THE
UNIVERSITY
OF RHODE ISLAND

Appendix K

REVISED 12/2016

# Modified Form
# For New Interdisciplinary Minors, and New Tracks/Options/Sub-plans/Concentrations

**A Proposal for:** Consolidation of tracks in the Animal Science and Technology major

**Date:** February 21, 2018

## A. PROGRAM INFORMATION

**A1. Name of institution:** University of Rhode Island

**A2. Name of department, division, school or college**
Department - FAVS
College - CELS

**A3. Title of proposed program and Classification of Instructional Programs (CIP) code**
Program title - existing
Classification code (CIP) - existing

**A4. Intended initiation date of program change. Include anticipated date for granting first degrees or certificates, if appropriate.**
Initiation date: September 2018
First degree date: May 2019

**A5. Intended location of the program:** Kingston, Rhode Island

**A6. Description of institutional review and approval process**

| | Approval Date |
|---|---|
| Department - FAVS | 10-20-2017 |
| College | 12-20-2017 |
| CAC/Graduate Council | |
| Faculty Senate | |
| President of the University | |

**A7. Summary description of proposed program (not to exceed 2 pages)**

We are not proposing a new program but rather are proposing to modify the options available to our students. Currently, this major has three options available to students: Pre-veterinary, Animal Science and Animal Management. One of the primary differences between our three curriculum options is the suite of basic science courses that are required, with the Pre-veterinary option being the most rigorous and Animal Management being the least rigorous.

The **Pre-veterinary option** has the least flexibility of the three options and this is necessary and dictated by the course prerequisites needed to apply to the various Colleges of Veterinary Medicine located domestically and abroad. In this proposal, although we have made a few minor adjustments to reflect the current course prerequisites for DVM programs, this option remains largely unchanged.

**Option sheet update:**

1. **Replace STA 307 or 308 or 409 with STA 308**. Veterinary colleges require an introductory statistics class and some of our students have run into conflicts with vet colleges admissions recognizing any other course than the one named Introductory Statistics.
2. Replace requirement for **WRT 106 with WRT 104 or 106** and replace requirement for **WRT 332 with WRT 332 or 334**. Both of these changes will provide greater flexibility (see attached letter of support from Dr. Jeremiah Dyehouse, Dept Chair, Writing and Rhetoric).

Over the past year, the Animal and Veterinary Science faculty have been reviewing the two remaining options available to our majors: Animal Management and Animal Science with the goal of consolidating these two options into **one Animal Science option** in order to reduce redundancy between the options and provide greater coursework flexibility to students to enable them to tailor their training and coursework to their desired career path. Additionally, we have developed an extensive advising sheet with approved courses suggested for various focus areas.

**Summary of changes in consolidating two options into one Animal Science option.**

| | Old Animal Mgmt | Old Animal Science | New Option |
|---|---|---|---|
| **Basic Non-Science Requirement** | WRT 104 or 106 | WRT 104 or 106 | WRT 104 or 106 and one WRT 3XX or above |
| **Basic Science** | **24 credits**<br>BIO 101, 102, 103, 104, CHM 101 or 103, CHM 102 or 105, 112 or 124, 114 or 126, MTH 107 or higher<br><br>Balance 5 credits from approved course list | **33-39 credits**<br>BIO 101, 102, 103, 104, CHM 101, 102, 112, 114, CHM 124/126 or 226/227/228, CMB 201 or 211, MTH 131, STA 307 or 308<br><br>Balance 4-6 credits from approved course list | **25 credits**<br>BIO 101, 102, 103, 104, CHM 101 or 103, CHM 102 or 105, MTH course which ~~(~~fulfills A1,B3 gen ed outcomes~~)~~<br><br>Balance 10 credits from approved course list |
| **Concentration** | **26 credits**<br>AVS 323, 324, 325, 331, 333, 343, 462<br><br>Balance 6 credits from approved course list | **25 credits**<br>AVS 323, 324, 331, 332, 333, 412, 472 AVS or BIO (6 cr)<br><br>Balance 0 credits | **25 credits**<br>AVS 331, 333, 332, 343, AVS 4XX (6 cr)<br><br>Balance 9 credits from approved course list |
| **Supporting Electives** | **28-29 credits**<br>AVS 104, 132G, 201, 212, 275<br><br>Balance 13-14 credits from approved course list | **21-27 credits**<br>AVS 212, 275<br><br>Balance 14-20 credits from approved course list | **29 credits**<br>AVS 212<br><br>Balance 26 credits from approved course list |

