

Sultanate of Oman
Ministry of Higher Education
Directorate General For
The Colleges of Applied Sciences
Academic Programmes Department



سلطنة عمان
وزارة التعليم العالي
المديرية العامة لكليات العلوم التطبيقية
دائرة البرامج الأكاديمية

BACHELOR OF SCIENCE

APPLIED BIOTECHNOLOGY STUDY PLANS



BACHELOR OF SCIENCE (APPLIED BIOTECHNOLOGY)

(Cont.)Major: Marine Applied Biotechnology

Semester 1

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
ENAP1001	English for Academic Purposes (1)	4	-	10	
ITDR1101	IT Fundamental	3	2	2	FPCS0900
CHEM1105	General Chemistry	3	2	3	
BIOT1101	Biology1	3	2	3	
MATH1007	Mathematics for Applied Biotechnology	2	1	2	FPMA0902
Total		15	7	20	

Semester 2

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
ENAP1002	English for Academic Purposes (2)	4	-	10	ENAP1001
BIOT1200	Biology2	3	2	3	BIOT1101
CHEM1205	Analytical Chemistry	3	2	3	CHEM1105
ALCR1101	Arabic Language Skills	3	3	0	
CHEM1206	Organic Chemistry	3	2	3	CHEM1105
Total		16	9	19	



BACHELOR OF SCIENCE (APPLIED BIOTECHNOLOGY)

(Cont.)Major: Marine Applied Biotechnology

Semester 3

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
ENGL2266	English for Specific Purposes (Applied Biotechnology)	3	-	6	
PHYS2105	General Physics	3	2	2	
BIOT2101	Molecular Biology	3	2	3	BIOT1200
BIOT2102	Genetics	3	2	2	BIOT1200
BIOT2103	Microbiology	3	2	3	BIOT1200
Total		15	8	16	

Semester 4

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
BIOT2200	Bioethics	2	2	-	
BIOT2201	Biochemistry	3	2	3	CHEM1206
BIOT2202	Cell Biology	3	2	3	BIOT1200
BIOT2203	Microbial Biotechnology	3	2	3	BIOT2103
ICCR1101	Islamic Culture	3	3	0	
Total		14	11	9	



BACHELOR OF SCIENCE (APPLIED BIOTECHNOLOGY)

(Cont.)Major: Marine Applied Biotechnology

Semester5

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
BIOT3100	Ecology	3	2	2	
BIOT3101	Marine Biology	3	2	2	BIOT1200
BIOT3102	Genetic Engineering	3	2	3	BIOT2101
BIOT3103	Immunology and Immunological Techniques	3	2	3	BIOT2101
OECR1101	Omani Economy	2	2	-	
	Elective (1)	3			
Total		17			

Semester 6

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
MCCR4101	Interpersonal Skills	2	2	0	
BSCR3001	Entrepreneurship	3	3	0	
BIOT3200	Methods in Proteomics.	3	-	6	BIOT3102
BIOT3201	Marine Biotechnology	3	2	3	BIOT3101
	Elective (2)	3			
	Elective (3)	3			
Total		17			



BACHELOR OF SCIENCE (APPLIED BIOTECHNOLOGY)

(Cont.)Major: Marine Applied Biotechnology

Semester 7

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
RMCR3101	Introduction to Research Methods	3	3	-	
BIOT4100	Biological Oceanography	3	2	2	BIOT3201
BIOT4101	Aquaculture	3	2	3	BIOT3101
BIOT4102	Marine Toxicology	3	2	3	BIOT3201
BIOT4103	Costal Management	2	2	-	
	Elective (4)	3			
Total		17			

Semester 8

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
BIOT4200	Project (Biotechnology Internship)	15	-	30	Completion of 111 Cr
Total		15			



BACHELOR OF SCIENCE (APPLIED BIOTECHNOLOGY)

Major: Food and Agriculture Applied Biotechnology

Semester 1

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
ENAP1001	English for Academic Purposes (1)	4	-	10	
ITDR1101	IT Fundamental	3	2	2	FPCS0900
CHEM1105	General Chemistry	3	2	3	
BIOT1101	Biology1	3	2	3	
MATH1007	Mathematics for Applied Biotechnology	2	1	2	FPMA0902
Total		15	7	20	

