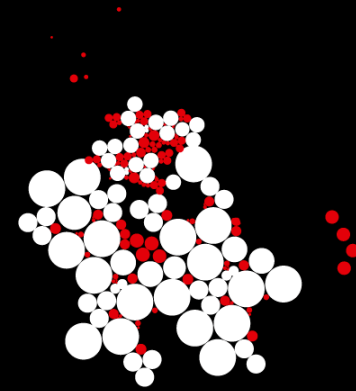
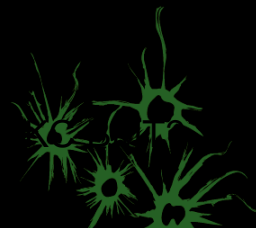


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# Master Biomedical Engineering

Nov 2015



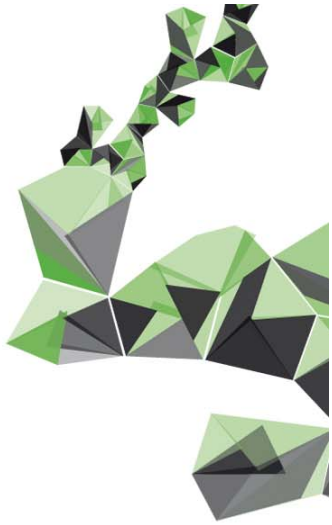


# Master Biomedical Engineering at UT

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- Interdisciplinary degree programme, combining engineering and the natural and life sciences
- Design and development of healthcare technology to improve lives

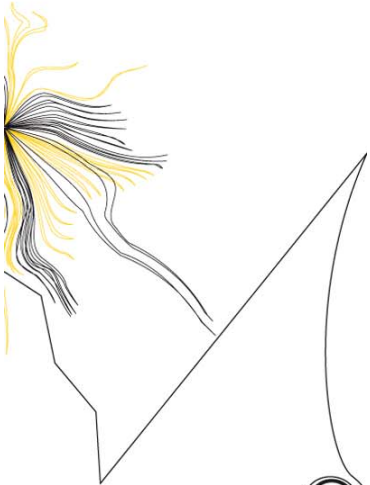




# Programme Master Biomedical Engineering

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- Two years programme.
  - First year: courses
  - Second year: Internship and Master Assignment
- A few compulsory courses
- Individual programme, you will work in close contact with research groups
- Choice of research group
- Relevant courses to prepare for the MSc Assignment and that reflect your interest.



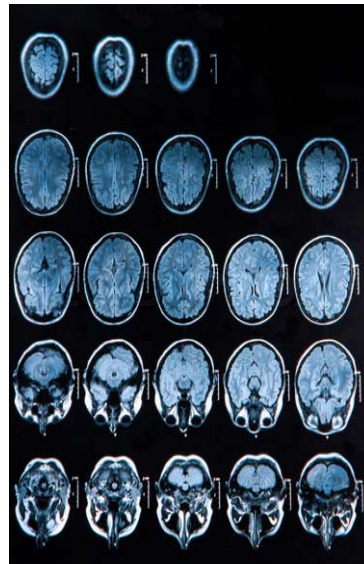
# THREE MASTER TRACKS:

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Bionanotechnology &  
Advanced  
biomanufacturing



Imaging & Diagnostics



Neural & Motor systems



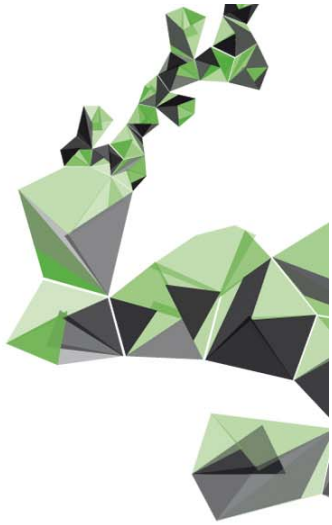
# Master track Bionanotechnology & Advanced Biomanufacturing

## Bionanotech & Advanced Biomanufacturing Track - compulsory courses

Course	Code	Lecturer	EC	Quartile			
				1	2	3	4
Tissue Engineering	193640040	van der Meer / van Apeldoorn	5				
Applied Cell Biology	201400330	Karperien	5				
Biomedical Materials Engineering	201400283	Poot	5				
Biostatistics	201400285	Poortema	5				

