



Bachelor of Science (B.Sc.) in Biotechnology

DEPARTMENT OF BIOTECHNOLOGY

FACULTY OF BASIC AND APPLIED SCIENCES

**COLLEGE OF SCIENCE, ENGINEERING
AND TECHNOLOGY**

**OSUN STATE UNIVERSITY, OSOGBO,
NIGERIA**

JULY 2024

B.Sc. DEGREE IN BIOTECHNOLOGY with Options in**General Biotechnology****Microbial Biotechnology****Plant Biotechnology****Animal Biotechnology****Molecular Biology and Bioinformatics****B.Sc. BIOTECHNOLOGY (GENERAL BIOTECHNOLOGY OPTION)****100 LEVEL HARMATTAN SEMESTER**

Course Code	Course Title	Units	Status
BIO 101	Basic Biology I	3	C
BIO 107	Experimental Biology I	1	C
CHM 101	General Chemistry I	3	C
CHM 107	Experimental Chemistry I	1	C
MTH 105	Algebra and Trigonometry for Biological Agricultural Science and Non-Science Major Students	3	C
PHY 101	General Physics I	3	C
PHY 107	Experimental Physics I	1	C
GNS 101	Use of English I	2	R
GNS 103	Use of Library	1	R
GNS 211	Basic French	2	R
	Total Unit	20	

100 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BIO 102	Basic Biology II	3	C
BIO 108	Experimental Biology II	1	C
CHM 102	General Chemistry II	3	C
CHM 108	Experimental Chemistry II	1	C
MTH 104	General Mathematics III (Vectors, Geometry & Dynamics)	3	C
MTH 106	Calculus for Biological, Agricultural Sciences and Non-Science Major Students	3	C
PHY 102	General Physics II	3	C
PHY 108	Experimental Physics II	1	C
GNS 102	Use of English II	2	R
GNS 104	Nigerian Peoples and Culture	2	R
GNS 212	Introduction to Information and Communication Technology	2	R
	Total Unit	24	

200 LEVEL HARMATTAN SEMESTER

Course Code	Course Title	Units	Status
BCH 201	General Biochemistry I	3	C
BCH 291	Experimental Biochemistry I	1	C
BIO 207	Introductory Genetics & Cell Biology	2	C
CHM 205	Physical Chemistry I	2	C
CHM 207	Inorganic Chemistry I	2	C
CHM 291	Experimental Physical/Inorganic Chemistry	1	C
FBS 201	History and Philosophy of Science	2	C
MCB 201	General Microbiology I	3	C
STA 229	Statistics for Agriculture & Biological Sciences	3	C
GNS 203	Introduction to Entrepreneurial Skills	2	R
Total Unit		21	

200 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BCH 202	General Biochemistry II	3	C
BCH 292	Experimental Biochemistry II	1	C
BIO 202	Biological Techniques	2	C
BTG 202	Introduction to Biotechnology	2	C
CHM 202	Organic Chemistry I	2	C
CHM 208	Physical Chemistry II	2	C
CHM 292	Experimental Physical/Organic Chemistry	1	C
CSC 208	Fundamentals of Data Structure	3	C
FBS 202	Peace Studies and Conflict Resolution	2	C
GNS 204	Logic and Philosophy	2	R
Total Unit		20	

300 LEVEL HARMATTAN SEMESTER

Course Code	Course Title	Units	Status
BIO 301	Genetics II	2	C
BTG 301	Molecular Genetics (Including Practicals)	4	C
BTG 303	Analytical Methods in Microbiology	3	C
BTG 305	Protein and Enzyme Chemistry	3	R
BTG 307	Entrepreneurship Studies in Biotechnology	2	C
BTG 309	Scientific Writing	1	C
MCB 401	Immunology and Immunochemistry	3	R
SOC 329	Industrial Sociology	3	C
Total Unit		21	

300 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BTG 399	SIWES	6	C
	Total Unit	6	

