

Degree and Study Plan

College: Agricultural & Marine Sciences
Department: Animal and Veterinary Sciences
Cohort: 2016
Degree: Bachelor of Science
Major: Animal Science

<u>Summary of Credits:</u>	
University Requirements (UR)	6
Arabic	3
Contemporary Omani Society	1
Oman & Islamic Civilization or Islamic Culture	2
University Electives (UE)	6
See List A	
College Requirements (CR)	29
See list B	
College Electives (CE)	9
See list C	
Departmental Requirements (DR)	
See list D	
Departmental Electives	
See list E	
Major Requirements (AR)	54
See list F	
Major Electives (AE)	21
See list G	
Specialization Requirements (SR)	
See list H	
Specialization Electives (SE)	
See list I	
Minor Requirements (IR)	6
See list J	
Minor Electives (IE)	12
See list K	
TOTAL	125

For Reference contact: Dr. Waleed S. Al-Marzooqi

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HOD: Dr. Waleed S. Al-Marzooqi

Date:

Dean's Office: Dr. Rashid Al-Yahyai

Date:

Admission & Registration:

Date:

DEPARTMENT OF ANIMAL AND VETERINARY SCIENCES

ANIMAL SCIENCE

Study Plan: for Cohort 2016

Sem.	Course Code	Course Title	Cr.	Pre-Requisite	Cat.
ONE FALL		Foundation Program	0		UR
	TOTAL		0		

TWO SPRING	ARAB1001	Arabic	3		UR
	CAMS2000	Intro. CAMS	0		CR
	CAMS2003	Intro. to Food & Resource Economics	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)	CR
	CHEM2101	General Chemistry I	4	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604), FPMT(0105 or 0109)	CR
	LANC2145	Communication in Agricultural Sciences	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)	CR
		University Elective	2		UE
TOTAL		15			

THREE FALL	HIST1010	Oman & Islamic Civilization	2	=ISLM1010	UR
	BIOL2101	General Biology I	4	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)	CR
	LANC2146	Academic Writing in Science	3	LANC(2145 or 2142)	CR
		University Elective	2		UE
		University Elective	2		UE
	ANVS2101	Introduction to Animal Science	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)	CE
TOTAL		16			

FOUR SPRING	SOCY1001	Contemporary Omani Society	1	= SOCI3320	UR
	CAMS3000	Seminar & Presentation Skills	2	CAMS2000, FPCS(0101 or 0102), FPMT(0105 or 0109), LANC2146	CR
	CAMS3001	Biometry & Experimental Design in AMS	3	CAMS2000, FPCS(0101 or 0102), FPMT(0105 or 0109), LANC2146	CR
	PHYS2101	General Physics I	4	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604), FPMT(0105 or 0109)	CR
	ANVS2201	Introduction to Veterinary Technology	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)	CE
		College Elective	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)	CE
TOTAL		16			

FIVE FALL	ANVS3101	Genetics and Animal Breeding	3	ANVS(2101 or 2201), BIOL2101	AR
	ANVS3102	Animal Health	3	ANVS(2101 or 2201), BIOL2101	AR
	ANVS3104	Anatomy and Histology	3	ANVS(2101 or 2201), BIOL2101	AR
	FSHN2302	Principles of Biochemistry	3	CHEM2101, BIOL2101/=FSHN2001	AR
	ANVSXXXX	Major Elective	3	Check pre-requisites	AE
TOTAL		15			

SIX SPRING	ANVS3105	Fundamentals of Nutrition	3	(ANVS(2101 or 2201)), BIOL2101	AR
	ANVS3106	Systemic Physiology	3	ANVS(2101 or 2201), BIOL2101	AR
	ANVS4102	Poultry Production	3	ANVS(2101 or 2201) + CR*	AR
	ANVSXXXX	Major Elective	3	Check pre-requisites	AE
	ANVSXXXX	Major Elective	3	Check pre-requisites	AE
TOTAL		15			

SEVEN FALL	ANVS3107	Animal Reproductive Physiology	3	ANVS(2101 or 2201), BIOL2101	AR
	ANVS3208	Veterinary Immunology	3	ANVS(2101 or 2201), BIOL2101	AR
	ANVS3110	Animal Biotechnology	3	ANVS(2101 or 2201), BIOL2101	AR
	ANVSXXXX	Major Elective	3	Check pre-requisites	AE
	ANVSXXXX	Major Elective	3	Check pre-requisites	AE
TOTAL			15		

