

Course Structure Diagram 2018-19**Master of Science (MSc)****Master's Programme in Protein Science and Biotechnology (for International students)****2 years, 120 ECTS credits**

(Students starting their studies in autumn 2018)

Code	Entities, courses, part of courses and scope	1st year		2nd year	
		autumn	spring	autumn	spring
	Obligatory Studies (60 ECTS credits)				
747618S	Protein production and analysis 10 ECTS cr, 1st autumn	10			
747616S	Biochemical methodologies II, 10 ECTS cr, 1st autumn	10			
744628S 744629S	Orientation to Research Work and/or Orientation to Biochemical Work, Total 10-20 ECTS cr 1st spring		10		
744691S	MSc thesis (Pro gradu) 30 ECTS cr				30
744692S	MSc thesis, additional experimental work (0-30 ECTS, in 5 ECTS blocks)			30	
740672S	Maturity test (M.Sc. degree), 0 ECTS cr				
	Total ECTS credits (Obligatory Studies)	20	10		30
	Optional Studies (a minimum of 3 of these courses must be taken)				
747617S	Biochemistry and biotechnology of protein folding 5 ECTS cr, spring		5		
744630S	Systems biology 5 ECTS cr, spring				
747615S	Introduction to structure-based drug discovery 5 ECTS cr, spring		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				
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				
902154Y	Scientific communication for biochemists , 5 ECTS, spring		5		
740381A	Biochemical and biomedical Innovation, 2-5 ECTS cr				
030008P	Information Skills for foreign degree students 1 ECTS cr (Science and Technology library Tellus)				
488321S	Bioreactor technology (Bioprocess Engineering Laboratory) 5 ECTS cr, autumn	5			
488305S	Advanced course for biotechnology (Bioprocess Engineering Laboratory), 5 ECTS cr, spring				
040911S	Using animal in research – carrying out procedures (Laboratory Animal Centre) 3 ECTS cr, spring (probably course is not organized every year in English)				
	<i>Minor in Entrepreneurship 25 credits</i>				
724811A	Entrepreneurship for Tomorrow, 5 ECTS cr, yr1-yr2				
724812A	Building Change Through Entrepreneurship, 5 ECTS cr, yr1-yr2				
724813A	Entrepreneurship in Action, 5 ECTS cr, yr1-yr2				
724814A	Introduction to Business Development, 5 ECTS cr, yr1-yr2				
724815A	Entrepreneurial Assignment, 5 ECTS cr, yr1-yr2				
724816A	Building Business Through Creativity and Collaboration, 5 ECTS cr, yr1-yr2				
	Any other MSc level course offered by the Faculty of biochemistry and molecular medicine.				
	Total ECTS credits (Optional studies)	10	20	0	0
	Optional studies at any university				

	<p>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.</p>				
	Total ECTS credits / Term	30	30	30	30
	Total ECTS credits / Academic Year		60		60
	Total of ECTS credits / Master's Degree				120