

University of Oulu
 Programme Structure Diagram 2020–2021
 Degree Programme in Biochemistry
 Molecular Medicine, Master's Programme in Biochemistry, Master of Science (2y) (2 years, 120 ECTS Credits)

Code and link to the course description in Oodi	Course name and ECST Credits	Preferred timing							
		1. academic year				2. academic year			
		autumn		spring		autumn		spring	
		1P	2P	3P	4P	1P	2P	3P	4P
	Obligatory Studies (50 ECTS credits)								
744626S	Protein chemistry II*, 5 ECTS cr, autumn		5						
744627S	Molecular biology II*, 5 ECTS cr, autumn		5						
747618S	Protein production and analysis 10 ECTS, 1st autumn*								
744628S	Orientation to Research Work and			5		5			
744629S	Orientation to Biochemical Work, Total 10-20 ECTS cr								
744691S	MSc thesis (Pro gradu) 30 ECTS cr					15			15
744692S	MSc thesis, additional experimental work (0-30 ECTS, in 5 ECTS blocks)						15	15	
740672S	Maturity test (M.Sc. degree), 0 ECTS cr								
	Total ECTS credits (Obligatory Studies)								
	Optional Studies (a minimum of 3 of these courses must be taken)								
744634S	Introduction to big data analysis and bioinformatics models 5 ECTS cr, spring				5				
743668S	Tumor cell biology 5 ECTS cr, spring				5				
743662S	Extracellular matrix 5 ECTS cr, autumn			5					
743663S	Developmental biology, stem cells and tissue engineering 5 ECTS cr, spring					5			
743664S	Hypoxia response pathway – molecular mechanisms and medical applications, 5 ECTS cr, autumn		5						
743665S	Molecular, cell biological and genetic aspects of diseases 5 ECTS cr, autumn			5					
	Other Optional studies								
902154Y	Scientific communication for biochemists , 5 ECTS, spring								
747616S	Biochemical methodologies II, 10 ECTS cr, 1st autumn								
744631S	Dissertation 15 ECTS cr								
743667S	Virology 5 ECTS cr, spring				5				
747614S	Macromolecular x-ray crystallography, 5 ECTS, autumn								
747613S	In silico methodologies in biochemistry and molecular medicine 5 ECTS cr, spring								
744625S	Scientific presentation 1-2 ECTS cr								
743666S	Introduction to Immunology 5 ECTS cr, spring								
740381A	Biochemical and biomedical Innovation, 2-5 ECTS cr								
743690S	Final examination in molecular medicine 10 ECTS cr								
744632S	Yeast genetics 5 ECTS cr, spring					5			
300002M	Advanced Information Skills (Science and Technology library Tellus) 1 ECTS cr								
747617S	Biochemistry and biotechnology of protein folding 5 ECTS cr, spring								
488321S	Bioreactor technology (Bioprocess Engineering Laboratory) 5 ECTS cr, autumn								
488305S	Advanced course for biotechnology (Bioprocess Engineering Laboratory), 5 ECTS cr, spring								
756627S	Plant hormones (Dept. of Biology) 4 ECTS cr, spring								
580402S	Biomedical Imaging Methods (Institute of Biomedicine), 1-5 ECTS cr								
040911S	Using animals in research - carrying out procedures, 3 ECTS cr, spring								
740079Y	Activities in University and Student Organizations, 1-10 ECTS cr, 1.-3.v								

	<i>Minor in Entrepreneurship 25 credits</i>								
724811P	Entrepreneurship for Tomorrow, 5 ECTS cr, yr1-yr2								
724812P	Building Change Through Entrepreneurship, 5 ECTS cr, yr1-yr2								
724813P	Entrepreneurship in Action, 5 ECTS cr, yr1-yr2								
724814P	Introduction to Business Development, 5 ECTS cr, yr1-yr2								
724815P	Entrepreneurial Assignment, 5 ECTS cr, yr1-yr2								
724816P	Building Business Through Creativity and Collaboration, 5 ECTS cr, yr1-yr2								
	Optional courses at any university								
	*Compulsory courses: either Protein chemistry II and Molecular biology II together (10 ECTS) or Protein production and analysis (10 ECTS) (only for students that have not attended Protein chemistry I).								
	Other suitable courses taught at any university (for minimum 120 credits of MSc Degree) will be accepted as optional studies. Courses given in research units eg. Biocenter Oulu will be accepted. Courses must be connected to biochemistry or logically support some aspect of it and they will have to be at an appropriate level. The content of the courses must not be too similar to other courses which have counted towards the students BSc degree or towards their MSc. In all cases Academic Officer Jari Heikkinen should be contacted to confirm acceptance / suitability. We would advise that this is done before the course is taken, especially in the case of courses taken from universities outside Finland.								
	ECTS Credits / Period (15 credits)	15	15	15	15	15	15	15	15
	ECTS Credits / Semester (30 credits)	30		30		30		30	
	ECTS Credits / Academic year (60 credits)	60				60			
	Degree (180 credits)	✗		120					