EIGHT SPRING	ANVS4124	Dairy and Beef Production	3	ANVS(2101 or 2201) + CR*	AR
	ANVS4106	Sheep and Goats Production	3	ANVS(2101 or 2201) + CR*	AR
	ANVS4108	Meat Science	3	ANVS(2101 or 2201) + CR*	AR
	ANVS4111	Horse Management and Care	3	ANVS(2101 or 2201) + CR*	AR
	ANVSXXXX	Major Elective	3	Check pre-requisites	AE
TOTAL			15		

SUMMER	ANVS 4800	Animal Science Internship	3	CR*	AR
	TOTAL			3	

NINE FALL	CAMS4101	Management & Business Skills	3	CR*	CR
	ANVS4105	Farm Practicum	3	ANVS(2101 or 2201) + CR*	AR
	ANVS4107	Animal Nutrition	3	ANVS3105 + CR*	AR
	ANVS4104	Camel Physiology and Husbandry	3	ANVS(2101 or 2201) + CR*	AR
	ANVSXXXX	Major Elective	3	Check pre-requisites	AE
TOTAL			15		

* CR - CAMS college requirement courses which are BIOL2101, CAMS2000, CAMS2003, CAMS3000, CAMS3001, CHEM2101, PHYS(2101 or 2107).

DEPARTMENT OF ANIMAL AND VETERINARY SCIENCES

ANIMAL SCIENCE

LIST B: College Requirements (29 Credits)

Course Code	Course Title	Cr.	Pre-Requisite	Equivalents
BIOL2101	General Biology I	4	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)	
CAMS2000	Introduction to Agricultural and Marine Sciences	0		
CAMS2003	Introduction to Food and Resource Economics	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)	
CAMS3000	Seminar and Presentation Skills	2	CAMS2000, FPCS(0101 or 0102), FPMT(0105 or 0109), LANC2146	
CAMS3001	Biometry and Experimental Design in AMS	3	CAMS2000, FPCS(0101 or 0102), FPMT(0105 or 0109), LANC2146	
CAMS4001	Management and Business Skills	3	CR*	
CHEM2101	General Chemistry I	4	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604), FPMT(0105 or 0109)	
LANC2145	Communication in Agricultural Sciences	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)	
LANC2146	Academic Writing in Science	3	LANC(2145 or 2142)	
PHYS2101	General Physics I	4	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604), FPMT(0105 or 0109)	

LIST C: College Electives (9 Credits)

Course Code	Course Title	Cr.	Pre-Requisite	Equivalents
ANVS2101	Introduction to Animal Science	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)	ANVS2001
ANVS2201	Introduction to Veterinary Technology	3		ANVS2002
CROP2510	Introduction to Crop Production	3		
FSHN2101	Principles of Food Science	3		FSHN2071
FSHN2301	Introduction to Human Nutrition and Dietetics	3		
MASF2003	Introduction to Marine Science and Fisheries	3		
SWAE2001	Introduction to Agricultural Engineering	3		
SWAE2201	Introduction to Soils and Water	3		

* CR - CAMS college requirement courses which are BIOL2101, CAMS2000, CAMS2003, CAMS3000, CAMS3001, CHEM2101, PHYS(2101 or 2107).

DEPARTMENT OF ANIMAL AND VETERINARY SCIENCES

ANIMAL SCIENCE

LIST F: Major Requirements (54 Credits)