Semester 2

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
ENAP1002	English for Academic Purposes (2)	4	-	10	ENAP1001
BIOT1200	Biology2	3	2	3	BIOT1101
CHEM1205	Analytical Chemistry	3	2	3	CHEM1105
ALCR1101	Arabic Language Skills	3	3	0	
CHEM1206	Organic Chemistry	3	2	3	CHEM1105
Total		16	9	19	



BACHELOR OF SCIENCE (APPLIED BIOTECHNOLOGY)

(Cont.)Major: Food and Agriculture Applied Biotechnology

Semester 3

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
ENGL2266	English for Specific Purposes (Applied Biotechnology)	3	-	6	
PHYS2105	General Physics	3	2	2	
BIOT2101	Molecular Biology	3	2	3	BIOT1200
BIOT2102	Genetics	3	2	2	BIOT1200
BIOT2103	Microbiology	3	2	3	BIOT1200
Total		15	8	16	

Semester 4

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
BIOT2200	Bioethics	2	2	-	
BIOT2201	Biochemistry	3	2	3	CHEM1206
BIOT2202	Cell Biology	3	2	3	BIOT1200
BIOT2203	Microbial Biotechnology	3	2	3	BIOT2103
ICCR1101	Islamic Culture	3	3	0	
Total		14	11	9	



BACHELOR OF SCIENCE (APPLIED BIOTECHNOLOGY)

(Cont.)Major: Food and Agriculture Applied Biotechnology

Semester5

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
BIOT3100	Ecology	3	2	2	
BIOT3102	Genetic Engineering	3	2	3	BIOT2101
BIOT3103	Immunology and Immunological Techniques	3	2	3	BIOT2101
BIOT3104	Bio-Farming	3	2	2	BIOT1200
OECR1101	Omani Economy	2	2	-	
	Elective (1)	3			
Total		17			

Semester 6

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
MCCR4101	Interpersonal Skills	2	2	0	
BSCR3001	Entrepreneurship	3	3	0	
BIOT3200	Methods in Proteomics.	3	-	6	BIOT3102
BIOT3203	Introduction to Soils and Water Management	3	2	3	BIOT2101
	Elective (2)	3			
	Elective (3)	3			
Total		17			



BACHELOR OF SCIENCE (APPLIED BIOTECHNOLOGY)

(Cont.)Major: Food and Agriculture Applied Biotechnology

Semester 7

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
RMCR3101	Introduction to Research Methods	3	3	-	
BIOT4104	Agricultural and Food regulations & Policies	2	2	-	BIOT2101
BIOT4105	GMOs and Food Technology	3	2	3	BIOT2101
BIOT4106	Greenhouses and Hydroponics	3	2	3	BIOT2101
BIOT4107	Pest Control of Field Crops	3	2	2	BIOT1200
	Elective (4)	3			
Total		17			

Semester 8

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
BIOT4200	Project (Biotechnology Internship)	15	-	30	Completion of 111 Cr
Total		15			



BACHELOR OF SCIENCE (APPLIED BIOTECHNOLOGY)

Major: Environmental Applied Biotechnology

Semester 1

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
ENAP1001	English for Academic Purposes (1)	4	-	10	
ITDR1101	IT Fundamental	3	2	2	FPCS0900
CHEM1105	General Chemistry	3	2	3	
BIOT1101	Biology1	3	2	3	
MATH1007	Mathematics for Applied Biotechnology	2	1	2	FPMA0902
Total		15	7	20	

Semester 2

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
ENAP1002	English for Academic Purposes (2)	4	-	10	ENAP1001
BIOT1200	Biology2	3	2	3	BIOT1101
CHEM1205	Analytical Chemistry	3	2	3	CHEM1105
ALCR1101	Arabic Language Skills	3	3	0	
CHEM1206	Organic Chemistry	3	2	3	CHEM1105
Total		16	9	19	



BACHELOR OF SCIENCE (APPLIED BIOTECHNOLOGY)

(Cont.)Major: Environmental Applied Biotechnology

Semester 3

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
ENGL2266	English for Specific Purposes (Applied Biotechnology)	3	-	6	
PHYS2105	General Physics	3	2	2	
BIOT2101	Molecular Biology	3	2	3	BIOT1200
BIOT2102	Genetics	3	2	2	BIOT1200
BIOT2103	Microbiology	3	2	3	BIOT1200
Total		15	8	16	