400 LEVEL HARMATTAN SEMESTER

Course Code	Course Title	Units	Status
BTG 401	Biotechnology Seminar	3	C
BTG 403	Methods in Recombinant DNA Technology	4	C
BTG 405	Nucleotide Sequence Analysis	3	C
BTG 407	Molecular Cell Biology	3	C
BTG 409	Plant Gene Transfer	4	R
	Choose One Elective		
BTB 301	Evolutionary Genetics	3	E
BTG 411	Process Biotechnology	3	E
BTG 413	Microtechniques and Tissue Culture	3	E
	Total Unit	20	

400 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BTG 402	Industrial Biotechnology	3	C
BTG 404	Metabolic Engineering	3	C
BTG 406	Bioresources Management	3	C
BTG 408	Biosafety Issues	1	C
BTG 410	Intellectual Property Rights & Bioethics	1	C
BTG 499	Research Project	6	C
	Choose One Elective		
BTG 412	Biochemical Separations	3	E
BTG 414	Biotechnology Robotics	3	E
BTG 416	Food Physical System	3	E
	Total Unit	20	

B.Sc. BIOTECHNOLOGY (MICROBIAL BIOTECHNOLOGY OPTION)**100 LEVEL HARMATTAN SEMESTER**

Course Code	Course Title	Units	Status
BIO 101	Basic Biology I	3	C
BIO 107	Experimental Biology I	1	C
CHM 101	General Chemistry I	3	C
CHM 107	Experimental Chemistry I	1	C
MTH 105	Algebra and Trigonometry for Biological Agricultural Science and Non-Science Major Students	3	C
PHY 101	General Physics I	3	C
PHY 107	Experimental Physics I	1	C
GNS 101	Use of English I	2	R
GNS 103	Use of Library	1	R
GNS 211	Basic French	2	R
	Total Unit	20	

100 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BIO 102	Basic Biology II	3	C
BIO 108	Experimental Biology II	1	C
CHM 102	General Chemistry II	3	C
CHM 108	Experimental Chemistry II	1	C
MTH 104	General Mathematics III (Vectors, Geometry & Dynamics)	3	C
MTH 106	Calculus for Biological, Agricultural Sciences and Non-Science Major Students	3	C
PHY 102	General Physics II	3	C
PHY 108	Experimental Physics II	1	C
GNS 102	Use of English II	2	R
GNS 104	Nigerian Peoples and Culture	2	R
GNS 212	Introduction to Information and Communication Technology	2	R
	Total Unit	24	

200 LEVEL HARMATTAN SEMESTER

Course Code	Course Title	Units	Status
BCH 201	General Biochemistry I	3	C
BCH 291	Experimental Biochemistry I	1	C
BIO 207	Introductory Genetics & Cell Biology	2	C
CHM 205	Physical Chemistry I	2	C
CHM 207	Inorganic Chemistry I	2	C
CHM 291	Experimental Physical/Inorganic Chemistry	1	C
FBS 201	History and Philosophy of Science	2	C
MCB 201	General Microbiology I	3	C
STA 229	Statistics for Agriculture & Biological Sciences	3	C
GNS 203	Introduction to Entrepreneurial Skills	2	R
Total Unit		21	

200 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BCH 202	General Biochemistry II	3	C
BCH 292	Experimental Biochemistry II	1	C
BIO 202	Biological Techniques	2	C
BTG 202	Introduction to Biotechnology	2	C
CHM 202	Organic Chemistry I	2	C
CHM 208	Physical Chemistry II	2	C
CHM 292	Experimental Physical/Organic Chemistry	1	C
CSC 208	Fundamentals of Data Structure	3	C
FBS 202	Peace Studies and Conflict Resolution	2	C
GNS 204	Logic and Philosophy	2	R
Total Unit		20	

300 LEVEL HARMATTAN SEMESTER

Course Code	Course Title	Units	Status
BIO 301	Genetics II	2	C
BTG 301	Molecular Genetics (Including Practicals)	4	C
BTG 303	Analytical Methods in Microbiology	3	R
BTG 307	Entrepreneurship Studies in Biotechnology	2	C
BTG 309	Scientific Writing	1	C
BTM 301	Microbial Technology	3	R
BTM 303	Applied Microbiology	3	R
SOC 329	Industrial Sociology	3	C
Total Unit		21	