Course Code	Course Title	Cr.	Pre-Requisite	Equivalents
ANVS3101	Genetics and Animal Breeding	3	ANVS(2101 or 2201), BIOL2101	ANVS3001
ANVS3102	Animal Health	3	ANVS(2101 or 2201), BIOL2101	ANVS3002
ANVS3104	Anatomy and Histology	3	ANVS(2101 or 2201), BIOL2101	ANVS3004
ANVS3105	Fundamentals of Nutrition	3	(ANVS(2101 or 2201), BIOL2101	ANVS3005
ANVS3106	Systemic Physiology	3	ANVS(2101 or 2201), BIOL2101	ANVS3006
ANVS3107	Animal Reproductive Physiology	3	ANVS(2101 or 2201), BIOL2101	ANVS3007
ANVS3110	Animal Biotechnology	3	ANVS(2101 or 2201), BIOL2101	
ANVS3208	Veterinary Immunology	3	ANVS(2101 or 2201), BIOL2101	ANVS3003
ANVS4101	Dairy and Beef Production	3	ANVS(2101 or 2201) + CR*	ANVS4001
ANVS4102	Poultry Production	3	ANVS(2101 or 2201) + CR*	ANVS4002
ANVS4104	Camel Physiology and Husbandry	3	ANVS(2101 or 2201) + CR*	ANVS4004
ANVS4105	Farm Practicum	3	ANVS(2101 or 2201) + CR*	ANVS4005
ANVS4106	Sheep and Goat Production	3	ANVS(2101 or 2201) + CR*	ANVS4006
ANVS4107	Animal Nutrition	3	ANVS3105 + CR*	ANVS4007
ANVS4108	Meat Science	3	ANVS(2101 or 2201) + CR*	ANVS4008
ANVS4111	Horse Management and Care	3	ANVS(2101 or 2201) + CR*	ANVS4011
ANVS4800	Animal Science Internship	3	After 90 credits + CR*	
FSHN2302	Principles of Biochemistry	3	BIOL2101, CHEM2101	FSHN2001

LIST G: Major Electives (21 Credits)**

Course Code	Course Title	Cr.	Pre-Requisite	Equivalents
ANVS2204	Veterinary Parasitology	3	ANVS(2101 or 2201), BIOL2101	ANVS2004
ANVS2206	Veterinary Microbiology	3	ANVS(2101 or 2201), BIOL2101	ANVS2006
ANVS3108	Farm Sanitation, Disease Control & Preventive Medicine	3	ANVS(2101 or 2201), BIOL2101	ANVS3008
ANVS3211	Veterinary Hematology	3	ANVS(2101 or 2201), BIOL2101	ANVS3011
ANVS3212	Clinical Chemistry, Cytology & Urology	3	ANVS3211, BIOL2101	ANVS3012
ANVS4110	Veterinary Pathology & Necropsy Techniques	3	ANVS3104 + CR*	ANVS4010
ANVS4112	Diseases of Large Animals	3	ANVS3106 + CR*	ANVS4012
ANVS4213	Diagnostic Microbiology	3	ANVS2206 + CR*	ANVS4013
ANVS4902	Research Project in Animal & Veterinary Science	3	Manual Registration, GPA≥2.0 + CR*	

* CR - CAMS college requirement courses which are BIOL2101, CAMS2000, CAMS2003, CAMS3000, CAMS3001, CHEM2101, PHYS(2101 or 2107).

** Courses from any Department (preferably related to a Minor) of the College of Agricultural and Marine Sciences or another College, may be selected with the approval of Academic Advisor, Head of Department and Assistant Dean of Undergraduate Studies. **No course will be approved without filling the substitution form and getting all necessary approvals prior registering any course not listed in the above degree plan.**

DEPARTMENT OF ANIMAL AND VETERINARY SCIENCES**ANIMAL SCIENCE****LIST J: Minor Requirements (3 Credits)**

Course Code	Course Title	Cr.	Pre-Requisite
ANVS2101	Introduction to Animal Science	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)

LIST K: Minor Electives (15 Credits)

Course Code	Course Title	Cr.	Pre-Requisite
ANVS3208	Veterinary Immunology	3	ANVS(2101 or 2201), BIOL2101
ANVS3101	Genetics and Animal Breeding	3	ANVS(2101 or 2201), BIOL2101
ANVS3102	Animal Health	3	ANVS(2101 or 2201), BIOL2101
ANVS3104	Anatomy and Histology	3	ANVS(2101 or 2201), BIOL2101
ANVS3105	Fundamentals of Nutrition	3	(ANVS(2101 or 2201), BIOL2101
ANVS3106	Systemic Physiology	3	ANVS(2101 or 2201), BIOL2101
ANVS3107	Animal Reproductive Physiology	3	ANVS(2101 or 2201), BIOL2101
ANVS4101	Dairy and Beef Production	3	ANVS(2101 or 2201) + CR*
ANVS4102	Poultry Production	3	ANVS(2101 or 2201) + CR*
ANVS4104	Camel Physiology and Husbandry	3	ANVS(2101 or 2201) + CR*
ANVS4106	Sheep and Goat Production	3	ANVS(2101 or 2201) + CR*
ANVS4107	Animal Nutrition	3	ANVS3105 + CR*
ANVS4108	Meat Science	3	ANVS(2101 or 2201) + CR*
ANVS4111	Horse Management and Care	3	ANVS(2101 or 2201) + CR*

