

Biomedical imaging methods (1-4 ECTS)

Autumn 2012

Lectures (15 h):

November 12, 2012 (OYS lecture hall 6)

12:00 – 12:45	Seppo Vainio: Introduction to biomedical imaging.
13:00 – 14:30	Renata Prunskaitė-Hyyryläinen: Basics of optical projection tomography (OPT) and applications for <i>ex vivo</i> research.
14:45 – 16:15	Reetta Vuolteenaho: Basics and applications of <i>in vivo</i> optical imaging technique.

November 14, 2012 (lecture hall P117)

12:00 – 13:30	Joonas Autio: Basics of magnetic resonance imaging (MRI).
14:00 – 15:30	Roberto Blanco: Applications of MRI for <i>ex vivo</i> and <i>in vivo</i> research.

November 26, 2012 (lecture hall F202)

14:00 – 15:30	Simo Saarakkala: Basics of FTIR and Raman spectroscopy and their applications for <i>ex vivo</i> research.
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December 3, 2012 (OYS lecture hall 6)

12:00 – 13:30	Simo Saarakkala: Basics of micro-CT imaging.
14:00 – 15:30	Mikko Finnilä: Applications of micro-CT imaging for <i>ex vivo</i> and <i>in vivo</i> research.

Demonstrations (6 h):

Joonas Autio	Magnetic resonance imaging (MRI)
Renata Prunskaitė-H.	Optical projection tomography (OPT)
Mikko Finnilä	Micro-CT imaging

December 10, 2012

12:00 – 13:30	Demo I (3 groups)
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December 11, 2012

12:00 – 13:30	Demo II (3 groups)
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December 12, 2012

12:00 – 13:30	Demo III (3 groups)
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Practical exercise + Report (optional):

Mikko Finnilä	Micro-CT imaging + image reconstructions.
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Written final exam (optional):

Written final exam based on the materials given from lectures, demonstrations, and practical exercise. The exam will be graded in a scale of 1-5.

Credits

1 ECTS	If a student returns a learning diary (totally ~2 pages) based on lectures and demonstrations.
2 ECTS	In addition to a learning diary, if a student conduct the practical exercise of micro-CT and returns an additional report for that.
4 ECTS	In addition to a learning diary and practical exercise, If a student takes a written final exam.

Registration to the course

Maximum of 30 students will be accepted to the course with first-come first-served basis. Registrations should be sent by email to: ritva.saastamoinen@oulu.fi

Contact persons

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