### Example of electives

Advanced Medical Imaging & Therapy Systems	Controlled Drug and Gene Delivery
AMM- Project Organic Materials	In vitro molecular diagnostics
Biomedical membranes & (bio) artificial organs	Lab on a Chip
Bionanotechnology	Nanomedicine
Biophysical Techniques & Molecular Imaging	Organic Chemistry of Polymers
Biophysics	Polymers and Material Science Practice
Clinical Chemistry	Polymers for Biomedical Applications
Colloids and Interfaces	



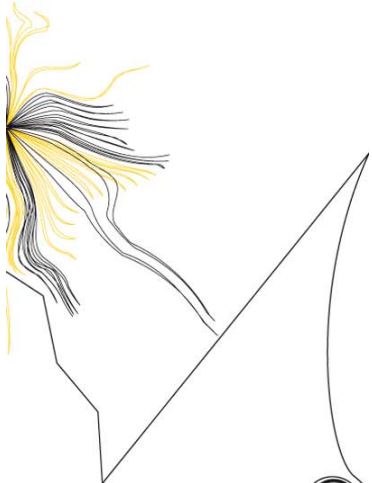
# Master Track Imaging and Diagnostics

## Imaging & Diagnostics Track - compulsory courses

Course	Code	Lecturer	EC	Quartile			
				1	2	3	4
Advanced Medical Imaging & Therapy Systems	201400281	Manohar	5				
Biophysical Techniques & Molecular Imaging	193640020	Otto, Blum	5				
In vitro molecular diagnostics	201400289	Beck	5				
Biostatistics	201400285	Poortema	5				

## Elective courses

Applied Cell Biology	Clinical Research Methods
Biomedical Materials Engineering	Health and Health Systems
Biomedical membranes & (bio) artificial organs	Image Processing and Computer Vision
Biomedical Optics	In vitro molecular diagnostics
Bionanotechnology	Introduction to the Finite Element Method
Biophysical Techniques & Molecular Imaging	Mathematical Methods
Biophysics	Nanomedicine
Biostatistics	Polymers for Biomedical Applications
Clinical Chemistry	Tissue Engineering





# Master track Neural & Motor Systems

## Neural & Motor Systems Track - compulsory courses

Course	Code	Lecturer	EC	Quartile			
				1	2	3	4
Technology for Health	201500222	Buitenweg	5				
Integrative Design of Biomedical Products	191150700	Verkerke / Hekman	5				
Clinical Research Methods	201400286	Buitenweg	5				
Biostatistics	201400285	Poortema	5				

Elective courses	
Advanced Medical Imaging & Therapy Systems	Identification of Human Motor Control
Advanced techniques for signal analysis	Introduction to the Finite Element Method
Bioelectromagnetics	Lab on a Chip
Biomechanics	Nonlinear Dynamics
Biomechatronics	Optimal Estimation in Dynamic Systems
Biomedical Signal Acquisition	Robotics for Medical Applications
Dynamic Behaviour of Neuronal Networks	System identification and parameter estimation
Ergonomics	Telemedicine: decision support and coach
Human Movement Control	Telemedicine: monitoring and analysis



## Second year

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- Internship
  - At Biom companies, research centers, hospitals
  - In the Netherlands or all over the world
- Master assignment
  - At the UT research group
  - Related to current research topics / projects





## Career prospects

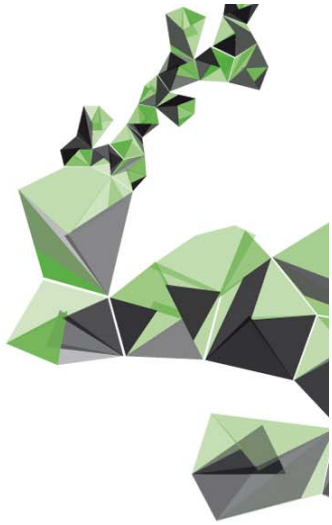
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- **Biomedical engineers work in:**

- Healthcare
- Industry
- Research institutions (including PhD positions)

- **Some examples of typical duties:**

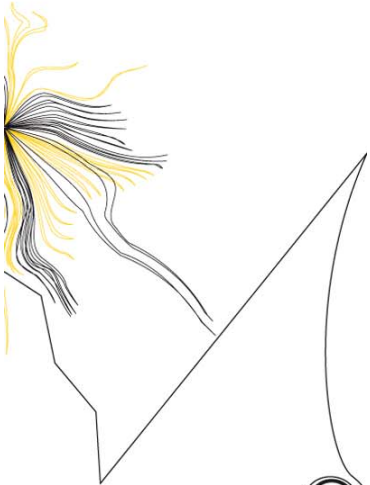
- Design systems and products such as artificial organs, body parts and machines for diagnosing medical problems
- Work with medical professionals to research the engineering aspect of biological systems
- Deal with technical queries, train and advise clinicians on the proper use of advanced medical equipment.

