



Programme Specification

Robotics and Artificial Intelligence {Double Degree} [TSI]

Version: 2026-27, v1.0, Validated

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Section 1: Key Programme Details

Part A: Programme Information

Programme title: Robotics and Artificial Intelligence {Double Degree} [TSI]

Highest award: MSc Robotics and Artificial Intelligence

Default award: PGCert Robotics and Artificial Intelligence

Default award: PGDip Robotics and Artificial Intelligence

Awarding institution: TSI, UWE Bristol

Affiliated institutions: TSI

Teaching institutions: TSI

Study abroad: No

Year abroad: No

Sandwich year: No

Credit recognition: No

School responsible for the programme: CATE School of Engineering, College of Arts, Technology and Environment

Professional, statutory or regulatory bodies: Not applicable

Modes of delivery: Full-time

Entry requirements: The University's Standard Entry Requirements apply:

- Bachelor degree in engineering in electronics and automation, electrical engineering, information and communication technology, robotics or other related fields with a study duration of at least 180 ECTS; or a second-level professional higher education or Bachelor degree in transport engineering, metalworking, or other related fields with at least 1 year of professional experience in electronics and automation,
- English language level: B2 or above

-Result of the Latvian Centralized Examination (CE) English test is not lower than 55%

-Personal Interview

Applicants who do not meet the normal entry requirements, but who do have relevant qualifications or professional experience, are encouraged to apply. Such applicants will be considered on a case by case basis. Applications should describe in detail professional experience and qualifications.

For implementation from: 01 February 2026

Programme code: H6L412

Section 2: Programme Overview, Aims and Learning Outcomes

Part A: Programme Overview, Aims and Learning Outcomes

Overview: The MSc in Robotics and Artificial Intelligence is offered by the Transport and Telecommunication Institute (TSI, Riga). The programme develops advanced engineering competence at the intersection of smart embedded systems, applied artificial intelligence, and autonomous robotics.

Students enrolled on the Double Degree of Robotics and Artificial Intelligence, will cover, among other, topics related to: autonomous systems design, robotic modelling, computer vision, and advanced AI for mechatronic applications.

Features of the programme:

Educational Aims: This programme aims to develop highly qualified engineering specialists with advanced competencies in smart embedded systems, applied artificial intelligence, and robotics. It prepares graduates to conduct independent scientific research, design and deploy intelligent technological systems, and lead interdisciplinary engineering projects in industry and research organisations.

Students specialising in Robotics and Artificial Intelligence benefit from a Double Degree framework with UWE Bristol, broadening their academic and professional exposure at an international level.

Programme Learning Outcomes:

On successful completion of this programme graduates will achieve the following learning outcomes.

Programme Learning Outcomes

- PO1. Independently formulate and investigate complex, open-ended engineering problems by critically evaluating state-of-the-art theories, methods and standards, and apply advanced research methodologies to generate new knowledge or original technical solutions at the forefront of the field within complex regulatory, ethical, and economic environments.
- PO2. Select, apply and critically evaluate advanced engineering tools, mathematical models, and data-driven methods to model, simulate, and validate the performance of complex technical systems, integrating hardware, software, and algorithmic components into verified, functional solutions.
- PO3. Demonstrate leadership and effective collaboration in multidisciplinary and multicultural environments, communicating complex technical outcomes to diverse audiences, while adhering to professional ethics and taking responsibility for continuous autonomous learning and professional development.
- PO4. Exercise critical engineering judgement to make and justify decisions under technical, economic, legal, and ethical constraints across the design, implementation, and deployment of intelligent technological systems.
- PO5. Design, implement and evaluate intelligent autonomous robotic systems that combine robotic mechanics, perception, learning-based control, and navigation to address real-world challenges in mobility, automation, and additive manufacturing.

Assessment strategy: Learning outcomes are assessed through methods matched to the nature of each module, including written examinations, individual and group project reports, laboratory work, in-class tests, and presentations. Assessment tasks are designed to reflect the complexity and professional standards expected at EQF Level 7, with emphasis on critical evaluation, justification of methodological choices,

and communication of results to technical audiences.

The Master Thesis is the programme's principal integration point. Students independently define a research problem within their chosen specialisation, apply advanced engineering and research methods, and produce and defend a written thesis. The thesis is prepared under the supervision of TSI academic staff, with the possibility of collaboration with industry partners through TSI's Robotics and Additive Technologies Innovation Research Cluster.

Through this process, students demonstrate their readiness for independent professional practice and, where applicable, doctoral-level continuation.

Further professional competencies, including scientific and technical writing, structured argumentation, and delivery of results under academic constraints; are developed progressively across the programme and demonstrated through the thesis defence.

Student support: The programme is delivered at TSI's campus in Riga. Students enrolled in the Robotics and Artificial Intelligence specialisation additionally benefit from access to UWE Bristol academic resources and facilities as part of the Double Degree partnership.

All students are supported by the programme team, led by the Programme Director and the Dean of the Faculty of Engineering. Academic support includes access to TSI's specialist research laboratories, the ProQuest Ebook Central digital library, and supervision by research-active staff throughout the thesis process.

TSI's student services team provides support for enrolment, accommodation, and visa-related matters for international students.

Part B: Programme Structure

Year 1

Year 1 Compulsory Modules - UWE

The student must take 120 credits from Compulsory modules in Year 1

Module Code	Module Title	Credit
UFCE81-12-M	Critical Thinking and Innovation [TSI] 2026-27	12
UFCE86-12-M	Project and Requirements Management [TSI] 2026-27	12
UFCE71-18-M	Research Methodology [TSI] 2026-27	18
UFMED3-12-M	Advanced Artificial Intelligence [TSI] 2026-27	12
UFMED9-12-M	Robotic and Autonomous Systems Design [TSI] 2026-27	12
UFMEDB-12-M	Research Laboratory Practice [TSI] 2026-27	12
UFMEDC-12-M	Computer Vision and Image Processing [TSI] 2026-27	12
UFMEDF-12-M	Digital Communications Technologies [TSI] 2026-27	12
UFMEDH-12-M	Advanced Robotics Applications [TSI] 2026-27	12
UFMEDG-6-M	Human-Centred Design and Ethics in Robotics Systems [TSI] 2026-27	6

Year 2

The Student must take 60 credits from Year 2.

Year 2 Compulsory Modules

Module Code	Module Title	Credit
UFMFTY-60-M	Masters Thesis [TSI] 2027-28	60

Part C: Higher Education Achievement Record (HEAR) Synopsis

Graduates of the MSc in Robotics and Artificial Intelligence will have developed advanced knowledge and practical expertise in autonomous systems, smart embedded technologies, artificial intelligence, robotics, computer vision, and intelligent mechatronic applications. They will be able to design, develop, evaluate, and deploy innovative engineering solutions informed by research and industry practice. Through laboratory-based learning, interdisciplinary projects, and independent research, graduates will have gained strong analytical, problem-solving, project management, and technical communication skills. They will be equipped to lead complex engineering projects, collaborate effectively in international and multidisciplinary environments, and contribute responsibly to technological innovation in industry, research, and society.

Part D: External Reference Points and Benchmarks

UK:

QAA UK Quality Code for HE

Framework for higher education qualifications (FHEQ)

Strategy 2030

University regulations and procedures

Latvia:

European Higher Education Area (EHEA)

European Qualifications Framework (EQF)

Latvian Qualifications Framework (LQF)

Part E: Regulations

Approved variant to University Academic Regulations and Procedures

<https://www.uwe.ac.uk/s...ulations-and-procedures>