300 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BTG 399	SIWES	6	C
	Total Unit	6	

400 LEVEL HARMATTAN SEMESTER

Course Code	Course Title	Units	Status
BTG 401	Biotechnology Seminar	3	C
BTG 403	Methods in Recombinant DNA Technology	4	C
BTG 405	Nucleotide Sequence Analysis	3	C
BTG 407	Molecular Cell Biology	3	C
MCB 407	Pathogenic Microbiology	3	C
	Choose One Elective		
BTA 301	Animal Microtechniques and Tissue Culture	3	E
BTG 305	Protein and Enzyme Chemistry	3	E
BTG 409	Plant Gene Transfer	4	E
MCB 311	Microbial Ecology	3	E
MCB 401	Immunology and Immunochemistry	3	E
	Total Unit	19/20	

400 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BTG 402	Industrial Biotechnology	3	C
BTG 404	Metabolic Engineering	3	C
BTG 406	Bioresources Management	3	C
BTG 408	Biosafety Issues	1	C
BTG 410	Intellectual Property Rights & Bioethics	1	C
BTG 499	Research Project	6	C
	Choose One Elective		
BTM 410	Comparative Virology	3	E
BTG 412	Biochemical Separations	3	E
BTG 414	Biotechnology Robotics	3	E
MCB 408	Microbial Physiology and Metabolism	3	E
	Total Unit	20	

B.Sc. BIOTECHNOLOGY (PLANT BIOTECHNOLOGY OPTION)**100 LEVEL HARMATTAN SEMESTER**

Course Code	Course Title	Units	Status
BIO 101	Basic Biology I	3	C
BIO 107	Experimental Biology I	1	C
CHM 101	General Chemistry I	3	C
CHM 107	Experimental Chemistry I	1	C
MTH 105	Algebra and Trigonometry for Biological Agricultural Science and Non-Science Major Students	3	C
PHY 101	General Physics I	3	C
PHY 107	Experimental Physics I	1	C
GNS 101	Use of English I	2	R
GNS 103	Use of Library	1	R
GNS 211	Basic French	2	R
	Total Unit	20	

100 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BIO 102	Basic Biology II	3	C
BIO 108	Experimental Biology II	1	C
CHM 102	General Chemistry II	3	C
CHM 108	Experimental Chemistry II	1	C
MTH 104	General Mathematics III (Vectors, Geometry & Dynamics)	3	C
MTH 106	Calculus for Biological, Agricultural Sciences and Non-Science Major Students	3	C
PHY 102	General Physics II	3	C
PHY 108	Experimental Physics II	1	C
GNS 102	Use of English II	2	R
GNS 104	Nigerian Peoples and Culture	2	R
GNS 212	Introduction to Information and Communication Technology	2	R
	Total Unit	24	

200 LEVEL HARMATTAN SEMESTER

Course Code	Course Title	Units	Status
BCH 201	General Biochemistry I	3	C
BCH 291	Experimental Biochemistry I	1	C
BIO 207	Introductory Genetics & Cell Biology	2	C
CHM 205	Physical Chemistry I	2	C
CHM 207	Inorganic Chemistry I	2	C
CHM 291	Experimental Physical/Inorganic Chemistry	1	C
FBS 201	History and Philosophy of Science	2	C
MCB 201	General Microbiology I	3	C
STA 229	Statistics for Agriculture & Biological Sciences	3	C
GNS 203	Introduction to Entrepreneurial Skills	2	R
	Total Unit	21	

200 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BCH 202	General Biochemistry II	3	C
BCH 292	Experimental Biochemistry II	1	C
BIO 202	Biological Techniques	2	C
BTG 202	Introduction to Biotechnology	2	C
CHM 202	Organic Chemistry I	2	C
CHM 208	Physical Chemistry II	2	C
CHM 292	Experimental Physical/Organic Chemistry	1	C
CSC 208	Fundamentals of Data Structure	3	C
FBS 202	Peace Studies and Conflict Resolution	2	C
GNS 204	Logic and Philosophy	2	R
	Total Unit	20	