**A8. Signature of the President**

_____
David M. Dooley

**A9. Person to contact during the proposal review**
Name: Marta Gomez-Chiarri
Title: Professor and Dept. Chair for FAVS
Phone: 401-874-2917
Email: gomezchi@uri.edu

**A10. List and attach any signed agreements for any cooperative arrangements made with other institutions/agencies or private companies in support of the program.**
Not applicable

**B. RATIONALE: There should be a demonstrable need for the program.**

**B1. Why is the new program being developed?**

This is not a new program but a modification of an existing program (see above summary description A7).

**B2. What is the economic need and workforce data related to the program?**

**a. Provide information on jobs available as a result of successfully completing the certificate or degree: job titles, job outlook/growth, and salaries.**

This is not a new program but a modification of an existing program (see above summary description A7).

**B3. What entities are advocating for this program? Was an advisory board used to develop the curriculum?**
This is not a new program but a modification of an existing program (see above summary description A7).

**C. INSTITUTIONAL ROLE: The program should be clearly related to the published role, scope, and mission of the institution and be compatible with other programs and activities of the institution.**

**C1. Explain how the program is consistent with the published role, scope, and mission of the institution and how it is related to the institution's Academic Plan.**

This is not a new program but a modification of an existing program (see above summary description A7).

## D. INTER-INSTITUTIONAL CONSIDERATIONS:

**D1. What are the similar programs in the state and region?**

**a. If similar programs exist, how is this program different or why is duplication necessary?**

This is not a new program but a modification of an existing program (see above summary description A7).

**b. Have you communicated with other institutions about the development of this program and have any concerns been raised related to role, scope, and mission or duplication?**

This is not a new program but a modification of an existing program (see above summary description A7).

**D2. How do courses in this program transfer to other schools?**

This is not a new program but a modification of an existing program (see above summary description A7).

**D3. How does this program align to academic programs at other institutions?**

This is not a new program but a modification of an existing program (see above summary description A7).

**D4. Are recipients of this credential accepted into programs at the next degree level without issue?**

This is not a new program but a modification of an existing program (see above summary description A7).

**D5. How does this program of study interface with degree programs at the level below them?**

This is not a new program but a modification of an existing program (see above summary description A7).

**D6. Are cooperative agreements or affiliations established? If so, what?**

Not applicable

## E. PROGRAM:

**E1. Are there pre-requisite courses? If so, please explain/list?**

**E2. Curriculum**

**a. How many credit hours are required to graduate (include all general education and pre-requisites)?**

This is not a new program but a modification of an existing program (see above summary description A7) – credits to graduate remain at 120.

**b. What courses are required for the program?**

**c. What are the new courses and descriptions that will go into the course catalog?**

This major, offered by the Department of Fisheries, Animal and Veterinary Science, is designed for students interested in applied animal science careers. Animal and veterinary sciences play a vital role in the management and care of livestock, companion animals as well as those animals maintained at zoos and aquariums and laboratory animal facilities. Options are available to students interested in animal sciences or veterinary medicine~~, animal sciences, and animal management~~.

The major requires the following core courses: AVS 101, 102, 110, 331, 332, 333 (12 credits) plus option-specific courses as indicated below. Including the core courses, there are ~~16-42~~25-50 credits of basic science~~,~~ including BIO 101/103 and BIO 102/104, 2~~5~~-2~~6~~ credits of concentration courses and 11-2~~7~~ credits of supporting courses required for this major. A total of 120 credits are required for graduation.

