CHEM-C2340 - Industrial Biomass Processes, 10.01.2024-20.03.2024

Credits: 5

Teacher in charge

Thaddeus Maloney, Eero Hiltunen

Teaching Period

III-IV

Learning Outcomes

After the course the student :
- recognizes different types of unit operations and industrial scale processes used in biomass
valorization, conversion, bioprocessing and paper/board making
- knows the basic principles of these processes
- recognizes the main products manufactured with these processes and production plants
- understands the role of environmental technologies in industrial production processes
- understands how raw materials are used in a sustainable manner in production processes.

Content

- Unit operations and processes
- Bioprocess technology processes
- Biorefineries and pulp production processes
- Paper and board manufacturing processes
- Production processes for mechanical wood products
- Industrial environmental technologies
- Sustainability

Evaluation

Exam 100% of grade

Lecture schedule

Date	Lecture	Lecturer	Time,
10.1.24	Introduction	Maloney	10:15-12:00
17.1.24	Paper industry unit ops	Maloney	10:15-12:00
24.1.24	Board structure and raw materials	Hiltunen	10:15-12:00
31.1.24	No class!	----------	----------
7.2.24	Wood products and composites	Rautkari	10:15-12:00
14.2.24	No class! (Reading material on Sustainability in bioindustry)	----------	----------
(21.2.24)	(evaluation week)	---------	----------
28.2.24	Industrial Drying	Paltakari	8:15-10:00
6.3.24	Paper and board - Finishing and printing	Hiltunen	8:15-10:00
13.3.24	Paper and board converting	Hiltunen	8:15-10:00
20.3.24	Pulping and biorefinery	Quang	8:15-10:00
27.3.24	Sustainable construction	Hughes	8:15-10:00
(3.4.24)	No class	---------	----------
(10.4.24)	No class	---------	----------
17.4.23	EXAM (remote exam through MyCourses)		13:00-14:30