Curriculum

from 1.1.2025 onwards

Doctoral Pilot Programme in Immunology (ImmuDocs) / Faculty of Technology

Doctoral degree 40 ECTS

Faculties and degrees:
Faculty of Medicine: Doctor of Philosophy, Doctor of Medical Science, Doctor of Odontology
Faculty of Science: Doctor of Philosophy
Faculty of Technology: Doctor of Philosophy, Doctor of Science in Technology
Turku School of Economics: Doctor of Science in Economics and Business Administration, Doctor of Philosophy and Doctor of Social Sciences

General description

Doctoral researchers of the Doctoral Pilot Programme in Immunology (ImmuDocs) carry out their doctoral studies in the Faculty of Medicine, Faculty of Science, Faculty of Technology or Turku School of Economics in research teams of high scientific quality. The doctoral researchers follow each faculty's study guide for postgraduate studies 2024-2027 for degree requirements, including requirements of the doctoral thesis. In addition to the provisions of the study guide, doctoral training is governed by this curriculum. The main objective of the doctoral pilot programme is to provide its doctoral researchers with a high level of scientific training in the fields of immunology and immunology-based drug development and diagnostics, thus providing the knowledge and skills for both professional research careers and other career paths requiring a high level of expertise.

Learning outcomes

After completing their doctoral studies, doctoral researchers

- have a broad knowledge of modern and applied immunology and an understanding and application of their key methods;
- acquire a scientific mindset and critical data analysis skills in line with good scientific practice;
- are well equipped to participate in the international scientific community, including conferences, research visits, laboratory courses, publication and peer review;
- are able to communicate their research results clearly and effectively to both the scientific community and the wider public;
- understand the full life cycle of immunology-based diagnostic and drug innovations, covering all relevant stages from concept to clinical application;
- understand the importance and impact of immunology on well-being, economy and society;
- are aware of career opportunities after the doctorate in the field of immunology.

Content

Doctoral Pilot Programme in Immunology includes general, research method and research field specific training. In addition to the doctoral thesis, doctoral researchers must complete a minimum of 40 credits of postgraduate studies, including a range of field-specific and optional courses tailored to support their research and career plans. Finnish language courses are recommended for non-native speakers of Finnish, for example 'Let's Start! Introduction to Finnish Studies, 1 ECTS' or 'Finnish 1, 4 ECTS'.

Information on teaching languages: English, Finnish

ImmuDocs postgraduate studies / Faculty of Technology

Postgraduate studies (minimum, no upper limit)		**40 ECTS**
Discipline-specific studies		**25–36 ECTS**
Obligatory discipline-specific studies		**6 ECTS**
IFDM2001	Methods in Immunology Lecture Series	1
PGS_2197	Advanced Immunology	2
LTOH5201	Seminars, conferences & Networking Events with the Business Sector 1	1
LTOH5202	Seminars, conferences & Networking Events with the Business Sector 2	1
LTOH5203	Seminars, conferences & Networking Events with the Business Sector 3	1
Recommended discipline-specific studies		**4–28 ECTS**
PGS_2198	Basic Immunology	2
IFDM3003	Journal Clubs by Visiting Professors	1
	Applied Immunology in Industry *Learning outcomes: By the end of the course, participants will have a comprehensive understanding of the diverse industrial applications of immunology and the fundamental principles of designing them. They will acquire a broad perspective on the significance of scientific practices and immunological quality control in them. Participants will also devel insights into industrial processes related to immune-based therapies and diagnostics, as well as the crucial role of immunology research in driving innovation.* *Study methods: Lectures + assignments* *Assessment scale: Pass/Fail* *Person in charge: Jukka Alinikula*	2
BIOT3010	Antibody Therapeutics	3
TKT21018	Elements of AI: Tekoälyn perusteet, MOOC	2
	Optional suitable studies, also at other universities, e.g.	**0–10**
743666S	Introduction to immunology (University of Oulu)	5
743668S	Tumor cell biology (University of Oulu)	5
Research method training		**0-14 ECTS**
IFDM1005	Immunohistochemistry in Research - lectures	1
IFDM1006	Immunohistochemistry in Research - practical	1
IFDM1008	A Bioscientist’s introduction to computing and coding concepts	1
IFDM1009	R programming for bioinformatics	1–2
IFDM1010	A Bioscientist’s practical training in data analysis	1–2
IFDM2002	Flow Cytometry Practical Training	1
IFDM2003	Imaging Immunology - lectures and practical training	2
IFDM2004	Flow cytometry online course	1
MBID0025	Introduction to Immunoassays in Diagnostics	1
PGS_1675	Laboratory Animal Science Course (ENG)	3–6
	Research method training offered by the graduate school and other research method training	0-13
Studies supporting mobility and professional career		**2-15 ECTS**
	TECH Participation and poster/oral presentation in an international/national scientific conference	1-3 ECTS/ conference
	Research Visit	0-10
	Internship	0-10
	International Internship	0-10
Teaching practice		2-15
	TECH Teaching practice (Teaching in higher education institution or supervising undergraduate students.)	2-15
Other discipline-specific studies		
	Scientific publication (not a part of the doctoral thesis)	0-4
	Book exam or literature review	0-10
General studies aiming for expertise		**4-15 ECTS**
Ethics of Academic Research (obligatory 2 ECTS)		**2 ECTS**
PGS_1668 PGS_1012 UGSY0001	Philosophy of Medicine (Obligatory Course in English) or Lääketieteen tieteenteoria ja etiikka (pakollinen kurssi suomeksi) or Ethics of Academic Research	2

ImmuDocs postgraduate studies / Faculty of Technology

Recommended general studies		**0-13 ECTS**
IFDM1001	Presentations and Communication – Essential Tools and Tips	1
IFDM1002	Business, Innovation and Market Access–Pharma Market and Value of Medicines	3
IFDM1003	InFLAMES Professional Development	1
IFDM1004	Publishing and Scientific Writing	1
IFDM1007	Key elements in leading a pharmaceutical company	1
UGSB0007	Leadership in contemporary working life	3
UGSH0006	Three Minute Thesis training	1
UGSL0002	Research Data Management	3
KK-PHD-ENG603	Grant Writing for Doctoral Researchers (Life and Natural sciences), R7, Online teaching (University of Helsinki)	*1*
Recommended general studies		**0-13 ECTS**
	Public outreach	0-6
	Language and communication studies	0-8
	University pedagogy	0-10
	Professional and career studies	0-8
	Project planning and management	0-8
	Entrepreneurship and leading skills	0-8
	Departmental activities	0-5