LIST J: MINOR REQUIREMENTS

Within CAMS (18 credits):

J1. Minor in Animal Science (18 credits)

Course Code	Course Title	Cr.	Pre-Requisite
ANVS2101	Introduction to Animal Science	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)
Five courses from the following			
ANVS3208	Veterinary Immunology	3	ANVS(2101 or 2201), BIOL2101
ANVS3101	Genetics and Animal Breeding	3	ANVS(2101 or 2201), BIOL2101
ANVS3102	Animal Health	3	ANVS2101, BIOL2101
ANVS3104	Anatomy and Histology	3	ANVS(2101 or 2201), BIOL2101
ANVS3105	Fundamentals of Nutrition	3	(ANVS(2101 or 2201), BIOL2101
ANVS3106	Systemic Physiology	3	ANVS(2101 or 2201), BIOL2101
ANVS3107	Animal Reproductive Physiology	3	ANVS(2101 or 2201), BIOL2101
ANVS4101	Dairy and Beef Production	3	ANVS(2101 or 2201) + CR*
ANVS4102	Poultry Production	3	ANVS(2101 or 2201) + CR*
ANVS4104	Camel Physiology and Husbandry	3	ANVS(2101 or 2201) + CR*
ANVS4106	Sheep and Goat Production	3	ANVS(2101 or 2201) + CR*
ANVS4107	Animal Nutrition	3	ANVS3105 + CR*
ANVS4108	Meat Science	3	ANVS(2101 or 2201) + CR*
ANVS4111	Horse Management and Care	3	ANVS(2101 or 2201) + CR*

J2. Minor in Crop Sciences (18 credits)

Course Code	Course Title	Cr.	Pre-Requisite
CROP2510	Introduction to Crop Sciences	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)
Five courses from the following			
CROP2011	Ornamental Horticulture	3	BIOL2101
CROP3502	Forages and Pastures	3	BIOL2101
CROP3512	Vegetable Production	3	CROP2510
CROP3514	Fruit Production	3	CROP2510
CROP3522	Plant Pathology	3	BIOL2101
CROP3526	General Entomology	3	BIOL2101
CROP4005	Field Crop Production	3	CROP2510 + CR*
CROP4514	Landscape Plant Management	3	CROP(2011, 2510) + CR*

J3. Minor in Food Science (18 credits)

Course Code	Course Title	Cr.	Pre-Requisite
FSHN2101	Principles of Food Science	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)
Five courses from the following			
FSHN3101	Properties of Food & Agricultural Materials	3	(FSHN2101 or SWAE2001), PHYS(2101 or 2107)
FSHN3103	Food Analysis	3	CHEM3323, FSHN2302
FSHN3104	Food Chemistry I	3	CHEM3323, FSHN2302
FSHN3105	Food Microbiology I	3	BIOL3441
FSHN3106	Food Processing I	3	FSHN2101 or SWAE2001
FSHN3107	Food Sanitation and Quality Control	3	BIOL3441, FSHN2101
FSHN3108	Food Packaging	3	(FSHN3102 + CR*) or PHYS2102
FSHN3109	Sensory Evaluation of Food	3	FSHN2101 + CR*
FSHN4107	Milk and Milk Products	3	FSHN(3104, 3105, 3106) + CR*

J4. Minor in Human Nutrition (18 credits)

Course Code	Course Title	Cr.	Pre-Requisite
FSHN2301	Introduction to Human Nutrition and Dietetics	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)
Five courses from the following			
FSHN2302	Principles of Biochemistry	3	BIOL2101, CHEM2101
FSHN3305	Macronutrients in Human Nutrition	3	FSHN2301, (BIOL2101 or CHEM2101)
FSHN3306	Micronutrients in Human Nutrition	3	FSHN3305
FSHN3307	Nutrition Assessment and Planning	3	FSHN (2301, 3305)
FSHN3111	Public Sanitation****	3	BIOL3441, FSHN2101
FSHN3309	Life Cycle Nutrition	3	FSHN (2301, 3307)
FSHN4306	Community Nutrition	3	FSHN(2301, 3307) + CR*