Semester 4

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
BIOT2200	Bioethics	2	2	-	
BIOT2201	Biochemistry	3	2	3	CHEM1206
BIOT2202	Cell Biology	3	2	3	BIOT1200
BIOT2203	Microbial Biotechnology	3	2	3	BIOT2103
ICCR1101	Islamic Culture	3	3	0	
Total		14	11	9	



BACHELOR OF SCIENCE (APPLIED BIOTECHNOLOGY)

(Cont.)Major: Environmental Applied Biotechnology

Semester5

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
BIOT3100	Ecology	3	2	2	
BIOT3102	Genetic Engineering	3	2	3	BIOT2101
BIOT3103	Immunology and Immunological Techniques	3	2	3	BIOT2101
BIOT3105	Response to Biological & Chemical Threat and Forensics	3	2	3	BIOT2101
OECR1101	Omani Economy	2	2	-	
	Elective (1)	3			
Total		17			

Semester 6

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
MCCR4101	Interpersonal Skills	2	2	-	
BSCR3001	Entrepreneurship	3	3	-	
BIOT3200	Methods in Proteomics.	3	-	6	BIOT3102
BIOT3205	Environmental Biotechnology and Bioremediation	3	2	3	BIOT2101
	Elective (2)	3			
	Elective (3)	3			
Total		17			



BACHELOR OF SCIENCE (APPLIED BIOTECHNOLOGY)

(Cont.)Major: Environmental Applied Biotechnology

Semester 7

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
RMCR3101	Introduction to Research Methods	3	3	-	
BIOT4109	Scientific Basis of Environmental Laws.	2	2	-	
BIOT4110	Sustainable Energy - Exploration and Exploitation	3	2	3	BIOT3205
BIOT4111	Nature Conservation in Oman	3	1	4	
BIOT4112	Pollution Sources and Management of Liquid and Solid Waste	3	2	3	
	Elective (4)	3			
Total		17			

Semester 8

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
BIOT4200	Project (Biotechnology Internship)	15	-	30	Completion of 111 Cr
Total		15			



Applied Biotechnology Elective Courses For All Majors

Course code &No	Course Title	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
BIOT3106	Molecular Evolution and Genetic Variation	3	2	2	BIOT2101
INFT3002	Introduction to Bioinformatics	3	2	2	BIOT2101
BIOT3108	Entomology	3	2	2	BIOT1200
BIOT3110	Radiation Biology	3	2	2	BIOT1200 & PHYS2105
BIOT3208	Marketing Theory and Practice.	3	3	-	
BIOT4113	Entrepreneurship in Biotechnology	3	3	-	BSCR3001
BIOT4114	Science and Policy in Biodefense	3	3	-	
BIOT4115	Biofermentation and Downstream Processing	3	1	4	BIOT2203
BIOT4116	Introduction to Nanoscience and Nanobiotechnology	3	2	2	BIOT2101 & BIOT3110
BIOT4117	Environmental Impact Assessment and Monitoring	3	2	2	
BIOT4118	Job Search Techniques and Business Ethics	3	3	-	



Course code &No	Course Tit	Credit Hours	Contact Hours		Prerequisites
			Theory	Practice	
Non Marine Major					
BIOT3101	Marine Biology	3	2	2	BIOT1200
BIOT3201	Marine Biotechnology	3	2	3	BIOT3101
BIOT4100	Biological Oceanography	3	2	2	BIOT3201
BIOT4101	Aquaculture	3	2	3	BIOT3101
BIOT4102	Marine Toxicology	3	2	3	BIOT3201
Non Food and Agriculture Major					
BIOT3104	Bio-Farming	3	2	2	BIOT1200
BIOT3203	Introduction to Soils and Water Management	3	2	3	BIOT2101
BIOT4105	GMOs and Food Technology	3	2	3	BIOT2101
BIOT4106	Greenhouses and Hydroponics	3	2	3	BIOT2101
BIOT4107	Pest Control of Field Crops	3	2	2	BIOT1200
Non Environmental Major					
BIOT3105	Response to Biological & Chemical Threats and Forensics	3	2	3	BIOT2101
BIOT3205	Environmental Biotechnology and Bioremediation	3	2	3	BIOT2101
BIOT4110	Sustainable Energy - Exploration and Exploitation	3	2	3	BIOT3205
BIOT4111	Nature Conservation in Oman	3	1	4	
BIOT4112	Pollution Sources and Management of Liquid and Solid Waste	3	2	3	