

**NATURAL RESOURCE MANAGEMENT & SUSTAINABILITY MAJOR (Geospatial Information Science Area of Emphasis)
COURSE SEQUENCE--FALL ENTRY (Fall 2017 and later)**

FALL 1		
FANR 3000	Field Methods	4
prereq: Enrollment in Warnell prof program		
	F: 72 TR	07-08F+(M or 74-76T)
	S: 03 MW	07-08F+(M or 74-76T)
FANR 3060	Soils and Hydrology	4
prereq: Chemistry I		
	F: 04 MWF	W, R: var.
	S: 04 MWF	W, R: var.
FANR 3300	Economics of Ren. Resources	2
1st half	F: 71 TR	01-02 F
of term	S: 73 TR	05-06 F
FANR 3400	Society and Natural Res.	2
2nd half	F: 71 TR	01-02 F
of term	S: 73 TR	05-06 F
REQUIRED OPTION OR ELECTIVE		3
TERM TOTAL: 15		

FALL 2		
GEOG 4590	Programming for GIS	3
prereq: FANR 3800		
	F: 03-04 W	03-04 M
REMOTE SENSING OPTION		3
REQUIRED OPTION OR ELECTIVE		3
REQUIRED OPTION OR ELECTIVE		3
REQUIRED OPTION OR ELECTIVE		3
TERM TOTAL: 15		

All non-Warnell course times are subject to change without notice.

SPRING 1		
FANR 3200	Ecology of Natural Res.	4
prereq: Biology II		
	F: 03 MWF	M, F
	S: 71 TR	T, R
FANR 3800	Spatial Analysis	3
prereq: FANR 3000		
	F: 01 MW	W, R
	S: 05 MW	W, R
REQUIRED OPTION OR ELECTIVE		3
REQUIRED OPTION OR ELECTIVE		3
REQUIRED OPTION OR ELECTIVE		2
TERM TOTAL: 15		

SPRING 2		
FANR 4500 or 4990	Senior Project or Senior Thesis	4
pre or coreq: FANR 3300, final semester		
	F: 3:30-4:30 R or var.	
	S: 01 M or var.	
FANR 4800	Renewable Resource Policy	2
prereq: FANR 3200 and (3300 & 3400)		
	S: 03 MW	
FANR 5620	GIS Apps for Natl. Res.	3
prereq: FANR 3800		
	S: 04 MW	05 MW
FANR 5630	Stat. Software for NR Mgmt	3
prereq: STAT 2000, BIOS 2010, or MSIT 3000		
	S: 75 TR	
REQUIRED OPTION OR ELECTIVE		3
TERM TOTAL: 15		

CLASS PERIODS:	
01	8:00-8:50a
02	9:05-9:55a
03	10:10-11:00a
04	11:15-12:05p
05	12:20-1:10p
06	1:25-2:15p
07	2:30-3:20p
08	3:35-4:25p
09	4:40-5:30p
10	5:45-6:35p
11	6:50-7:40p
12	7:55-8:45p
13	9:00-9:15p
71	8:00-9:15a
72	9:30-10:45a
73	11:00-12:15p
74	12:30-1:45p
75	2:00-3:15p
76	3:30-4:45p
77	5:00-6:15p
78	6:30-7:45p
79	8:00-9:15p
80	9:30-10:45p
VR	various times
AR	to be arranged

TERMS:	
F:	Fall
S:	Spring
SU:	Summer

Hours Needed to Graduate: 60

Underneath each course title, you will find listed the term, the class period and days meeting for the lecture, and the day(s) the labs are offered, separated by a comma for separate sections. Assume the labs are in the afternoon (periods 06 or 75 or later), unless otherwise noted.