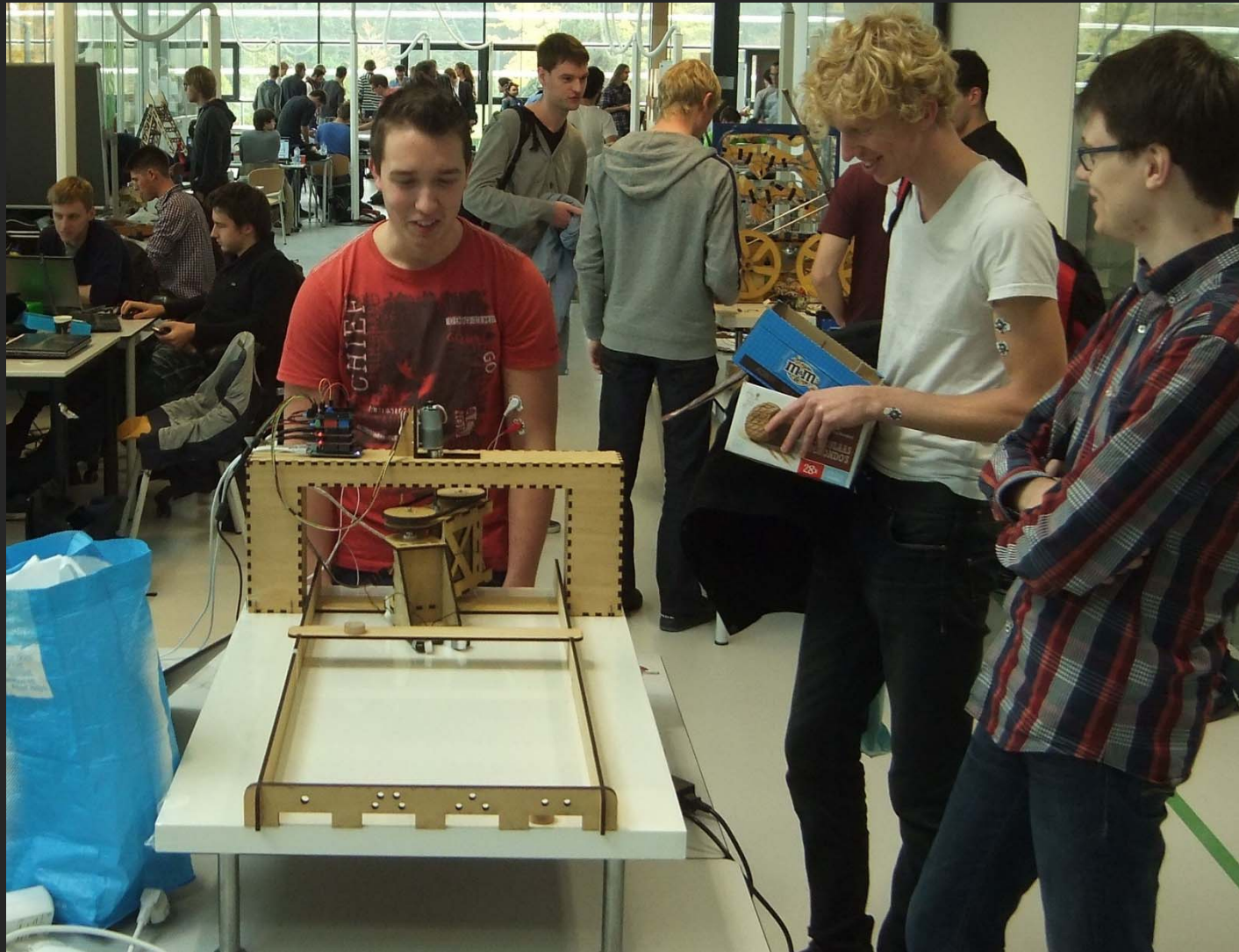


## Admission

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- Academic engineering Bachelor
- Relevant Ba assignment and courses
  - Modules
- BMT third year has three track dedicated modules that BMT student take to prepare for the master.
  - Q1 Neural and Motor Systems
  - Q2 Imaging and Diagnostics
  - Q3 Bionanotechnology