**** Students who pass FSHN3075 cannot take FSHN3111

J5. Minor in Marine Science and Fisheries (18 credits)

Course Code	Course Title	Cr.	Pre-Requisite
MASF2003	Introduction to Marine Science and Fisheries	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)
MASFXXXX	Any MASF2000/3000/4000 level courses (excluding University Electives)	15	Check pre-requisites

J6. Minor in Natural Resource Economics (18 credits)

Course Code	Course Title	Cr.	Pre-Requisite
CAMS2003	Introduction to Food and Resource Economics	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)
Five courses from the following			
NREC3011	Economics of Fisheries Management	3	CAMS2003
NREC3101	Marketing of Agricultural and Fisheries Products	3	CAMS2003
NREC3106	Social Survey Design and Analysis	3	CAMS(2003, 3001)
NREC3107	Food Service Systems- Operations Management	3	FSHN2072 or NREC3101
NREC3300	Natural Resource and Environmental Economics	3	CAMS2003
NREC4103	Agribusiness Entrepreneurships	3	CR*
NREC4230	Agricultural Finance	3	CR*
NREC4430	Benefit Cost Analysis	3	CR*
NREC4500	Extension Methods and Techniques	3	CR*

J7. Minor in Soil Sciences (18 credits)

Course Code	Course Title	Cr.	Pre-Requisite
SWAE2201	Introduction to Soil and Water	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)
Five courses from the following			
SWAE3002	Desertification & Land Restoration	3	SWAE2201
SWAE3302	Environmental Soil Chemistry	3	CHEM2101, SWAE2201
SWAE3304	Soil and Water Conservation	3	PHYS2101, (SWAE2001or SWAE2201)
SWAE3311	Environmental Soil Physics	3	PHYS2101, (SWAE2001or SWAE2201)
SWAE3411	Environmental Soil Microbiology	3	BIOL2101
SWAE4111	Hydropedology for Soil-Water-Landscape Interactions Water-Landscape Interactions	3	SWAE(2201, 3303, 3311) + CR*
SWAE4401	Water and Nutrients in Soil-Plant Environments	3	SWAE2201 + CR*
SWAE4404	Soil Genesis and Classification	3	ERSC2101 or SWAE2201 + CR*
SWAE4412	Management of Salt-Affected Soils	3	SWAE2201 + CR*

J8. Minor in Water Technology (18 credits)

Code	Title	Cr.	Pre-Requisite
SWAE2201	Introduction to Soil and Water	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)
Five courses from the following			
SWAE3303	Elements of Hydrology	3	PHYS(2101 or 2107), SWAE(2201 or 2001)
SWAE3310	Fundamentals of Fluid Mechanics	3	MATH2107, PHYS(2101 or 2107)
SWAE3315	Water Quality	3	CHEM2101, SWAE2201
SWAE3402	Irrigation Principles	3	SWAE2201
SWAE4217	Transport of Chemicals in Porous Media	3	SWAE(3303, 3311) + CR
SWAE4305	Water Control and Supply	3	SWAE(2201, 3310)+ CR*
SWAE4325	Water Treatment	3	CHEM2101, MATH2107, SWAE3315 + CR*
SWAE4400	Ground Water Hydrology	3	SWAE3303 + CR*
SWAE4402	Design & Management of Irrigation Systems	3	SWAE(3310, 3402) + CR*

Minors outside CAMS (19 credits):

Minors from the College of Science

J9. Biology (19 credits)

Course Code	Course Title	Cr.	Pre-Requisite
BIOL2101	General Biology I	4	
BIOLXXXX	Any 2000/3000/4000 level courses in Biology (excluding University Electives)	15	

J10. Chemistry (19 credits)

Course Code	Course Title	Cr.	Pre-Requisite
CHEM2101	General Chemistry I	4	FPMT0105
CHEMXXXX	Any 2000/3000/4000 level courses in Chemistry (excluding University Electives)	15	

J11. Computer Science (19 credits)