**Animal Science Option.** This option includes coursework in animal management, nutrition, physiology, behavior, and disease and provides broad flexibility for students in their choice of animal science courses. Students have the option to focus their coursework specifically on domestic livestock, exotic animals or animal technology or be more broadly focused.~~.~~ Research techniques and procedures for animal care are emphasized along with a strong background in the sciences.~~Students will normally emphasize one or more of these areas. A strong preparatory background in the basic sciences is needed.~~ Students in this option ~~seek employment~~pursue careers as researchers, veterinary technicians, food animal producers, laboratory animal technician or high school agricultural education teacher. Additionally, there are career opportunities at zoos or aquariums (educator, researcher and exotic animal manager), within the federal, state and local government as well as with many animal-related businesses. ~~in technical areas and/or continue their studies in specialized graduate programs.~~
In addition to the core courses specified of the major, the following courses are required: AVS 212 and 343 and 6 additional credits in AVS~~, 275, 323, 324, 332, 412, 472; AVS 420 or BIO 352~~; COM 100, CHM 101/~~,~~102 or 103/105~~, 112, 114; CHM 124, 126 or CHM 226, 227, 228; CMB 201 or 211;~~ ~~and~~ MTH course which fulfills A1 and B3 general education outcomes, ~~131 and STA 307 or 308(fulfills A1, B3),~~ WRT 104 or 106, WRT 3XX or 4XX. The remaining credit requirements will be selected from the concentration courses (9~~6~~ credits) and supporting electives (~~-~~2~~61-27~~ credits) approved for this option.

~~**Animal Management Option.** Research techniques and procedures for animal care are emphasized along with a strong background in the sciences. Students with this training and animal experience would be employed in research and teaching facilities as animal technicians, animal technologists, supervisors of animal technicians, and assistant research project leaders.~~
~~In addition to the core courses specified for the major, the following courses are required: AVS 104, 201, 212, 275, 323, 324, 325, 343, 462; CHM 101, 102, 112, 114 or CHM 103, 105, 124, 126; MTH 107 or higher. The remaining credits will be selected from the concentration courses (6 credits) and supporting electives (12 credits) approved for this option.~~

**Pre-Veterinary Option.** This option requires a demonstrated capability in the basic sciences and prepares students for admission to veterinary schools offering ~~the~~ a ~~D.V.M.~~Doctorate of Veterinary Medicine (DVM) degree. Students in this track will also be well prepared to pursue graduate programs in animal physiology, nutrition and health. Because admission requirements among schools are not totally uniform and are subject to change, students should determine specific requirements of the schools in which they are interested.
In addition to the core courses specified for the major, ~~-~~the following courses are required: AVS 104, ~~332,~~ 412, 472; BIO 341, BIO/CMB 352; COM 100, CMB 211, 311; ~~-~~BUS or ECN (3 credits); CHM 101, 102, 112, 114, 226, 227, 228; PHY 111, 112, 185, 186; MTH 131, ~~-and-~~ STA ~~307 or STA~~ 308, WRT 104 or 106, WRT 332 or 334 ~~or 409~~. The remaining credits will be selected from the concentration courses (6~~9~~ credits) and supporting electives (6 credits) approved for this option.

**d. Are there specializations and options? If so, please describe.**

See above summary description A7

**e. Is the program content guided by program-specific accreditation standards or other outside guidance?**

This is not a new program but a modification of an existing program (see above summary description A7).

**f. What are the learning goals (what students are expected to gain, achieve, know, or demonstrate by completion of the program)?**

This is not a new program but a modification of an existing program (see above summary description A7).

## F. FACULTY AND STAFF: The faculty and support staff for the program should be sufficient in number and demonstrate the knowledge, skills, and other attributes necessary to the success of the program.

**F1. What are the number of each needed?**

This is not a new program but a modification of an existing program (see above summary description A7).

**F2. Are these new positions or reassignments?**

This is not a new program but a modification of an existing program (see above summary description A7).

**F3. What are the minimal degree level and academic/technical field requirements and certifications required for teaching in this program?**

This is not a new program but a modification of an existing program (see above summary description A7).

## G. STUDENTS:

**G1. How are students selected for the program?**

This is not a new program but a modification of an existing program (see above summary description A7).