GIS Certificate
Students with a 3.0 or higher GPA in the following can receive the GIS certificate:

- FANR 3800 & 3800L
- FANR 5620
- GEOG 4590
- GEOG 4350 or 4460 (remote-sensing option)

**NATURAL RESOURCE MANAGEMENT & SUSTAINABILITY MAJOR (Geospatial Information Science Area of Emphasis)
COURSE SEQUENCE--FALL ENTRY (continued)**

OPTIONS & ELECTIVES:

REMOTE SENSING OPTION		
GEOG 4350	Remote Sensing of Envir.	3
prereq:	FANR 3800	
	F: 72 T 72 R	
GEOG 4460	Field Methods in Remote Sens.	3
prereq:	FANR 3800	
	F: 06-08 M	
COMPUTER PROGRAMMING OPTION		
CSCI 1301	Intro to Computing	4
prereq:	Precalculus	
	F: 72, 73, 74, or 75 TR*	
	S: 72, 73, 74, or 75 TR*	
	SU: also offered	
*many labs are offered at various times		
CSCI 1360	Informatics & Data Analytics	4
prereq:	Precalculus	
	S: 76 TR 08 W	
CSCI 2150	Intro to Computational Science	4
prereq:	Precalculus	
even years	S: 72 TR 08 MW or 73 TR	
FANR 4700	Computational Plant Science	3
prereq:	STAT 2000 or BIOS 2010	
	S: AR	

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Geospatial Electives (10 hrs)		
ATSC 4140	Satellite Meteorol. & Clim.	3
prereq:	GEOG 1111 or 1112	
CBIO 4835	Computational Biology	3
prereq:	none	
CRSS 4050	Impr Nutr & Energ Eff w/GIS	4
pre or coreq:	APTC(CRSS) 3030	
EDES 4270	Envir Design Uses of GIS	3
prereq:	EDES 3230	
EDES 4280E	Envir Design Uses of GIS	3
prereq:	EDES 3230	
ENGR 3120	Spatial Data Analysis	3
prereq:	MATH 2500 and ENGR 1120	
ENGR 5930	GPS w/ Eng. & GIS Apps.	3
prereq:	ENGR 1120 or GEOG 4370	
FANR 5640	Unmanned Aerial Systems	3
prereq:	FANR 3800	
	S: 02 WF 06-07 M	
FORS 5650	Aerial Photos in Forestry	3
prereq:	none	
	S: 01 MW 01 F	
FORS 5670	Forestry Info Systems	3
prereq:	none	
even years	F: 75-76 T	
GEOG 3510	Cartography and Graphics	3
prereq:	none	
GEOG 4330	Aerial Photos & Image Interp.	3
prereq:	none	
GEOG 4380	Transport Modeling & GIS	3
prereq:	GEOG 4370	
GEOG 4385S	Community GIS	3
coreq:	GEOG 4370 or 3510	
GEOG 4410	Cartographic Visualization	3
prereq:	none	
GEOG 4430	Adv Image Analysis	3
prereq:	GEOG 4330 or 4350	
GEOG 4450	Digital Image Analysis	3
prereq:	GEOG 4350	
GEOG 4460	Fid Methods in Remote Sens.	3
prereq:	GEOG 4350	
GEOG 4470	Adv Geosp Analysis	3
prereq:	STAT 2000 and GEOG 4370	
GEOG 4570	Advanced GIS	3
prereq:	GEOG 4370	
HORT 4095	GPS/GIS Apps / Land Mgrs	3
prereq:	BIOL 1107	
STAT 4360	Statistical Software Progr.	3
prereq:	CSCI 1301 and (STAT 4220 or 4230)	
WILD 5750	Statl Soft for Fish & Wild	1-3
prereq:	STAT 2000	
	irregularly offered	
or other, advisor-approved course		

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01	8:00-8:50a
02	9:05-9:55a
03	10:10-11:00a
04	11:15-12:05p
05	12:20-1:10p
06	1:25-2:15p
07	2:30-3:20p
08	3:35-4:25p
09	4:40-5:30p
10	5:45-6:35p
11	6:50-7:40p
12	7:55-8:45p
13	9:00-9:15p
71	8:00-9:15a
72	9:30-10:45a
73	11:00-12:15p
74	12:30-1:45p
75	2:00-3:15p
76	3:30-4:45p
77	5:00-6:15p
78	6:30-7:45p
79	8:00-9:15p
80	9:30-10:45p
VR	various times
AR	to be arranged

TERMS:	
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Hours Needed to Graduate:	60
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**NATURAL RESOURCE MANAGEMENT & SUSTAINABILITY MAJOR (Geospatial Information Science Area of Emphasis)
COURSE SEQUENCE--FALL ENTRY (continued)**