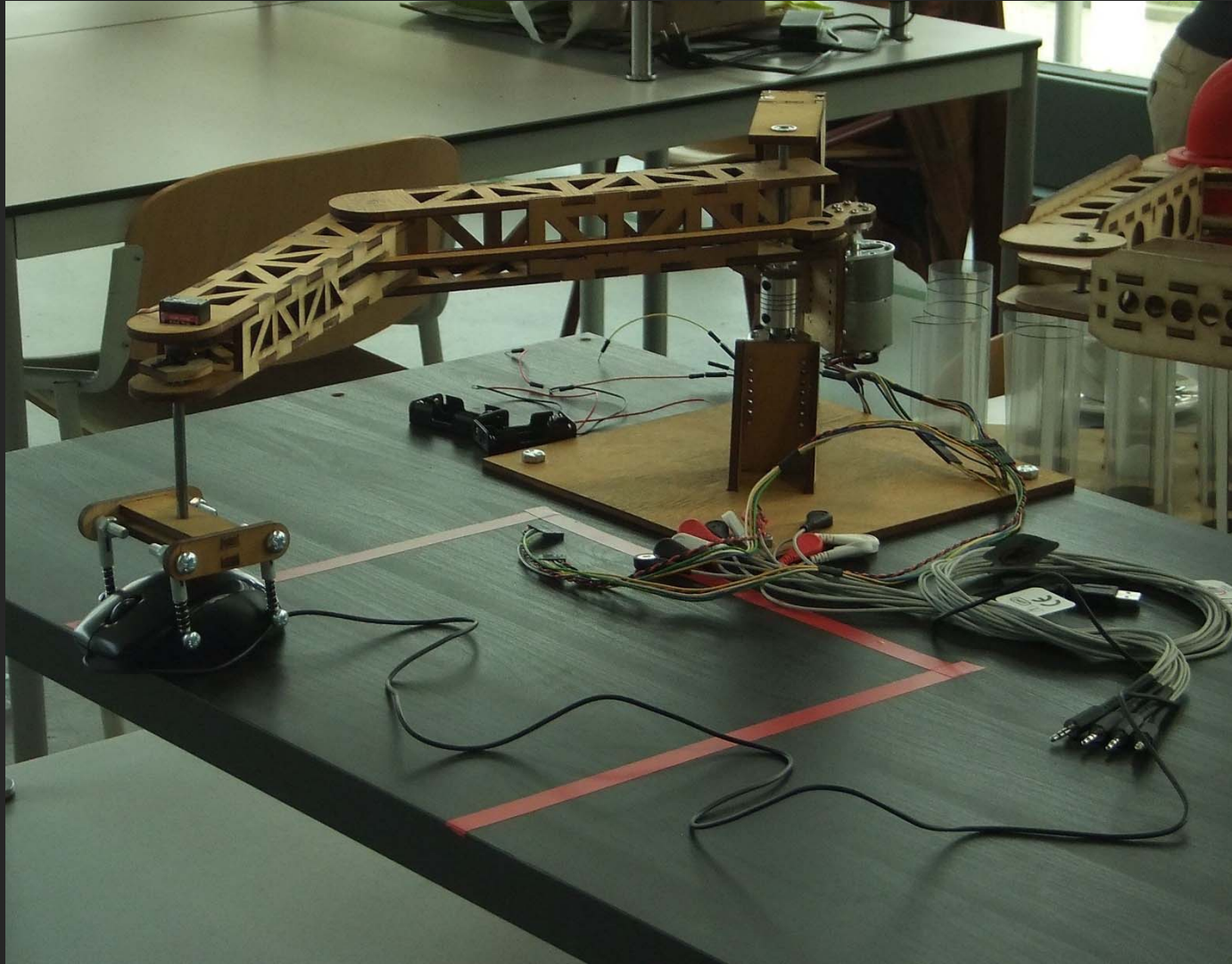




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## More information?

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- Visit the website of the research institute MIRA/ for more information about research themes and participating groups (topics, publications, assignments, PhD projects etc)

[www.utwente.nl/mira](http://www.utwente.nl/mira)

- Visit the BME website for more detailed information about the curriculum

[www.utwente.nl/bme](http://www.utwente.nl/bme)

- Individual situations contact me [t.vandam@utwente.nl](mailto:t.vandam@utwente.nl)