300 LEVEL HARMATTAN SEMESTER

Course Code	Course Title	Units	Status
BIO 301	Genetics II	2	C
BTG 301	Molecular Genetics (Including Practicals)	4	C
BTG 303	Analytical Methods in Microbiology	3	C
BTG 307	Entrepreneurship Studies in Biotechnology	2	C
BTG 309	Scientific Writing	1	C
BTP 301	Seedless Plant	3	R
BTP 303	Morphology of Seed Plants	3	R
PBO 301	Plant Taxonomy	2	R
SOC 329	Industrial Sociology	3	C
	Total Unit	23	

300 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BTG 399	SIWES	6	C
	Total Unit	6	

400 LEVEL HARMATTAN SEMESTER

Course Code	Course Title	Units	Status
BTG 401	Biotechnology Seminar	3	C
BTG 403	Methods in Recombinant DNA Technology	4	C
BTG 405	Nucleotide Sequence Analysis	3	C
BTG 407	Molecular Cell Biology	3	C
BTG 409	Plant Gene Transfer	4	R
BTP 401	Plant Microtechnics and Tissue Culture	3	R
	Choose One Elective		
BTG 305	Protein and Enzyme Chemistry	3	E
BTG 411	Process Biotechnology	3	E
BTP 411	Plant Molecular Biology	3	E
PBO 305	Plant Breeding	3	E
PBO 307	Plant Physiology	3	E
	Total Unit	23	

400 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BTG 402	Industrial Biotechnology	3	C
BTG 404	Metabolic Engineering	3	C
BTG 406	Bioresources Management	3	C
BTG 408	Biosafety issues	1	C
BTG 410	Intellectual Property Rights & Bioethics	1	C
BTG 499	Research Project	6	C
	Choose One Elective		
BTG 412	Biochemical Separations	3	E
BTG 414	Biotechnology Robotics	3	E
BTM 410	Comparative Virology	3	E
BTP 410	Introduction to Ethnobotany	3	E
PBO 404	Plant Pathology	3	E
	Total Unit	20	

B.Sc. BIOTECHNOLOGY (ANIMAL BIOTECHNOLOGY OPTION)**100 LEVEL HARMATTAN SEMESTER**

Course Code	Course Title	Units	Status
BIO 101	Basic Biology I	3	C
BIO 107	Experimental Biology I	1	C
CHM 101	General Chemistry I	3	C
CHM 107	Experimental Chemistry I	1	C
MTH 105	Algebra and Trigonometry for Biological Agricultural Science and Non-Science Major Students	3	C
PHY 101	General Physics I	3	C
PHY 107	Experimental Physics I	1	C
GNS 101	Use of English I	2	R
GNS 103	Use of Library	1	R
GNS 211	Basic French	2	R
	Total Unit	20	

100 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BIO 102	Basic Biology II	3	C
BIO 108	Experimental Biology II	1	C
CHM 102	General Chemistry II	3	C
CHM 108	Experimental Chemistry II	1	C
MTH 104	General Mathematics III (Vectors, Geometry & Dynamics)	3	C
MTH 106	Calculus for Biological, Agricultural Sciences and Non-Science Major Students	3	C
PHY 102	General Physics II	3	C
PHY 108	Experimental Physics II	1	C
GNS 102	Use of English II	2	R
GNS 104	Nigerian Peoples and Culture	2	R
GNS 212	Introduction to Information and Communication Technology	2	R
	Total Unit	24	

200 LEVEL HARMATTAN SEMESTER

Course Code	Course Title	Units	Status
BCH 201	General Biochemistry I	3	C
BCH 291	Experimental Biochemistry I	1	C
BIO 207	Introductory Genetics & Cell Biology	2	C
CHM 205	Physical Chemistry I	2	C
CHM 207	Inorganic Chemistry I	2	C
CHM 291	Experimental Physical/Inorganic Chemistry	1	C
FBS 201	History and Philosophy of Science	2	C
MCB 201	General Microbiology I	3	C
STA 229	Statistics for Agriculture & Biological Sciences	3	C
GNS 203	Introduction to Entrepreneurial Skills	2	R
Total Unit		21	

