

INTERNATIONAL SEMESTERS

Academic year 2021-2022

School of Chemical Industry

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Chemical and Materials Engineering

Autumn semester 2021 (end of August - mid December)

| Material Technology 2* (recommended to take the module as a whole) | | |
|---|--------------------|---------------------|
| Location: Kupittaa Campus, Turku / Mon & Thu module | | |
| Course name | Course code | ECTS credits |
| Processing of Plastics | 5021174 | 5 |
| Packing Technology | 5021175 | 5 |
| Project | 5021176 | 5 |
| Total | | 15 |

| Biomaterials and Bioprocesses 2* (recommended to take the module as a whole) | | |
|---|--------------------|---------------------|
| Location: Kupittaa Campus, Turku / Mon & Thu module | | |
| Course name | Course code | ECTS credits |
| Biomaterials Manufacturing Processes | 5021165 | 5 |
| Biotechnological Production | 5021166 | 5 |
| Methods in Biotechnology | 5021167 | 5 |
| Total | | 15 |

| Food Engineering 1* (recommended to take the module as a whole) | | |
|---|--------------------|---------------------|
| Location: Kupittaa Campus, Turku / Tue & Fri module | | |
| Course name | Course code | ECTS credits |
| Food ingredients and raw materials | 5021171 | 5 |
| Food processes and manufacturing and hygiene in food processing | 5021172 | 5 |
| Product development and analytics | 5021173 | 5 |
| Total | | 15 |

Energy and Environmental Engineering

Autumn semester 2021 (end of August - mid December)

| Distributed Energy Systems <i>(recommended to take the module as a whole)</i> | | |
|--|-------------|--------------|
| Location: Kupittaa Campus, Turku / Mon & Thu module | | |
| Course name | Course code | ECTS credits |
| Photovoltaic Systems | 5131119 | 5 |
| Battery and Storage Systems | 5131120 | 5 |
| Distributed Energy Systems | 5131121 | 5 |
| Total | | 15 |

| Water Conservation and Technical Solutions <i>(recommended to take the module as a whole)</i> | | |
|--|-------------|--------------|
| Location: Kupittaa Campus, Turku / Tue & Fri module | | |
| Course name | Course code | ECTS credits |
| Introduction to the Baltic Sea | 5131079 | 4 |
| Water Conservation and Technical Solutions | 5131107 | 11 |
| Total | | 15 |

Chemical and Materials Engineering

Spring semester 2022 (January - mid May)

**preliminary course plan, changes possible*

| Biomaterials and Bioprocesses 1* <i>(recommended to take the module as a whole)</i> | | |
|--|-------------|--------------|
| Location: Kupittaa Campus, Turku / Mon & Thu module | | |
| Course name | Course code | ECTS credits |
| Basics of Genetic Engineering and Diagnostics | 5021169 | 5 |
| Biotechnological Processes and Downstream Processing | 5021170 | 5 |
| Biomaterials and Tissue Engineering | 5191007 | 5 |
| Total | | 15 |

| Materials Technology 1* <i>(recommended to take the module as a whole)</i> | | |
|---|-------------|--------------|
| Location: Kupittaa Campus, Turku / Mon & Thu module | | |
| Course name | Course code | ECTS credits |
| Basics of Material Technology | 5021156 | 5 |
| Processing Technologies | 5021157 | 5 |
| Selection of Materials | 5021158 | 5 |
| Total | | 15 |

| Food Engineering 2* (recommended to take the module as a whole) | | |
|--|--------------------|---------------------|
| Location: Kupittaa Campus, Turku / Mon & Thu module | | |
| Course name | Course code | ECTS credits |
| Food Processing 2 | TE00BY03 | 5 |
| Food Legislation and Food Hygiene | TE00BX91 | 5 |
| Food Project | TE00BR60 | 5 |
| Total | | 15 |

| Innovation Project “Capstone” | | |
|--|--------------------|---------------------|
| Location: Kupittaa Campus, Turku / Tue & Fri module | | |
| Course name | Course code | ECTS credits |
| Innovation Project (Capstone) | TE00BL66 | 10 |
| Total | | 10 |

**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/>

| Optional course | | |
|--|--------------------|---------------------|
| Location: Kupittaa Campus, Turku / Tue & Fri module | | |
| Course name | Course code | ECTS credits |
| Renewable Energy Production | TE00BX94 | 7 |
| | | |

| Optional Waste Management module (recommended to take all courses) | | |
|---|--------------------|---------------------|
| Online courses | | |
| Course name | Course code | ECTS credits |
| Waste Treatment | 5131116 | 5 |
| Global Waste Management | 5131118 | 5 |
| Life Cycle Management | LC00BS48 | 5 |
| Total | | 15 |

Energy and Environmental Engineering

Spring semester 2022 (January – end of April)

**preliminary course plan, changes possible*

| Renewable Energy Fundamentals (recommended to take the module as a whole) | | |
|--|-------------|--------------|
| Location: Kupittaa Campus, Turku / Tue & Fri module | | |
| Course name | Course code | ECTS credits |
| Renewable Energy Production | TE00BX94 | 7 |
| Introduction to Power Electronics | TE00BX96 | 5 |
| Total | | 12 |

| Renewable Energy Projects (REP) (recommended to take the module as a whole) | | |
|--|-------------|--------------|
| Location: Kupittaa Campus, Turku / Mon & Thu module | | |
| Course name | Course code | ECTS credits |
| Renewable Energy Project Development | TE00BX21 | 10 |
| Renewable Energy Laboratory Project | TE00BX22 | 5 |
| Total | | 15 |

| Waste Management (recommended to take the module as a whole) | | |
|---|-------------|--------------|
| Online courses | | |
| Course name | Course code | ECTS credits |
| Waste Treatment | 5131116 | 5 |
| Global Waste Management | 5131118 | 5 |
| Life Cycle Management | LC00BS48 | 5 |
| Total | | 15 |

| Optional courses | | |
|---|--------------|--------------|
| The schedule will be planned with the project team | | |
| Course name | Course code | ECTS credits |
| Research Hatcheries on Circular Economy (REHA)* | TE00BQ93 | 2-10 |
| | Total | 2-10 |

**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 in 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.*