

## INTERNATIONAL SEMESTERS

Academic year 2023-2024

# School of Chemical Industry

- Chemical and Materials Engineering autumn & spring semesters
- Energy and Environmental Engineering autumn & spring semesters
- Contact: [ana.kupri-karenmaa@turkuamk.fi](mailto:ana.kupri-karenmaa@turkuamk.fi)

## Chemical and Materials Engineering

Spring semester 2024 (January - end of April)

<b>Biomaterials and Bioprocesses 1* (recommended to take the module as a whole)</b>		
<b>Location: Kupittaa Campus, Turku / Mon &amp; Thu module</b>		
Course name	Course code	ECTS credits
<a href="#">Basics of Genetic Engineering and Diagnostics</a>	5021169	5
<a href="#">Biotechnological Processes and Downstream Processing</a>	5021220	5
<a href="#">Biomaterials and Tissue Engineering</a>	5021168	5
<b>Total</b>		<b>15</b>

<b>Materials Technology 1* (recommended to take the module as a whole)</b>		
<b>Location: Kupittaa Campus, Turku / Mon &amp; Thu module</b>		
Course name	Course code	ECTS credits
<a href="#">Basics of Material Technology</a>	5021223	5
<a href="#">Processing Technologies</a>	5021224	5
<a href="#">Selection of Materials</a>	5021225	5
<b>Total</b>		<b>15</b>

<b>Food Engineering 2* (recommended to take the module as a whole)</b>		
<b>Location: Kupittaa Campus, Turku / Mon &amp; Thu module</b>		
Course name	Course code	ECTS credits
<a href="#">Food Processes 2</a>	TE00BY03	10
<a href="#">Food Legislation and Food Hygiene and Safety</a>	TE00BX91	5
<a href="#">Food Project</a>	TE00BR60	5
<b>Total</b>		<b>15</b>

Innovation project		
Location: Kupittaa Campus, Turku / Tue & Fri module		
Course name	Course code	ECTS credits
<a href="#">Innovation Project</a> (Capstone)*	TE00BL66	10
<b>Total</b>		<b>10</b>

*\*Innovation project is typically a development project implemented in co-operation with a company or another external customer. However, the project may also be a part of Turku University of Applied Science's internal research and development activities or it can be based on a student's, student team's own project, or business idea. In addition, development projects related to different student competitions are applicable. Students select their preferred projects they want to work after exhibition.*

*After completing the course, the student can:*

- participate in systematic research and development activities as a responsible member of the project team
- describe the principles of project team operation and project control
- explain the importance of the project's goals to the business of the stakeholders
- use modern tools of project management in project planning and implementation
- solve problems related to project implementation
- apply his/her knowledge to achieve project goals
- document the project
- identify areas of further development related to one's professional skills and is able to deepen one's professional skills according to the project's goals
- evaluate his/her learning and professional development in the project.

More information: <https://innovaatioprojektit.turkuamk.fi/en/capstone-projektit-english/>

## Energy and Environmental Engineering

### Spring semester 2024 (January - end of April)

Climate Change			Prerequisites / quota of students / weekly schedule etc.
Location: Kupittaa Campus, Turku/online+ Mon & Thu module			
Course name + link to study guide	Course code	ECTS credits	
<a href="#">Climate.now basics</a>	TE00BT85	5	
<a href="#">Climate change guest lecture series</a>	TE00BT84	5	
<a href="#">Solutions.now</a>	TE00BR31	5	
<b>Total</b>		<b>15</b>	

Waste Management			
Course name + link to study guide	Course code	ECTS credits	Prerequisites / quota of students / weekly schedule etc.
<a href="#">Waste management in practice</a>	5100BI75	5	
<a href="#">Global waste management</a>	5100BI79	5	
<b>Total</b>		<b>10</b>	

Research Hatcheries on Circular Economy			
Location: Kupittaa Campus, Turku/ mainly Wednesdays			
Course name + link to study guide	Course code	ECTS credits	Prerequisites / quota of students / weekly schedule etc.
<a href="#">Research Hatcheries on Circular Economy (REHA)*</a>	TE00BQ93	2-10	
<b>Total</b>		<b>2-10</b>	

\*The Research Hatchery (REHA) is a model in which a multidisciplinary team of students works to solve a circular economy related brief. The need for the brief can rise from a research, development and innovation project, from a client in work life, or from a student. Research Hatchery is led by coaches, people working on the projects and student tutors. In a REHA students learn about the substance and they also develop their innovation competences: creativity, critical thinking, initiative, group work and networking. The student can participate in this course for a total of ECTS agreed with the course leader and depending on the needs to support their Learning Agreement. The amount ranges from 2 to 10 ECTS.