**G2. Are there admission requirements?**

This is not a new program but a modification of an existing program (see above summary description A7).

**G3. What is the primary source of students?**

**a. New students or drawn from other programs?**

This is not a new program but a modification of an existing program (see above summary description A7).

**b. Industry sponsored students/ employees? Describe.**

This is not a new program but a modification of an existing program (see above summary description A7).

**G4. What is the estimated number of students in the program?**

This is not a new program but a modification of an existing program (see above summary description A7).

**G5. What is the estimated number of annual graduates?**

This is not a new program but a modification of an existing program (see above summary description A7).

## H. EVALUATION:

**H1. How will the program be evaluated?**

**a. Performance measures to evaluate the program.**

b. This is not a new program but a modification of an existing program (see above summary description A7).

**b. Will the program be accredited? If so, when? How?**

This is not a new program but a modification of an existing program (see above summary description A7).

## I. WHAT SPECIAL EQUIPMENT OR RESOURCES ARE NEEDED?

**I1. Special instructional resources and services needed? (Clinical space, internships, proctors)**

This is not a new program but a modification of an existing program (see above summary description A7).

**I2. Facilities and capital equipment?**

This is not a new program but a modification of an existing program (see above summary description A7).

## J. IS THE PROGRAM FINANCIALLY VIABLE?

**J1. ALL PROPOSALS: Complete the Rhode Island Office of Postsecondary Commissioner Budget Form demonstrating either**

**a. the need for additional resources or**

**b. that existing funds are sufficient for carrying out the program.**

**The completed proposal with Budget Form requires review by the URI Budget and Financial Planning Office. If no new funds are requested, proposers shall request a Statement of No Financial Impact from the URI Budget and Financial Planning Office.**

See attached

THE
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**BUDGET AND FINANCIAL PLANNING**
Adams House, 85 Upper College Road, Kingston, RI 02881 USA p: 401.874.2509 f: 401.874.5824 uri.edu/budget

DATE: March 9, 2018

TO: Nancy F. Neff
Coordinator, Faculty Senate

FROM: Linda Barrett
Director, Budget and Financial Planning

SUBJECT: Proposal for a Consolidation of Tracks in Animal Science and Technology major

As requested in an email from Katherine Petersson, Associate Professor in the College of Environmental Life Sciences, dated February 22, 2018, the Budget and Financial Planning Office has reviewed the submitted documents related to the proposal for a Consolidation of tracks in the Animal Science and Technology major.

The Budget and Financial Planning Office, including communication with Enrollment Services, concurs that the request for a Consolidation of Tracks in the Animal Science and Technology major is not anticipated to have an impact on the Fund 100 unrestricted budget as it has been presented and that no new revenues are projected since the major is for students that are currently enrolled at URI.

Please let us know if you require any further information.

cc: Donald DeHayes
Laura Beauvais
John Kirby
Cheryl Hinkson
Joanne Lawrence
Dean Libutti
Matthew Bodah
Katherine Petersson
Colleen Robillard
John Humphrey

Office/BudgetImpactStatements/animalscienceandtechnologymajor/BudgetImpactStatementLetterFinal

## ACADEMIC PROGRAM BUDGET FORM Not a new program, it should have no changes

Use this form for programs that can be pursued on a full-time basis, part-time basis, or through a combination of full-time and part-time attendance. **Page 1 of 3**

Choose one: □ Full-time □ Part-time □ Combination of full- and part-time

**REVENUE ESTIMATES**

| | Year 1 | Year 2 | Year 3 | Year 4 |
|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 |
| Tuition: In-State | $12,002 | $12,488 | $12,488 | $12,488 |
| Tuition: Out-State | $28,972 | $29,402 | $29,402 | $29,402 |
| Tuition: Regional | $21,004 | $21,854 | $21,854 | $21,854 |
| Mandatory fees per student | $1,790 | $1,908 | $1,908 | $1,908 |
| FTE # of New Students: In-State | 0 | 0 | 0 | 0 |
| FTE # of New Students: Out-State | 0 | 0 | 0 | 0 |
| # of In-State FTE students transferring in from the institution's existing programs | 0 | 0 | 0 | 0 |
| # of Out-State FTE students transferring in from the institution's existing programs | 0 | 0 | 0 | 0 |