Natural Resources Electives (10 hrs)		
ECOL 4050	Ichthyology	4
	prereq: Biology II	
FISH 4200	Aquatic Biology	3
	prereq: Biology II	
	F: 74 TR R (optional)	
FISH 4300	Environmental Biol of Fishes	4
	prereq: Biology II	
	S: 04 MWF 05-08 F	
FISH 4310	Freshwater Ecosystems	4
	prereq: ECOL 3500 or FANR 3200	
	F: 02 MW M, W	
FISH 4500	Fish Physiology	4
	prereq: WILD 3580+L	
	F: 75 TR F (optional)	
FISH 4520	Conservation Decision-Making	3
	prereq: FANR 3000 & (ECOL 3500 or FANR 3200)	
	pre or coreq: FANR 3800	
	S: 71 TR M or W	
FISH 4550	Sustainable Aquaculture	4
	prereq: Biology II	
	S: 74 TR 75-76 R	
FISH 4600	Ecotoxicology	3
	prereq: Biology II and Chemistry II	
	irregularly offered	
FISH 4650L	Fisheries Field Camp	4
	prereq: apply through StudyAway portal	
	SU: VR (Maymester)	
FORS 3010	Dendrology	3
	prereq: Biology II	
	F: 73 TR T, W, R	
	S: 72 TR T, W, R	
FORS 4010	Silviculture	4
	prereq: FANR 3000 & (ECOL 3500 or FANR 3200)	
	F: 03 MWF W	
	S: 73 TR T	
FORS 4210	Forest Health and Protection	3
	prereq: Biology II	
	S: 05 MWF 06 F	
FORS 4610	Forest Mensuration	4
	prereq: FANR 3000	
	F: 72 TR R	
FORS 4620	Timber Management	4
	prereq: FORS 4610	
	S: 04 MWF 03-04 F	
FORS 4700	Forest Economics	3
	prereq: none	
	F: 05 MW 05-06 F	
PRTM 3310	Humans, Nature & Env. Aware	3
	prereq: Enrollment in Warnell prof program	
	F: 6:30-9pm TR	
PRTM 4400	Park Management	3
	prereq: FANR 1100, 3400, or PRTM 3310	
	S: 73 TR	
PRTM 5410	Stewardship & Prot of Nat Res	3
	prereq: FANR 3400 or PRTM 3310	
	S: 77-78 T	
PRTM 5800S	Environmental Interpretation	3
	prereq: none	
	F: 73 TR	
PRTM 5900	Ecotourism & Sust Dev	3
	prereq: FANR 3400 or PRTM 3310	
	F: 72 TR	
or other, advisor-approved course		

Natural Resources Electives (10 hrs) (cont.)		
WASR 4110	Forest Hydrology	3
	prereq: FANR 3060	
	S: 01 MWF T	
WILD 3000	Intro to Fish & Wildlife	2
	prereq: Biology II	
	F: 02 MW	
WILD 3580	Vertebrate Natural History	4
	prereq: Biology II	
	S: 02 MWF M, T, W	
WILD 4100	Wildlife Habitat Management	4
	prereq: WILD 3000 & (FANR 3200 or ECOL 3500)	
	F: 05 MW F	
WILD 4040	Herpetology	4
	prereq: Biology II, permission of instructor	
	S: 72 TR T	
WILD 4050	Mammalogy	4
	prereq: WILD 3580+L	
	F: 04 MWF T	
WILD 4060	Ornithology	4
	prereq: Biology II	
	S: 04 MWF 01-03 F	
WILD 4400	Wildlife Physiology & Nutr.	3
	prereq: WILD 3000	
	S: 72 TR	
WILD 4500	Nongame & End Sp Mgmt	3
	prereq: WILD 3000, 4700, and Ecology	
	even yrs F: 72 TR	
WILD 4700	Wildlife Techniques	3
	prereq: Enrollment in Warnell prof program	
	F: 04 MW M, T, R	
WILD 5100	Wildlife Diseases	3
	prereq: none	
	S: 73 TR	
WILD 5330	Conserv Wildlife in Ag Land	3
	prereq: none	
	irregularly offered	
WILD 5350	Wetlands for Wildlife	3
	prereq: none	
	irregularly offered	
WILD 5700	Population Dynamics	3
	prereq: (FANR 3200 or ECOL 3500) & Precal	
	S: 02 MW M	
or other, advisor-approved course		

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