Course Code	Course Title	Cr.	Pre-Requisite
COMP2101	Introduction to Computer Science	4	
Five Courses from the Following			
COMP2103	Introduction to OOP	3	COMP2101
COMP3314	Data Structures	3	COMP2103
COMP3518	Computer Org. & Assembly Lang.	3	COMP3314, MATH3316
COMP3316	Digital Logic & Switching Circuits	3	MATH3340
COMP4414	Database Management	3	COMP3314
COMP4471	Computational Methods I	3	COMP2101, MATH2108, MATH2202
COMP4511	Introduction to Computer Graphics	3	COMP3314, MATH2202
COMP4513	Artificial Intelligence	3	COMP3314, STAT2102
COMP4517	Design and Analysis of Algorithms	3	COMP3314

J12. Earth Science (19 credits)

Course Code	Course Title	Cr.	Pre-Requisite
ERSC2101	Introduction to Geology I	4	
Five Courses from the Following			
ERSC2011	Palaeontology I	3	ERSC2101
ERSC2102	Introduction to Geology II	4	ERSC2101
ERSC3001	Mineralogy I	3	ERSC2102
ERSC3021	Structural Geology I	3	ERSC2102
ERSC3041	Stratigraphy	3	ERSC2011
ERSC3210	Palaeontology II	3	ERSC2011
ERSC3301	Mineralogy II	3	ERSC3001
ERSC4011	Igneous Petrology	3	ERSC3301
ERSC4012	Metamorphic Petrology	3	ERSC4011
ERSC4013	Sedimentary Petrography	3	ERSC3001, ERSC3301
ERSC4031	Geochemistry	3	CHEM2101, CHEM2201, ERSC2102
ERSC4041	Introduction to Geophysics	3	ERSC2101, PETR3246, PHYS2101
ERSC4051	Hydrogeology	3	CHEM3341, ERSC2101, PETR3246
ERSC4321	Structural Geology II	3	ERSC3021
ERSC5021	Marine Geology	3	ERSC2102

J13. Mathematics (19 credits)

Course Code	Course Title	Cr.	Pre-Requisite
MATH1106	Pre-calculus	4	
Five Courses from the Following			
MATH2107	Calculus I	3	MATH1106
MATH2108	Calculus II	3	MATH2107
MATH2202	Linear Algebra I*	3	MATH1106
MATH3109	Calculus III*	4	MATH2108
MATH3171	Linear Algebra & Mult. Cal. for Eng.*	3	MATH2108
MATH3207	Math for Teachers I (Algebra)	3	MATH2107
MATH3210	Math for Teachers II (Geometry)	3	MATH2107
MATH3302	Ordinary Differential Equations	3	MATH2108
MATH3360	Discrete Mathematics for CSs	3	MATH2350
MATH3573	Graph Theory	3	MATH3340, MATH3350, MATH3357
MATH3744	Introduction to Mathematical Modeling	3	MATH3109, MATH3302

* Students who pass MATH3171 cannot take MATH2202 or MATH3110 and vice versa.

J14. Physics (19 credits)

Course Code	Course Title	Cr.	Pre-Requisite
PHYS2101 or PHYS2107	General Physics I or Physics for Engineering I	4	FPMT0105
PHYSXXXX	Any 2000/3000/4000 level courses in Physics (excluding University Electives)	15	

J15. Statistics (19 credits)

Course Code	Course Title	Cr.	Pre-Requisite
STAT1001	Introduction to Statistics	4	English
Five Courses from the Following			
STAT2102	Introduction to Probability	3	STAT1001, MATH2108*
STAT3334	Introduction to Inference	3	STAT2102
STAT3335	Sampling Techniques	3	STAT3334
STAT3338	Statistical Methods	3	STAT3334
STAT3336	Computational Techniques in Statistics	3	COMP2216, STAT2102
STAT4432	Regression Analysis	3	STAT3334
STAT4433	Design and Analysis of Experiments	3	STAT3338
STAT4434	Nonparametric Statistics	3	STAT3334

J16. Minor from College of Commerce (18 credits)

Only Natural Resource Economics students are entitled for this minor. NREC students must successfully complete 6 from the following 9 courses

Code	Title	Cr.	Pre-Requisite
ACCT1112	Introductory Financial Accounting	3	
MNGT1515	Principles of Management	3	
MNGT2515	International Business	3	MNGT1515
ECON1211	Principles of Microeconomics	3	
ECON2221	Principles of Macroeconomics	3	
FINA3311	Principles of Finance	3	ACCT2121
POMG2710	Principles of management Science	3	STAT1811
POMG3711	Operations Management	3	POMG2710
MRKT3611	Principles of Marketing	3	ECON 1211 & ECON2221

