MSc Programme in Biomedical Imaging
– crossing borders of scientific disciplines between Turku Universities

Petra Miikkulainen
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Biomedical Imaging

Nanosscopic

Cell

In vitro tissue

Ex vivo

In vivo pre-clinical

Clinical
Master’s Degree Programme in Biomedical Imaging
120 ECTS
Master’s Degree Programme in Biomedical Imaging

- Jointly administered by the Department of Biosciences at Åbo Akademi University and the Faculty of Medicine at the University of Turku
- Open to students with a lower university degree equivalent to Finnish BSc Degree in Life Sciences or in a relevant field, biomedical or medical sciences, physics, engineering, chemistry etc.
- Duration 2 years, no tuition fees
- Language of instruction: English
- Quota max. 30 students/year
Unique Master’s Programme

• Builds on the bioimaging collaboration of Åbo Akademi and University of Turku

• Highly interdisciplinary, teaching advanced and most modern imaging technologies and principles of different imaging modalities

• Based on true strongholds in research, covering a wide range of research groups in several departments, for example:
  • cell biology
  • biophysics
  • nanotechnology
  • preclinical imaging
  • medical imaging (PET and University hospital)
The Programme aims to train professionals that will have a thorough understanding of diverse imaging technologies along with practical skills in a wide range of imaging methods and applications.

The structure of the studies:
120ECTS, 2 years

<table>
<thead>
<tr>
<th>Major subject studies in Biomedical imaging, mandatory courses</th>
<th>44 ECTS</th>
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<tbody>
<tr>
<td>Master’s thesis in Biomedical imaging</td>
<td>45 ECTS</td>
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<tr>
<td>thesis plan, seminar and practical laboratory part (25 ECTS)</td>
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<tr>
<td>written thesis (20 ECTS)</td>
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<td>Selectable/elective studies on different thematic areas and special themes</td>
<td>23 ECTS</td>
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<td>Language studies</td>
<td>8 ECTS</td>
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Multidisciplinary Curriculum

Curriculum consists of both theory and practice:
- Light microscopy, both basic and advanced techniques
- Electron microscopy
- Tissue imaging and histopathology
- Nuclear medicine and magnetic resonance imaging
- Tomographic imaging techniques
- In vivo non-invasive imaging
- Nanotechnology
- Fluorescent probes, dye indicators and radiochemistry used in light microscopic and nuclear imaging modalities
- Biophysics
- Image and data analysis tools, software development
- Multimedia and video making, visual arts
Specialisation Themes for Master´s Thesis

- Light microscopy imaging
- In vivo and clinical imaging
- Imaging in nanotechnology and material science
- Microscopy techniques and instrument design
## Programme statistics

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<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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<tr>
<td>Applications</td>
<td>115</td>
<td>136</td>
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<td>115</td>
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<td>Admitted</td>
<td>27</td>
<td>39</td>
<td>34</td>
<td>36</td>
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<tr>
<td>Arrived</td>
<td>9</td>
<td>17</td>
<td>18</td>
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<tr>
<td><strong>Background</strong></td>
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<tr>
<td></td>
<td>biotechnology engineer, MD, dentist, bioscientists, BSc in radiology, biochemist</td>
<td>engineers, MBBSs, MDs, bioscientists, BScs in radiology technology</td>
<td>electrical and biomedical engineers, MBBSs, MDs, bioscientists, physicists, veterinary laboratory technician, dentist</td>
<td>electrical and biomedical engineers, MBBSs, bioscientists, dentists, teacher</td>
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<td><strong>Nationalities</strong></td>
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<td>Azerbaizan, Ethiopia, Finland, India, Italy, Libya, Vietnam, Turkey</td>
<td>Bangladesh, Cameroon, China, Egypt, Finland, Hungary, India, Iran, Iraq, Kenya, Pakistan, Poland</td>
<td>Estonia, Finland, Ghana, India, Iran, Macedonia, Nepal, Nigeria, Pakistan, Russia, Taiwan</td>
<td>Bangladesh, Columbia, China, Egypt, Ethiopia, Finland, India, Iran, Nepal, Nigeria, Pakistan, Peru, Russia, Turkey, United Arab Emirates</td>
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</table>
Co-operators

Close co-operators:

- The National Turku PET Centre
- Turku Centre for Biotechnology
- Turku Center for Disease Modeling (TCDM)
- Turku University Hospital
- BID Technology

Official Erasmus-partner: University of Pecs, Hungary

Collaboration sites in the Nordic countries, elsewhere in Europe, USA (Chicago Northwestern University), and Asia

International lectures and courses, visiting teachers

Programme is actively looking for a new collaborations
In the heart of the matter – Steering Committee

Chair: John Eriksson, Professor, Åbo Akademi University
Vice-chairman Pekka Hänninen, Professor, University of Turku
Annika Meinander, PhD, Åbo Akademi University (ÅAU teacher tutor)
Sami Koho, PhD Student, University of Turku (UTU teacher tutor)
Markku Koulu, Professor, University of Turku
Jessica Rosenholm, PhD, docent, Åbo Akademi University
Anne Roivainen, Professor, Turku PET Centre, University of Turku
Pirjo Pakarinen, Docent, Turku Center for Disease Modeling (TCDM)
Heli Törmänen, Head of Administration, University of Turku
Pia Kallio, Head of Academic affairs, Åbo Akademi University
Cecilia Sahlgren, Docent, Turku Centre for Biotechnology
Diana Toivola, Docent, Åbo Akademi University
Ronald Österbacka, Professor, Åbo Akademi University
Heidi Karlsson, Study Advisor, Åbo Akademi
Eeva Rainio, PhD, programme coordinator, ÅAU/UTU
Maritta Löytömäki, PhD, programme coordinator, ÅAU/UTU

Student members: 2nd year students
More information

www.med.utu.fi/bioimaging
www.abo.fi/bioimaging
www.bioimaging.fi

E-mail us: tbi-office@bioimaging.fi
Turku Bioimaging
From atoms to anatomy

- Maximize synergism
- Engage in complementary activities
- Promote regional and national development of imaging technologies and instrumentation
Turku Bioimaging facilities

- Cell Imaging Core (CIC)
- Turku PET Centre
- Turku Center for Disease Modeling
- EM core facility
- Imaging software development

More information at www.bioimaging.fi