



Degree and Study Plan

College: Agricultural & Marine Sciences
Department: Natural Resource Economics
Cohorts: 2010 - 2013
Degree: Bachelor of Science
Major: Natural Resource Economics

Summary of Credits:

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)	3
See list J	
Minor Electives (IE)	15
See list K	
TOTAL	125

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HoD: **Dr. Houcine Boughanmi**

Date:

Dean's Office: **Prof. Anvar Kacimov**

Date:

Admission and Registration:

Date:

NATURAL RESOURCE ECONOMICS DEPARTMENT

NATURAL RESOURCE ECONOMICS

Study Plan: for Cohort 2010-2013

Sem.	Course Code	Course Title	Cr.	Pre-req./Co-req.*	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
	LANC2140	English for CAMS I	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
	LANC2141	English for CAMS II	3	LANC(2140 or 2142)	CR
		University Elective	2		UE
		University Elective	2		UE
		College Elective	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), LANC2141	CR
	CAMS3001	Biometry & Experimental Design in AMS	3	CAMS2000, FPCS(0101 or 0102), FPMT(0105 or 0109), LANC2141	CR
	PHYS2101	General Physics I	4	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604), FPMT(0105 or 0109)	CR
		College Elective	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	NREC2004	The World Food Problem	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604), FPMT(0105 or 0109)	AR
	NREC3011	Economics of Fisheries Management	3	CAMS2003	AR
	NREC3101	Marketing of Agricultural & Fisheries Pro.	3	CAMS2003	AR
	NREC3102	Agricultural and Food Policies	3	CAMS2003	AR
	MATH2107	Calculus I	4	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604), FPMT(0105 or 0109)	AE
TOTAL		16			

SIX SPRING	NREC3010	Production Economics	3	CAMS2003	AR
	NREC3103	Macroeconomic Policy and Natural Res.	3	LANC2141	AR
	NREC3220	Agribusiness Management	3	CAMS2003	AR
	NREC3300	Natural Resource & Environmental Eco.	3	CAMS2003	AR
	NRECXXX	Major Elective	3	Check pre-requisites	AE
TOTAL		15			

SEVEN FALL	NREC3104	Intermediate Microeconomics	3	CAMS2003	AR
	NREC3106	Social Survey Design and Analysis	3	CAMS(2003, 3001)	AR
	NREC4410	International Agricultural Trade	3	CR*	AR
	NREC4430	Benefit Cost Analysis	3	CR*	AR
	NRECXXXX	Major Elective	3	Check pre-requisites	AE
TOTAL			15		

EIGHT SPRING	NREC4104	Applied Econometrics	3	CR*/ =NREC4010	AR
	NREC4420	Economic Development	3	CR*	AR
	NREC4500	Extension Methods & Techniques	3	CR*	AR
	NRECXXXX	Major Elective	3	Check pre-requisites	AE
	NRECXXXX	Major Elective	3	Check pre-requisites	AE
TOTAL			15		

SUMMER	NREC4800	Natural Resource Economics Internship	3	After 90 Credits + CR*	AR
	TOTAL			3	

NINE FALL	CAMS4001	Management & Business Skills	3	CR*	CR
	NREC4103	Agribusiness Entrepreneurships	3	CR*	AR
	NREC4230	Agricultural Finance	3	CR*	AR
	NRECXXXX	Major Elective	3	Check pre-requisites	AE
	NRECXXXX	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).

NATURAL RESOURCE ECONOMICS DEPARTMENT

NATURAL RESOURCE ECONOMICS

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), LANC2141	
CAMS3001	Biometry and Experimental Design in AMS	3	CAMS2000, FPCS(0101 or 0102), FPMT(0105 or 0109), LANC2141	
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)	
LANC2140	English for CAMS I	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604)	
LANC2141	English for CAMS II	3	LANC(2140 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	Principles of 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).

NATURAL RESOURCE ECONOMICS DEPARTMENT

NATURAL RESOURCE ECONOMICS

LIST F: Major Requirements (54 Credits)

Course Code	Course Title	Cr.	Pre-Requisite	Equivalents
NREC2004	The World Food Problem	3	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604), FPMT(0105 or 0109)	
NREC3010	Production Economics	3	CAMS2003	
NREC3011	Economics of Fisheries Management	3	CAMS2003	
NREC3101	Marketing of Agricultural and Fisheries Products	3	CAMS2003	
NREC3102	Agricultural and Food Policies	3	CAMS2003	
NREC3103	Macroeconomic Policy and Natural Resources	3	LANC2141	
NREC3104	Intermediate Microeconomics for Natural Resource Management	3	CAMS2003	
NREC3106	Social Survey Design and Analysis	3	CAMS(2003, 3001)	
NREC3220	Agribusiness Management	3	CAMS2003	
NREC3300	Natural Resource and Environmental Economics	3	CAMS2003	
NREC4103	Agribusiness Entrepreneurships	3	CR*	
NREC4104	Applied Econometrics	3	CR*	NREC4010
NREC4230	Agricultural Finance	3	CR*	
NREC4410	International Agricultural Trade	3	CR*	
NREC4420	Economic Development	3	CR*	
NREC4430	Benefit Cost Analysis	3	CR*	
NREC4500	Extension Methods and Techniques	3	CR*	
NREC4800	Natural Economic Resources Internship	3	After 90 Credits + CR*	

