

## BIOTECHNOLOGY

UNDERGRADUATE DEGREE PROGRAMME DETAILS 2012-13

YEAR ONE (60 credits)						
SEMESTER	MODULE	AREA	SUBJECT	SUBJECT CODE	ECTS	TPOLOGY
1	Chemistry for Molecular Biosciences	Chemistry	<b>General Chemistry</b>	<b>202001</b>	<b>6</b>	Core Subject
1	Physics, Mathematics and Computing for Molecular Biosciences	Physics	<b>Physics</b>	<b>202002</b>	<b>6</b>	Core Subject
		Mathematics	<b>Algebra and Fundamentals of Analysis</b>	<b>202003</b>	<b>6</b>	Core Subject
		Computer Science	<b>Computer Science</b>	<b>202004</b>	<b>6</b>	Core Subject
1	Fundamentals of Biology, Microbiology and Genetics	Biology	<b>Cell Biology</b>	<b>202005</b>	<b>6</b>	Core Subject
2	Biochemistry and Molecular Biology	Biochemistry	<b>Biochemistry: Biomolecules</b>	<b>202006</b>	<b>6</b>	Core Subject
2	Fundamentals of Biology, Microbiology and Genetics	Biology	<b>Animal and Plant Biology</b>	<b>202007</b>	<b>6</b>	Core Subject
2	Chemistry for Molecular Biosciences	Chemistry	<b>Organic Chemistry</b>	<b>202008</b>	<b>6</b>	Core Subject
2	Fundamentals of Biology, Microbiology and Genetics	Biology	<b>Genetics</b>	<b>202009</b>	<b>6</b>	Core Subject
2	Physics, Mathematics and Computing for Molecular Biosciences	Mathematics	<b>Mathematical Analysis</b>	<b>202010</b>	<b>6</b>	Core Subject

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YEAR TWO (60 credits)						
SEMESTER	MODULE	AREA	SUBJECT	SUBJECT CODE	ECTS	TYPOLGY
1	Biochemistry and Molecular Biology	Genetic Engineering	<b>Genetic Engineering</b>	<b>202011</b>	6	Compulsory Subject
1		Biochemistry	<b>Biochemistry: Metabolism and Its Regulation</b>	<b>202012</b>	6	Core Subject
1	Fundamentals of Biology, Microbiology and Genetics	Biology	<b>Microbiology</b>	<b>202013</b>	6	Core Subject
1	Chemistry for Molecular Biosciences	Chemical Thermodynamics and Kinetics	<b>Chemical Thermodynamics and Kinetics</b>	<b>202014</b>	6	Compulsory Subject
1	Fundamentals of Biology, Microbiology and Genetics	Plant Physiology	<b>Plant Physiology</b>	<b>202015</b>	6	Compulsory Subject
2	Bioengineering and Biotechnological Processes. Biotechnological Processes	Fundamentals of Biochemical Engineering	<b>Fundamentals of Biochemical Engineering</b>	<b>202016</b>	6	Compulsory Subject
2	Fundamentals of Biology, Microbiology and Genetics	Virology	<b>Virology</b>	<b>202017</b>	4.5	Compulsory Subject
2	Biochemistry and Molecular Biology	Physiology and Microbial Metabolism	<b>Physiology and Microbial Metabolism</b>	<b>202018</b>	4.5	Compulsory Subject
2	Physics, Mathematics and Computing for the Molecular Biosciences	Statistics	<b>Biostatistics</b>	<b>202019</b>	4.5	Core Subject
2	Biochemistry and Molecular Biology	Molecular Genetics	<b>Molecular Genetics</b>	<b>202020</b>	4.5	Compulsory Subject
			<b>Optional Subject I</b>		6	<b>Optional Subject</b>

**Comentado [SDP1]:** NO APARECE EN GUÍAS DOCENTES EN ESPAÑOL

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YEAR THREE (60 credits)						
SEMESTER	MODULE	AREA	SUBJECT	SUBJECT CODE	ECTS	TYPOLGY
1	Fundamentals of Biology, Microbiology and Genetics	Animal Physiology	<b>Animal Physiology</b>	<b>202021</b>	<b>6</b>	Compulsory Subject
1	Bioengineering and Biotechnological Processes.	Basic Operations	<b>Basic Operations</b>	<b>202022</b>	<b>4.5</b>	Compulsory Subject
1			<b>Operations of Separation</b>	<b>202023</b>	<b>4.5</b>	Compulsory Subject
1	Bioengineering and Biotechnological Processes. Biological systems	Plant Biotechnology	<b>Plant Biotechnology</b>	<b>202024</b>	<b>4.5</b>	Compulsory Subject
1		Microbial Biotechnology	<b>Microbial Biotechnology</b>	<b>202025</b>	<b>4.5</b>	Compulsory Subject
			<b>Optional Subject II</b>		<b>6</b>	<b>Optional Subject</b>
			<b>Optional Subject III</b>		<b>6</b>	<b>Optional Subject</b>
2	Bioengineering and Biotechnological Processes.	Bioreactors	<b>Bioreactors</b>	<b>202026</b>	<b>6</b>	Compulsory Subject
2	Instrumental Methods of Analysis and Molecular Systems Biology	Techniques and Intrumental Analysis	<b>Techniques and Intrumental Analysis</b>	<b>202027</b>	<b>6</b>	Compulsory Subject
2	Quantitative Instrumental Methods of Analysis and Molecular Systems Biology	Biocomputer science	<b>Biocomputer science</b>	<b>202028</b>	<b>6</b>	Compulsory Subject
2		Biomic Analysis	<b>Biomic Analysis</b>	<b>202029</b>	<b>6</b>	Compulsory Subject

