

# TWS Certification

## Effective August 29, 2016

### University of Minnesota-Fisheries, Wildlife and Conservation Biology Coursework to attain educational standards for TWS Certification (August 29 2016)

The Wildlife Society offers a certification program for wildlife biologists, to recognize individuals that have met pre-specified educational standards and have gained significant expertise through their professional work experiences. Individuals that have met the education standards, but not the professional work experience, may apply for an Associate Wildlife Biologist Certification. More information on the program can be found here: <http://joomla.wildlife.org/documents/certbook.pdf>

Students fulfilling the Wildlife specialization of FWCB should meet The Wildlife Society's educational requirements Associate Wildlife Biologist certification as long as: 1) he/she selects ESPM 3575-Wetlands for Group 4 because this course fulfills part of the physical science and botany requirements for TWS and 2) selects a **total of 8 communication credits in the core and wildlife specialization.**

**1. Biological Sciences:** Thirty-six (36) semester hours\* in biological sciences are required and must include courses in the following subcategories (Note: the sum of hours required in subcategories a-e is 33; the remaining 3 hours may be in any of these five subject areas): **FWCB-43 credits**

**a. Wildlife Management (6 hrs min)**

*FWCB: 9 credits*

FW 2001 Introduction to Fisheries, Wildlife, and Conservation Biology (3)

FW 4103 Principles of Wildlife Management (3)

FW 5603W Habitats and Regulation of Wildlife (3)

**b. Wildlife Biology (6 hrs min)**

*FWCB: 8 credits*

*Select two of the following:*

EEB 4129 or EEB 4839 Mammalogy (4)

EEB 4134 or EEB 4844 Ornithology (4)

FW 4101 Herpetology (4)

**c. Ecology (3 hrs min):**

*FWCB: 4 credits*

BIOL 3407 or BIOL 3408W or BIOL 3807 Ecology (4)

**d. Zoology (9 hrs min)**

*FWCB: 12 credits*

FW 3108 Field Methods in Research and Conservation of Vertebrates (3)

BIOL 1009 General Biology (2/4 credits as Zoology)

BIOL 2012 General Zoology (4)

GCD 3022 Genetics (3) or FW 4301 Conservation Genetics (3)

**e. Botany (9 hr min):**

*FWCB: 10 credits*

BIOL 1009 General Biology (2/4 credits as Botany)

FW 3106 Important Plants in Fisheries and Wildlife Habitats (1)

BIOL 2022 General Botany (3)

ESPM 3575 Wetlands (1/3 credits as Botany)

*Select one of the following:*

FR 1101 Dendrology: Identifying Forest Trees and Shrubs (3)

PBIO 4321 Minnesota Flora or PBIO 4511 Flowering Plant Systematics (3)

**2. Physical Sciences:** Nine (9) semester hours in physical sciences such as chemistry, physics, geology, or soils, with at least two disciplines represented.

***FWCB: 9 credits***

CHEM1061/1065 Chemical Principles I (4)

PHYS 1001W, 1101W, or 1201W) Introductory Physics (4)

ESPM 3575 Wetlands (1/3)

**3. Quantitative Sciences:** Nine (9) semester hours in quantitative sciences that must include:

**a. Basic Statistics (3 hrs):** A course in basic statistics (3 hours).

***FWCB: 4 credits***

FW 4001 Biometry (4)

**b. Quantitative Sciences (6 hrs):**

***FWCB: 8 credits***

MATH 1142, 1271, or 1281 Calculus (4)

FW 5051 Analysis of Populations (4)

**4. Humanities and Social Sciences:** Nine (9) credits required. ***FWCB: Met by University LibEd requirements***

**5. Communications:** Twelve (12) semester hours.

***FWCB: 3 courses total, if all are 4 cr.***

WRIT 1301 or WRIT 1401 University Writing (by placement) (4)

2-3 additional communications course (8): WRIT 3152W Writing on Issues of Science and

Technology, WRIT 3221W Communication Modes and Methods, WRIT 3562W Technical and

Professional Writing

**6. Policy, Administration, and Law:** Six (6) semester hours

***FWCB: 6 credits***

*Select two of the following:*

FW 3925 Human Dimensions of Fisheries and Wildlife Management (3)

ESPM 3011W Ethics in Resource Mgmt (3)

ESPM 3202W Env't. Conflict Mgmt, Leadership, and Planning (3) S

ESPM 3241W Natural Resource & Env. Policy (3)

ESPM 3271 Environmental Policy, Law & Human Behavior (3)