200 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BCH 202	General Biochemistry II	3	C
BCH 292	Experimental Biochemistry II	1	C
BIO 202	Biological Techniques	2	C
BTG 202	Introduction to Biotechnology	2	C
CHM 202	Organic Chemistry I	2	C
CHM 208	Physical Chemistry II	2	C
CHM 292	Experimental Physical/Organic Chemistry	1	C
CSC 208	Fundamentals of Data Structure	3	C
FBS 202	Peace Studies and Conflict Resolution	2	C
GNS 204	Logic and Philosophy	2	R
Total Unit		20	

300 LEVEL HARMATTAN SEMESTER

Course Code	Course Title	Units	Status
BIO 301	Genetics II	2	C
BTG 301	Molecular Genetics (Including Practicals)	4	C
BTG 303	Analytical Methods in Microbiology	3	C
BTG 307	Entrepreneurship Studies in Biotechnology	2	C
BTG 309	Scientific Writing	1	C
BTA 301	Animal Microtechniques and Tissue Culture	3	C
MCB 401	Immunology and Immunochemistry	3	R
SOC 329	Industrial Sociology	3	C
Total Unit		21	

300 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BTG 399	SIWES	6	C
	Total Unit	6	

400 LEVEL HARMATTAN SEMESTER

Course Code	Course Title	Units	Status
BTG 401	Biotechnology Seminar	3	C
BTG 403	Methods in Recombinant DNA Technology	4	C
BTG 405	Nucleotide Sequence Analysis	3	C
BTG 407	Molecular Cell Biology	3	C
BTA 401	Principles of Nutrition I	3	R
BTA 403	Biology of Cancer	3	R
	Choose One Elective		
BTA 405	Biotechnology of Animal Reproduction	3	E
BTG 305	Protein and Enzyme Chemistry	3	E
BTG 411	Process Biotechnology	3	E
	Total Unit	22	

400 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BTG 402	Industrial Biotechnology	3	C
BTG 404	Metabolic Engineering	3	C
BTG 406	Bioresources Management	3	C
BTG 408	Biosafety issues	1	C
BTG 410	Intellectual Property Rights & Bioethics	1	C
BTG 499	Research Project	6	C
	Choose One Elective		
BTA 402	Principles of Nutrition II	3	E
BTG 412	Biochemical Separations	3	E
BTG 414	Biotechnology Robotics	3	E
BTM 410	Comparative Virology	3	E
	Total Unit	20	

**B.Sc. BIOTECHNOLOGY (MOLECULAR BIOLOGY AND BIOINFORMATICS
OPTION)**

100 LEVEL HARMATTAN SEMESTER

Course Code	Course Title	Units	Status
BIO 101	Basic Biology I	3	C
BIO 107	Experimental Biology I	1	C
CHM 101	General Chemistry I	3	C
CHM 107	Experimental Chemistry I	1	C
MTH 105	Algebra and Trigonometry for Biological Agricultural Science and Non-Science Major Students	3	C
PHY 101	General Physics I	3	C
PHY 107	Experimental Physics I	1	C
GNS 101	Use of English I	2	R
GNS 103	Use of Library	1	R
GNS 211	Basic French	2	R
	Total Unit	20	

100 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BIO 102	Basic Biology II	3	C
BIO 108	Experimental Biology II	1	C
CHM 102	General Chemistry II	3	C
CHM 108	Experimental Chemistry II	1	C
MTH 104	General Mathematics III (Vectors, Geometry & Dynamics)	3	C
MTH 106	Calculus for Biological, Agricultural Sciences and Non-Science Major Students	3	C
PHY 102	General Physics II	3	C
PHY 108	Experimental Physics II	1	C
GNS 102	Use of English II	2	R
GNS 104	Nigerian Peoples and Culture	2	R
GNS 212	Introduction to Information and Communication Technology	2	R
	Total Unit	24	