LIST G: Major Electives (21 Credits)**

Course Code	Course Title	Cr.	Pre-Requisite	Equivalents
CROP4514	Landscape Plant Management	3	CROP(2011, 2510) + CR*	
CROP4517	Nursery and Greenhouse Management	3	CROP2510 + CR*	
MASF3100	Marine Tourism	3	MASF3026	
MASF3060	Integrated Coastal Zone Management	3	MASF2003	
MASF4043	Fisheries Management I	3	MASF4042 + CR*	
MATH2107	Calculus I	4	FPEL(0560 or 0600 or 0601 or 0602 or 0603 or 0604), FPMT(0105 or 0109)	
NREC3105	Water Economics	3	CAMS(2003, 3001)	
NREC3107	Food Service Systems- Operations Management	3	FSHN2072 or NREC3101	
NREC4101	Mathematical Economics	3	CR*	
NREC4105	The Management of Natural Resource Projects	3	CR*	NREC4102
NREC4900	Natural Resource Economics Special Problems	3	After 90 Credits, GPA>2.0 + CR*	
SWAE4415	Water Resources Management & Legislation	3	MATH2107, SWAE3303 + 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 (preferably the College of Commerce and Economics), 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.**

NATURAL RESOURCE ECONOMICS DEPARTMENT

NATURAL RESOURCE ECONOMICS

LIST J: Minor Requirements (3 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)

LIST K: Minor Electives (15 Credits)

Course Code	Course Title	Cr.	Pre-Requisite
NRECXXX	Any NREC2000/3000/4000 level courses (excluding University Electives, NREC2003 and NREC4001 courses)	15	Check pre-requisites

LIST J: MINOR REQUIREMENTS (2010-2013)

Within CAMS (18 credits):

J1. Minor in Animal Science (18 credits)

Course Code	Course Title	Cr.	Pre-Requisite / Co-Req. *
ANVS2101	Principle of Animal Science	3	FPEL(0600 or 0601 or 0602 or 0603 or 0604)
Four courses from the following			
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) or FSHN2071), BIOL2101
ANVS3106	Systemic Physiology	3	ANVS(2101 or 2201), BIOL2101
ANVS3107	Animal Reproductive Physiology	3	ANVS(2101 or 2201), BIOL2101
ANVS3208	Veterinary Immunology	3	ANVS(2101 or 2201), BIOL2101
ANVS4101	Dairy 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 / Co-Req. *
CROP2510	Introduction to Crop Sciences	3	FPEL(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 / Co-Req. *
FSHN2101	Principles of Food Science	3	FPEL(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 or PHYS2102
FSHN3109	Sensory Evaluation of Food	3	CAMS3001, FSHN2101
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 / Co-Req. *
FSHN2301	Introduction to Human Nutrition and Dietetics	3	FPEL(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, 3306)
FSHN4111	Public Sanitation****	3	BIOL3441, FSHN2101 + CR*
FSHN4303	Life Cycle Nutrition	3	FSHN(2301, 3307) + CR*
FSHN4306	Community Nutrition	3	FSHN(2301, 3307) + CR*

**** Students who pass FSHN3075 cannot take FSHN4111

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

Course Code	Course Title	Cr.	Pre-Requisite / Co-Req. *
MASF2003	Introduction to Marine Science and Fisheries	3	FPEL(0600 or 0601 or 0602 or 0603 or 0604)
MASFXXX	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 / Co-Req. *
CAMS2003	Introduction to Food and Resource Economics	3	FPEL(0600 or 0601 or 0602 or 0603 or 0604)
NRECXXX	Any NREC2000/3000/4000 level courses (excluding University Electives, NREC2003 and NREC4001 courses)	15	Check pre-requisites

J7. Minor in Soil Sciences (18 credits)

Course Code	Course Title	Cr.	Pre-Requisite / Co-Req. *
SWAE2201	Introduction to Soil and Water	3	FPEL(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, (SWAE2001 or SWAE2201)
SWAE3311	Environmental Soil Physics	3	PHYS2101, (SWAE2001 or SWAE2201)
SWAE3411	Environmental Soil Microbiology	3	BIOL2101
SWAE4111	Hydropedology for Soil-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 / Co-req. *
SWAE2201	Introduction to Soil and Water	3	FPEL(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*