

## Dual Degree: Fisheries and Wildlife/Forestry (revised Fall 2009)

Minimum 140 Credit Hours (Does not allow any general elective hours)

### I. Pre-Professional Core (30 hours)

#### A. Communications (3 hours)

English 1000 - Exposition and Argumentation (3hr) Fall/Spring/Summer

3 Writing intensive courses\* [prereq: English 1000] **designated “WI” after appropriate courses. *Subject to change – check current schedule*** [\* C- or better required for WI credit]

#### B. Quantitative / Analytical Skills (9 hours)

Math 1100\* – College Algebra (3 hr) Fall/Spring/Summer \* waived with 26 or higher on the ACT Math test, OR C- or higher in a math course equivalent to Calc I

Math 1400 - Calculus for Social-Natural Sciences (3hr) Fall/Spring/Summer [prereq: College Algebra]

Statistics – choose one:

- Stat 2530 – Statistical Methods in Nat Resources (3hr) Spring [prereq: Computer or equivalent]
- Stat 1400 – Elementary Statistics for Agriculture (3hr) Fall/Spring [prereq: College Algebra]

#### C. Social Sciences (9 hours)

Economics - choose one:

- Ag Econ 2070 – Environmental Economics and Policy (3 hr) Spring **WI**
- Ag Econ 1041 – Applied Microeconomics (3 hr) Fall/Spring
- Ag Econ 1042 – Applied Macroeconomics (3 hr) Spring [prereq: microecon recommended]

American History or Government - State Law requirement: Choose from History 1100, 1200, 1400, 2100, 2440; or Political Science 1100 or 2100. Fall/Spring/Summer

Additional Social Sci elective (3 hr) Fall/Spring/Summer – includes Psych, Soc, Rural Soc, Anthro, Hist

#### D. Humanities (9 hours) – Fine arts: art, music, or theatre (3 hours of performance courses allowed). Cultural studies: literature [prereq: English 1000], philosophy and ethics, classical studies, religion.

### II. Science Core (34-38 hours)

Chemistry – Choose one sequence of courses below:

- Chemistry 1310 - Gen Chem I (2hr) [Coll. Algebra] **AND** 1320 and Gen Chem II (3hr) Fall/Sp/Sum
- Chemistry 1100 – Atoms/Molecules (3) Fall/Sp/Sum **AND** Biochem 2110 – Molecules of Life (3) Sp

Biology 1200 – Botany (5hr) Fall

Introductory Biology: choose one:

- Biology 1500 – Intro to Biological Systems (5hr) Fall/Spring [prereq: College Algebra]
- FW 1100 – Introductory Zoology (5hr) Spring

Geology 1100 – Principles of Geology 1100 (4hr) **OR** Geol 1200 – Environ Geology (4hr) Fall/Sp/Sum

Soils 2100 – Intro to Soil Science (3hr) Fall/Spring [prereq: College Algebra]

Soils 2106 – Soil Science Lab (2hr) Fall/Spring [prereq: 3 hrs Chem, or concurrent enrollment in Soils 2100]

Physics: Choose one:

- Physics 1210 – College Physics (4hr) Fall/Spring/Summer [College Algebra]
- AtmSci 1050 – Intro Meteorology (3hr) Fall/Spring

Genetics - Choose one:

- FW 2500 – Intro Genetics/Evolution for Conservation (3hr) Spring [prereq: Bio 1500 or FW 1100 + Chem II + NatR 1070]
- BioSci 2200 – General Genetics (4hr) Fall/Spring [prereq: Biology + Chem II]
- AnSci 3213 – Genetics of Agricultural Plants and Animals (3hr) Spring [prereq: Biology or Zoology]

Animal Form and Function Course - choose one:

- MPP 3202 - Elements of Physiology (5) Fall/Spring [prereq: 5 hrs. biology or consent]
- AnSci 3254 - Physiology of Domestic Animals (3) Fall [prereq: Bio 1500 + Chem 1320] **AND** AnSci 3255 – Physiology of Domestic Animals Lab (2) Spring [prereq AnSci 3254]
- Bio 3700 – Animal Physiology (5) [prereq: Bio 2300]
- PTH & AS 2201 and 2203 – Human Anatomy Lecture (3) and Lab (2) Fall/Spring
- Biomed 3219 – Elements of Veterinary Anatomy (4) [prereq: 5 hr Biol or Zool] Not currently offered
- Bio 2300 – Introduction to Cell Biology (4) Fall/Spring [prereq: Bio 2200 + Chem 2100]

### III. Professional Core (37 hours)

NatR 1070 – Ecology and Renewable Resource Management (3hr) Spring

FW 2100 – Colloquium in Fisheries and Wildlife (1hr) Fall

Public Speaking – Choose one:

- AgEd 2220 – Verbal Comm in Ag (3hr) Fall/Spring
- PRT 3231 – Principles of Interpretive Outdoor Recreation (3hr) Spring

For 2151 – Dendrology (4hr) Fall [Botany]

NatR 3110 – Biometrics (3hr) [prereq: statistics or instructor’s consent]

Ecology – Choose one:

- Bio 3650 – General Ecology (5hr) Fall [prereq: 10 hrs biology] **WI**
- \*For 4320 – Forest Ecology (5hr) Fall [prereq: For 2151 or Bio 3210] \*Req. for Forestry Certif. **WI**

FW 3600 – Intro to Conservation Biology (3) Spring [prereq: Bio 3650]