200 LEVEL HARMATTAN SEMESTER

Course Code	Course Title	Units	Status
BCH 201	General Biochemistry I	3	C
BCH 291	Experimental Biochemistry I	1	C
BIO 207	Introductory Genetics & Cell Biology	2	C
CHM 205	Physical Chemistry I	2	C
CHM 207	Inorganic Chemistry I	2	C
CHM 291	Experimental Physical/Inorganic Chemistry	1	C
FBS 201	History and Philosophy of Science	2	C
MCB 201	General Microbiology I	3	C
STA 229	Statistics for Agriculture & Biological Sciences	3	C
GNS 203	Introduction to Entrepreneurial Skills	2	R
	Total Unit	21	

200 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BCH 202	General Biochemistry II	3	C
BCH 292	Experimental Biochemistry II	1	C
BIO 202	Biological Techniques	2	C
BTG 202	Introduction to Biotechnology	2	C
CHM 202	Organic Chemistry I	2	C
CHM 208	Physical Chemistry II	2	C
CHM 292	Experimental Physical/Organic Chemistry	1	C
CSC 208	Fundamentals of Data Structure	3	C
FBS 202	Peace Studies and Conflict Resolution	2	C
GNS 204	Logic and Philosophy	2	R
	Total Unit	20	

300 LEVEL HARMATTAN SEMESTER

Course Code	Course Title	Units	Status
BIO 301	Genetics II	2	C
BTG 301	Molecular Genetics (Including Practicals)	4	C
BTG 303	Analytical Methods in Microbiology	3	C
BTG 307	Entrepreneurship Studies in Biotechnology	2	C
BTG 309	Scientific Writing	1	C
BTB 301	Evolutionary Genetics	3	R
CSC 335	Principles of Programming Languages	3	R
SOC 329	Industrial Sociology	3	C
	Total Unit	21	

300 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BTG 399	SIWES	6	C
	Total Unit	6	

400 LEVEL HARMATTAN SEMESTER

Course Code	Course Title	Units	Status
BTG 401	Biotechnology Seminar	3	C
BTG 403	Methods in Recombinant DNA Technology	4	C
BTG 405	Nucleotide Sequence Analysis	3	C
BTG 407	Molecular Cell Biology	3	C
BTB 401	Homology Modeling of Protein	3	R
STA 429	Basic Probability and Statistics I	3	R
	Choose One Elective		
BTB 403	Introduction to Molecular Modelling	3	E
BTB 405	Principles of Database Management Systems	3	E
BTG 411	Process Biotechnology	3	E
CSC 203	Computer Architecture and Organization I	2	E
CSC 207	Discrete Structure	2	E
	Total Unit	20	

400 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status
BTG 402	Industrial Biotechnology	3	C
BTG 404	Metabolic Engineering	3	C
BTG 406	Bioresources Management	3	C
BTG 408	Biosafety issues	1	C
BTG 410	Intellectual Property Rights & Bioethics	1	C
BTG 499	Research Project	6	C
STA 430	Basic Probability and Statistics II	3	R
	Total Unit	20	

B.Sc. BIOTECHNOLOGY CCMAS Curriculum**100 LEVEL HARMATTAN SEMSETER**

Course Code	Course Title	Unit	Status	LH	PH
GST 111	Communication in English	2	C	15	45
BIO 101	General Biology I	2	C	30	–
BIO 107	General Biology Practical I	1	C	–	45
CHM 101	General Chemistry I	2	C	30	–
CHM 107	General Chemistry Practical I	1	C	–	45
COS 101	Introduction to Computing Sciences	3	C	30	45
MTH 101	Elementary Mathematics I	2	C	30	–
MTH 103	Elementary Mathematics III	2	C	30	–
PHY 101	General Physics I	2	C	30	–
PHY 107	General Physics Practical I	1	C	–	45
	Total	18			

100 LEVEL RAIN SEMESTER

Course Code	Course Title	Unit	Status	LH	PH
GST 112	Nigerian Peoples and Culture	2	C	30	-
BIO 102	General Biology II	2	C	30	
BIO 108	General Biology Practical II	1	C	-	45
CHM 102	General Chemistry II	2	C	30	-
CHM 108	General Chemistry Practical II	1	C	-	45
COS 102	Problem Solving	2	C	30	45
MTH 102	Elementary Mathematics II	2	C	30	-
PHY 102	General Physics II	2	C	30	-
PHY 108	General Physic Practical II	1	C	-	45
	Total	15			