| Metropolia UAS Biotechnology and Chemical Engineering 31.1.2022 | | | scienc | | | | | | | | | | | |
|---|--|----------------------------------|--|-------------------------|----------------------------|---|------------------------|---|-----------------------|--------|--------------------------|-------------------------|---------------------------------------|-----------------------|
| | | extent of credits | Strong engineering skills in mathematics and s | Good interaction skills | Skills to conduct projects | Clean and sustainable production technologies | Clean water production | Efficiency for using materials and energy | Learning to learn | Ethics | Operating in a workplace | Sustainable development | Internationality and multiculturalism | Proactive development |
| 1st Year of study | Orientation to Biotechnology and Chemical Engineering Orientation to Field and Studies Fundamentals of Chemistry 1 Introductory Project and Professional Communication Fundamentals of Chemistry 2 Fundamentals of Mathematics and Natural Sciences 1 Fundamentals of Mathematics and Natural Sciences 2 | 30 5 5 5 5 5 5 5 | X X X X | x x | x | | | | x x x x x | x | x x | x | | |
| | Introduction to the Industry The World of Microbes Math and Science Basics 3 Project Course in Biotechnology and Chemical Engineering Analytical and Organic Chemistry Industrial Processes and Materials In total | 30 5 5 10 5 5 | x x x | x | x | x | x x x | x | x x x | | x | x x | х | |
| 2nd Year of study | Becoming an Expert in Biotechnology and Chemical Engineering Engineering Chemistry Food Chemistry and Nutrition Statistics and Design of experiments Fluid mechanics and heat transfer basics Basics of Materials technology Engineering English and Communication Skills | 30 5 5 5 5 5 5 | x x x x | x | x | x x | x | x x x x | x | x | | x x x | × | |
| | Becoming an Engineer in Biotechnology and Chemical Engineering Process Design Basics Health, Safety and Environmental Responsibility Industrial Business Automation Technology Process Operation Control and Maintenance Engineering Swedish Finnish as a Second Language: Finnish at Work In total | _ | x x x | × | x | x x | x x x | x x | x x x | x x | x | x x | x x x | |
| 3rd Year of study | Phenomena and Unit Operations in Chemical Engineering Equilibria and kinetics Phenomena and material and energy balances in Process Technology Unit processes 1 Fluid Mechanics and Heat Transfer advanced course Plant Design basics Reactors and Catalysis | 30 5 5 5 5 5 5 | x x x x | | x | x x x x | x x x | x x x | | | | × | | |
| | Innovation and Sustainable Design of Processes Multidisciplinary Innovation Project Unit processes 2 Piping design Plant Design Advanced Course Lab Workshop, Chemical Engineering In total | 30 10 5 5 5 5 | x x x x x | x x | x x | x x x x | x x x | x x | x x | | х | x x | x x | |
| 4th Year of study | Bachelor's Thesis Bachelor's Thesis Work Placement Work Placement 1 Work Placement 2 | 15 30 15 15 | | x x x | х | x | x | х | х | | X X | x x x | X X | |
| | Elective Studies In total | 15 60 | | | | | | | | | | | | |