## Chemical and Materials Engineering

### Autumn semester 2023 (end of August - mid December)

Materials Technology 2* (recommended to take the module as a whole)		
Location: Kupittaa Campus, Turku / <b>Mon &amp; Thu module</b>		
Course name	Course code	ECTS credits
<a href="#">Processing of Plastics</a>	TE00BX98	5
<a href="#">Packing Technology</a>	TE00BX99	5
<a href="#">Project</a>	TE00BY00	5
<b>Total</b>		<b>15</b>

Biomaterials and Bioprocesses 2* (recommended to take the module as a whole)		
Location: Kupittaa Campus, Turku / <b>Mon &amp; Thu module</b>		

Course name	Course code	ECTS credits
<a href="#">Biomaterials Manufacturing Processes</a>	5021221	5
<a href="#">Biotechnological Production</a>	5021222	5
<a href="#">Methods in Biotechnology</a>	5021167	5
<b>Total</b>		<b>15</b>

<b>Food Engineering 1* (recommended to take the module as a whole)</b>		
<b>Location: Kupittaa Campus, Turku / Tuesdays &amp; Fridays module</b>		
Course name	Course code	ECTS credits
<a href="#">Food ingredients and raw materials</a>	TE00BV66	5
<a href="#">Product Development and Analytics</a>	TE00BV68	5
<a href="#">Food Processes 1</a>	TE00BX89	3
<a href="#">Sensory Analysis</a>	TE00BX90	2
<b>Total</b>		<b>15</b>

<b>Innovation project</b>		
<b>Location: Kupittaa Campus, Turku / Tue &amp; Fri module</b>		
Course name	Course code	ECTS credits
<a href="#">Innovation Project</a> (Capstone)*	TE00BL66	10
<b>Total</b>		<b>10</b>

\*Innovation project is typically a development project implemented in co-operation with a company or another external customer. However, the project may also be a part of Turku University of Applied Science's internal research and development activities, or it can be based on a student's, student team's own project, or business idea. In addition, development projects related to different student competitions are applicable. Students select their preferred projects they want to work after exhibition.

After completing the course, the student can:

- participate in systematic research and development activities as a responsible member of the project team
- describe the principles of project team operation and project control
- explain the importance of the project's goals to the business of the stakeholders
- use modern tools of project management in project planning and implementation
- solve problems related to project implementation
- apply his/her knowledge to achieve project goals
- document the project
- identify areas of further development related to one's professional skills and is able to deepen one's professional skills according to the project's goals
- evaluate his/her learning and professional development in the project.

More information: <https://innovaatioprojektit.turkuamk.fi/en/capstone-projektit-english/>

## Energy and Environmental Engineering

### Autumn semester 2023 (end of August - mid December)

Water conservation Kupittaa Campus, Turku/ Tue & Fri module			
Course name + link to study guide	Course code	ECTS credits	Prerequisites / quota of students / weekly schedule etc.
<a href="#">Introduction to the Baltic Sea on-line</a>	5100BI69	4	
<a href="#">Water conservation and technical solutions</a>	5100BI71	11	
<b>Total</b>		<b>15</b>	

Distributed Energy Systems Kupittaa Campus, Turku/ Mon & Thu module			
Course name + link to study guide	Course code	ECTS credits	Prerequisites / quota of students / weekly schedule etc.
<a href="#">Wind Power Systems</a>	TE00BX17	4	
<a href="#">Photovoltaic Systems</a>	TE00BX18	4	
<a href="#">Battery Storage systems</a>	TE00BX19	4	
<a href="#">Electricity markets</a>	TE00BX20	3	
<b>Total</b>		<b>15</b>	