

INTEGRATIVE LIFE SCIENCE (ILS) DOCTORAL PROGRAM

DEGREE STRUCTURE – starting 1.8.2020

Note that the curriculum is to a large extent choice-based and may contain optional courses and studies not listed here.

Obligatory parts of the curriculum are marked in red. Numbers after the courses indicate ECTS study credits.



1. Doctoral Thesis

2. Scientific Content Studies 30

2.1. General Scientific Competence ≥10

- ILS Introductory course 1
- ILS Workshop & Retreat 1
- Research Ethics for Health Scientists (or other courses) 1
- Scientific conferences in Finland and abroad 2/event, max 6
- ILS Student Symposium
- Philosophy of science 2
- Laboratory Animal Science 2-5
- Book exam 1-5
- Literature Review 2
- Viikki Monday Seminars 2
- Statistical analysis with SPSS 5
- Basics in Linux 1-2
- Advanced Linux 1-2
- Course in R 1-5
- Mentoring, leadership and project management 1-5
- Research visit
- Scientific seminars
- Article outside thesis
- Elective course(s)

2.2. Thematic Scientific Competence ≥15

ILS students are recommended to take courses from at least two categories

Proteomics and Metabolomics

- Proteomics 1 2
- Proteomics 2A: Analysis of Protein Complexes 4
- Proteomics 2B: Data Analysis in Quantitative Proteomics 4
- Elective course(s)

Genetics and Genomics

- NGG Pre-Symposium Journal Club 1
- NGG Symposium 1-2
- Next Generation Genomics Workshop I 2
- Next Generation Genomics Workshop II 2
- Genome Club 1-2
- Genetic and genomic technologies in health care 4
- Elective course(s)

Developmental Biology and Physiology

- Evo-devo of vertebrate systems 5
- Developmental biology journal club 2
- Growth factors and their receptors 3-5
- Stem Cells and organogenesis 5
- Elective course(s)

Cell and Molecular Biology

- Imaging technologies in biological sciences 2
- Special symposium on advanced imaging techniques 2
- Light microscopy - practical course 2
- EM practical course 3
- Cell Biology Club 1-2
- Elective course(s)

Bioinformatics and Systems Biology

- Introduction to Systems Biology 5
- Introduction to Bioinformatics 5
- Elective course(s)

Biochemistry, Biophysics and Structural Biology

- Introduction to Structural Biology and Biophysics 5
- Protein structure, function and folding 5
- Workshop on cryo-electron microscopy 2
- CryoEM image reconstruction workshop 2
- Elective course(s)

3. General Competence Studies 10

Communication and teaching

- Academic writing and editing 2
- Grant Writing I & II 1+1
- Principles of Peer Review 1
- Writing Doctoral Research 3
- Conference Presentations 2
- Academic Pitching 1
- Tieteen popularisointi - näin kerron tutkimuksestani 1
- Academic Rhetoric and argumentation 1
- Create a beautiful and credible scientific poster 2
- Theory of pedagogics 1-5
- Teaching in courses 1-2
- Shut Up & Write – A Weekly Open Workshop for Writers 1-3
- Facing the Final Frontier: Preparing the Doctoral Dissertation Book 1
- Principles of scientific writing 1 & 2 2+2
- Creative Scientists – Path towards breakthrough ideas 3
- Scientific Writing Boot Camp 2

Management & entrepreneurship

- Project management and Leadership 2
- Research Funding 1-2
- Introduction to quality management 1-2
- PhDs to Business life 3
- Company visits 1-2
- Working in a company 1-2
- Student council and doctoral programme/ school activities 1-2
- From Idea to Impact 2
- Innovate, Protect, Spin it off and Start it up 2

Career planning and development

- DSHealth Career Day 1
- PhD Career Course 2
- Designing Your Life – Preparing for Life after the PhD 2

Legislation

- IPR&Copyrights 1-2
- Biomedical view to patenting 2
- Medical and Bio Law 1-2
- Introduction to Labour Law 1-2

Basic research tools and skills

- Managing Scientific Information 1
- Open science online course 1
- Introduction to open data science 5
- Philosophy of Biological and Biomedical Sciences 3
- Science Communication and Public Engagement 1-5

Other courses

- Laboratory Animal Science 2-5
- Nordic Summit for Doctoral Candidates
- NorDoc PhD Summit Helsinki
- Optional courses 1-10