Control 4 Optimal Design and Control Project 5	Design Skills 2 - 15 ECTS 15 Digital Visualization 5 Designer CAD 2 5 Prototyping 5	Professional Training 10
Project Skills and Entrepreneurship 15 Innovation project 10 Entrepreneurship and Sustainable Business 5	Optional module, includes Finnish language 15 Finnish B2 5 Finnish C1 5	

4th Academic Year

"CO-CREATING SUSTAINABLE DESIGN ENGINEERING FOR THE FUTURE TRANSITIONS"

Autumn 2028	Spring 2029
Future Co-Design 15 Service Design 5 Design for Circular Economy 5 Future Co-design Project 5	Optional Studies etc. if left
Thesis 15	