For 4330 – Silviculture (3hr) Spring [prereq: For 2151 and For 4320 or Bio 3650]

Law and Policy – Choose one:

- AgEcon 2156 – Environmental Law and Policy (3hr) Fall [prereq: 3 hrs ag econ]
- NatR 4353 – Policy and Administration (3hr) Spring [prereq: senior standing or consent]

Water Quality – Choose one:

- FW 3400 – Water Quality and Management (3hr) Spring [prereq: Chem I]
- For 4390 – Watershed Management and Water Quality (3hr) Fall [prereq: For 2540]

FW 4500 – Population Dynamics (3hr) [prereq: Calculus + Stat + Bio 3650 or For 4320]

NatR 4970 – Resource Practicum – Senior capstone course\* (3hr) Spring [prereq: senior standing or consent] \* C- or better required for credit

#### **IV. Summer Field Studies (6hr) Must take concurrently [prereq: Soils 2100; For 2151]**

For 2540 – Forest Hydrology Field Studies (1hr)

For 2541 – Forest Utilization (1hr)

For 2542 – Forest Measurement and Inventory (1hr)

For 2543 – Forest Ecology Field Studies (1hr)

For 2544 – Intro to Silviculture and Management (1hr)

For 2545 – Forest Management Planning (1hr)

#### **V. Professional Track – Minimum of 10 courses AND 32 hours required**

##### **Fisheries and Wildlife Core– 5 courses minimum**

###### A. Science and Natural History (must take at least 1 Terrestrial and 1 Aquatic. Only 1 outside FW)

FW 2600 – Ornithology (4 hr) Spring [prereq: 5 hours biology]

FW 2700 – Ichthyology (4 hr) Spring [prereq: 8 hours biology]

FW 3660 – Mammalogy (4 hr) Spring [prereq: 8 hours biology]

FW 4100 – Limnology (3-4 hr) Fall [prereq: Bio 3650]

BioSci 3360 – Herpetology (4 hr) Spring ODD yrs [prereq: 8 hours biology]

BioSci 3710 – Entomology (3 hr) **AND** BioSci 3715 – Insect Diversity (2 hr) Fall [5 hrs biology]

###### B. Management – (must take at least 1 Terrestrial and 1 Aquatic)

FW 2800 – Controversies in Wildl Conserv (3) Fall ODD yrs [soph + NatR 1070 + gen bio or zool]

FW 3900 – Ecology of Fishes (3) Spring EVEN yrs [FW 2700 Bio 3650]

FW 4300 – Fisheries Management (3 hr) Fall [prereq: Bio 3650 + stat or consent]

FW 4400 – Tech. for Fisheries Manag/ Conserv. (3 hr) Fall **WI** [Bio 3650 + stat + FW 2700 or 4300]

FW 4600 – Ecosystems Management (4 hr) Fall **WI** [Bio 3650]

FW 4700 – Wildlife Research/ Manag Tech (4 hr) Fall EVEN yrs **WI** [Bio 3650 + stat or biometrics]

###### C. Specialty Courses (5<sup>th</sup> course can come from this list or from A or B)

FW 3200 – Aquaculture (3 hr) Spring ODD

FW 3700 – Behavioral Ecology (3 hr) Fall [2 FW, BioSci or AnSci courses]

FW 3800 – Waterfowl Biology/Manag (3 hr) Spring [Prereq: F&W 2600] (not currently offered)

FW 4200 – Urban Wildlife Management (3 hr) Spring **WI** [prereq: Bio 3650]

FW 4220 – Human Dimensions of Conservation (3 hr) Fall ODD yrs [1 policy or manag. course]

International Studies or Study Abroad (1-12 hr) [approved FW Study Abroad Proposal required]

##### **Forestry Core – 5 courses minimum**

###### A. Science (must take at least 2; cannot duplicate courses from Professional Core III)

For 3212 – Forest Health and Protection (4 hr) Spr ODD yrs [prereq: For 2151 or consent]

For 4320 – Forest Ecology\* (5 hr) Fall **WI** [prereq: For 2151 or consent]

For 4340 – Tree Physiology(3 hr) Fall [prereq: Bio Sci 1200; Chem 1100; Bioch 2110 or consent]

For 4390 – Watershed Management & Water Quality (3 hr) Fall

###### B. Management – (must take at least 2)

For 3207 – Forest Fire Control and Use (2 hr) Fall

For 4350 – Forest Econ\* (3 hr) Spr [prereq: Ag Econ 1041 or 3080]

For 4360 – Forest Information Systems (3 hr) Fall

For 4380 – Forest Resource Management (3 hr) Fall [prereq: For 4330 and 4350]

Nat Res 4325 – Intro to Geographic Information Systems (3 hr) Spr

###### C. Specialty Courses (5<sup>th</sup> course can come from this list or from A or B)

For 3240 – Wood Technology (3 hr) Fall

For 3290 – Urban Forestry (2 hr) Spr EVEN yrs [prereq: For 2151 or consent]

For 4365 – Logging Systems (3 hr) Spr [For 2543 and 2544]

For 4370 – Wildland Fire Management (3 hr) Spr EVEN yrs [prereq: For 3207]

For 4385 – Agroforestry (3 hr) Spring (on-line only)

The following courses collectively meet the requirements for the **SAF accredited Forest Resource**

**Management** curriculum: For 3207, For 3212, For 3240, For 4320, For 4340, For 4350, For 4360, For 4380, For 4390.

\*Required as a minimum for **Forestry Certification** if the accredited curriculum has not been completed.