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YEAR FOUR (60 credits)						
SEMESTER	MODULE	AREA	SUBJECT	SUBJECT CODE	ECTS	TYPOLOGY
1	Bioengineering and Biotechnological Processes. Biotechnological Processes	Biotechnological Processes	<b>Biotechnological Processes</b>	<b>202030</b>	<b>6</b>	Compulsory Subject
1	Fundamentals of Biology, Microbiology and Genetics	Immunology	<b>Immunology</b>	<b>202031</b>	<b>4.5</b>	Compulsory Subject
1	Bioengineering and Biotechnological Processes. Biological systems	Animal Biotechnology	<b>Animal Biotechnology</b>	<b>202032</b>	<b>4.5</b>	Compulsory Subject
1		Cell Cultures	<b>Cell Cultures</b>	<b>202033</b>	<b>4.5</b>	Compulsory Subject
1	Social and Economic Aspects of Biotechnology	Project Organization and Management	<b>Project Organization and Management</b>	<b>202034</b>	<b>4.5</b>	Compulsory Subject
2		Economy and Business Management	<b>Economy and Business Management</b>	<b>202035</b>	<b>4.5</b>	Compulsory Subject
2		Ethical and Legal Aspects of Biotechnology	<b>Ethical and Legal Aspects of Biotechnology</b>	<b>202036</b>	<b>4.5</b>	Compulsory Subject
2	Final Year Project	Final Year Project	<b>Final Year Project</b>	<b>202037</b>	<b>15</b>	Final Year Project
	Optional Subjects		<b>Optional Subject IV</b>		<b>6</b>	Optional Subject
	Optional Subjects		<b>Optional Subject V</b>		<b>6</b>	Optional Subject

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OPTIONAL SUBJECTS						
SEMESTER	MODULE	AREA	SUBJECT	SUBJECT CODE	ECTS	TYPOLOGY
2	Optional Subjects	Bioanalytical Chemistry	<b>Bioanalytical Chemistry</b>	<b>202046</b>	<b>6</b>	<b>Optional Subject</b>
2		Plant Metabolites of Biotechnological Interest	<b>Plant Metabolites of Biotechnological Interest</b>	<b>202049</b>	<b>6</b>	<b>Optional Subject</b>
2		Animal and Plant Resources in Biotechnology	<b>Animal and Plant Resources in Biotechnology</b>	<b>202051</b>	<b>6</b>	<b>Optional Subject</b>
1		Molecular Diagnostics	<b>Molecular Diagnostics</b>	<b>202112</b>	<b>6</b>	<b>Optional Subject</b>
1		Pharmaceutical Engineering and Design of Medicines	<b>Pharmaceutical Engineering and Design of Medicines</b>	<b>202044</b>	<b>6</b>	<b>Optional Subject</b>
1		Reproductive Technology and Gene Therapy	<b>Reproductive Technology and Gene Therapy</b>	<b>202113</b>	<b>6</b>	<b>Optional Subject</b>
2		Environmental Biotechnology	<b>Environmental Biotechnology</b>	<b>202039</b>	<b>6</b>	<b>Optional Subject</b>
2		Biotechnology of Extremophiles	<b>Biotechnology of Extremophiles</b>	<b>202040</b>	<b>6</b>	<b>Optional Subject</b>
2		Pharmacology and Toxicology	<b>Pharmacology and Toxicology</b>	<b>202107</b>	<b>6</b>	<b>Optional Subject</b>

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OPTIONAL SUBJECTS						
SEMESTER	MODULE	AREA	SUBJECT	SUBJECT CODE	ECTS	TYPOLOGY
1	Optional Subjects	Quality in Biotechnological Processes	<b>Quality in Biotechnological Processes</b>	<b>202041</b>	<b>6</b>	<b>Optional Subject</b>
1		Psychopharmacology	<b>Psychopharmacology</b>	<b>202047</b>	<b>6</b>	<b>Optional Subject</b>
1		Food Biotechnology	<b>Food Biotechnology</b>	<b>202038</b>	<b>6</b>	<b>Optional Subject</b>
2		Protein Chemistry and Engineering	<b>Protein Chemistry and Engineering</b>	<b>202048</b>	<b>6</b>	<b>Optional Subject</b>
2		Photosynthetic Microorganisms Culture and their Biotechnological Applications	<b>Photosynthetic Microorganisms Culture and their Biotechnological Applications</b>	<b>202050</b>	<b>6</b>	<b>Optional Subject</b>
2		External internship	<b>External internship</b>	<b>202052</b>	<b>6</b>	<b>Optional Subject</b>