University of Oulu

Programme Structure Diagram 2020–2021

Degree Programme in Biochemistry

Protein science and biotechnology, Master's Programme in Biochemistry, Master of Science (2y) (2 years, 120 ECTS Credits)

Code and link to the course description in Oodi	Course name and ECST Credits	Preferred timing							
		1. academic year				2. academic year			
		autumn	spring	autumn	spring	autumn	spring	autumn	spring
		1P	2P	3P	4P	1P	2P	3P	4P
	Obligatory Studies (50 ECTS credits)								
744626S	Protein chemistry II*, 5 ECTS cr, autumn								
744627S	Molecular biology II*, 5 ECTS cr, autumn								
747618S	Protein production and analysis 10 ECTS, 1st autumn*	10							
747616S	Biochemical methodologies II, 10 ECTS cr, 1st autumn		10						
744628S	Orientation to Research Work and			5	5				
744629S	Orientation to Biochemical Work, Total 10-20 ECTS cr								
744691S	MSc thesis (Pro gradu) 30 ECTS cr					15			15
744692S	MSc thesis, additional experimental work (0-30 ECTS, in 5 ECTS blocks)						15	15	
740672S	Maturity test (M.Sc. degree), 0 ECTS cr								

	Total ECTS credits (Obligatory Studies)								
	Optional Studies (a minimum of 3 of these courses must be taken)								
744634S	Introduction to big data analysis and bioinformatics models 5 ECTS cr, spring			5					
747617S	Biochemistry and biotechnology of protein folding 5 ECTS cr, spring								
747615S	Introduction to structure-based drug discovery 5 ECTS cr, spring			2,5	2,5				
747614S	Macromolecular x-ray crystallography, 5 ECTS, autumn		5						
747613S	In silico methodologies in biochemistry and molecular medicine 5 ECTS cr, spring			5					
	Other Optional studies								
902154Y	Scientific communication for biochemists , 5 ECTS, spring			2,5	2,5				
744631S	Dissertation 15 ECTS cr								
744625S	Scientific presentation 1-2 ECTS cr								
747694S	Final examination in protein science and biotechnology 10 ECTS cr								
744632S	Yeast genetics 5 ECTS cr, spring								
743668S	Tumor cell biology 5 ECTS cr, spring								
743662S	Extracellular matrix 5 ECTS cr, autumn								
743663S	Developmental biology, stem cells and tissue engineering 5 ECTS cr, spring								
743664S	Hypoxia response pathway – molecular mechanisms and medical applications, 5 ECTS cr, autumn								
743667S	Virology 5 ECTS cr, spring								
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300002M	Advanced Information Skills (Science and Technology library Tellus) 1 ECTS cr								
488321S	Bioreactor technology (Bioprocess Engineering Laboratory) 5 ECTS cr, autumn		5						
488305S	Advanced course for biotechnology (Bioprocess Engineering Laboratory), 5 ECTS cr, spring								
580402S	Biomedical Imaging Methods (Institute of Biomedicine), 1-5 ECTS cr								
040911S	Using animals in research - carrying out procedures, 3 ECTS cr, spring								
740079Y	Activities in University and Student Organizations, 1-10 ECTS cr, 1.-3.v								
	<i>Minor in Entrepreneurship 25 credits</i>								
724811P	Entrepreneurship for Tomorrow, 5 ECTS cr, yr1-yr2								
724812P	Building Change Through Entrepreneurship, 5 ECTS cr, yr1-yr2								
724813P	Entrepreneurship in Action, 5 ECTS cr, yr1-yr2								
724814P	Introduction to Business Development, 5 ECTS cr, yr1-yr2								
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	Optional courses at any university								
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	Other suitable courses taught at any university (for minimum 120 credits of MSc Degree) will be accepted as optional studies. Courses given in research units eg. Biocenter Oulu will be accepted. Courses must be connected to biochemistry or logically support some aspect of it and they will have to be at an appropriate level. The content of the courses must not be too similar to other courses which have counted towards the students BSc degree or towards their MSc. In all cases Academic Officer Jari Heikkinen should be contacted to confirm acceptance / suitability. We would advise that this is done before the course is taken, especially in the case of courses taken from universities outside Finland.								
	ECTS Credits / Period (15 credits)	10	20	20	10	15	15	15	15
	ECTS Credits / Semester (30 credits)	30		30		30		30	
	ECTS Credits / Academic year (60 credits)		60				60		
	Degree (180 credits)	✗		120					