| **TUITION AND FEES** | Newly Generated Revenue | Revenue from existing programs | Newly Generated Revenue | Revenue from existing programs | Newly Generated Revenue | Revenue from existing programs | Newly Generated Revenue | Revenue from existing programs |
|---|---|---|---|---|---|---|---|---|
| **First Year Students** | | | | | | | | |
| In-State tuition | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| Out-of-State tuition | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| Regional tuition | | | | | | | | |
| Mandatory fees | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| **Second Year Students** | | | | | | | | |
| In-State tuition | | | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| Out-of-State tuition | | | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| Regional tuition | | | | | | | | |
| Mandatory fees | | | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| **Third Year Students** | | | | | | | | |
| In-State tuition | | | | | | | | |
| Out-of-State tuition | | | | | | | | |
| Regional tuition | | | | | | | | |
| Mandatory fees | | | | | | | | |
| **Fourth Year Students** | | | | | | | | |
| In-State tuition | | | | | | | | |
| Out-of-State tuition | | | | | | | | |
| Regional tuition | | | | | | | | |
| Mandatory fees | | | | | | | | |
| **Total Tuition and Fees** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** |
| | | | | | | | | |
| **GRANTS** | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| **CONTRACTS** | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| **OTHER (Specify)** | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| **Total Grants, Contracts, Other** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** |
| | | | | | | | | |
| **TOTAL** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** |

NOTE: All of the above figures are estimates based on projections made by the institution submitting the proposal.

## ACADEMIC PROGRAM BUDGET FORM

Use this form for programs that can be pursued on a full-time basis, part-time basis, or through a combination of full-time and part-time attendance. 

**This is not a new program, simply adding focus areas to the major**

**EXPENDITURE ESTIMATES**

| | Year 1 2018/19 | | Year 2 2019/20 | | Year 3 2020/21 | | Year 4 2021/22 | |
|---|---|---|---|---|---|---|---|---|
| **PERSONNEL SERVICES** | Additional resources required for program | Expenditures from current resources | Additional resources required for program | Expenditures from current resources | Additional resources required for program | Expenditures from current resources | Additional resources required for program | Expenditures from current resources |
| Administrators | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| Faculty | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| Support Staff | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| Others | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| Fringe Benefits % | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| **Total Personnel** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** |
| **OPERATING EXPENSES** | | | | | | | | |
| Instructional Resources | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| Other (specify) | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| **Total Operating Expenses** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** |
| **CAPITAL** | | | | | | | | |
| Facilities | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| Equipment | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| Other | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| **Total Capital** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** |
| **NET STUDENT ASSISTANCE** | | | | | | | | |
| Assistantships | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| Fellowships | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| Stipends/Scholarships | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| **Total Student Assistance** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** |
| **TOTAL EXPENDITURES** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** |

NOTE: All of the above figures are estimates based on projections made by the institution submitting the proposal.

## ACADEMIC PROGRAM BUDGET FORM

Use this form for programs that can be pursued on a full-time basis, part-time basis, or through a combination of full-time and part-time attendance. 

| | Year 1<br>2018/19 | Year 2<br>2019/20 | Year 3<br>2020/21 | Year 4<br>2021/22 |
|---|---|---|---|---|
| **BUDGET SUMMARY OF COMBINED EXISTING AND NEW PROGRAM** | | | | |
| Total Revenue | $0.00 | $0.00 | $0.00 | $0.00 |
| Total Expenses | $0.00 | $0.00 | $0.00 | $0.00 |
| **Excess/Defeciency** | **$0.00** | **$0.00** | **$0.00** | **$0.00** |
| **BUDGET SUMMARY OF EXISTING PROGRAM ONLY** | | | | |
| Total Revenue | $0.00 | $0.00 | $0.00 | $0.00 |
| Total Expenses | $0.00 | $0.00 | $0.00 | $0.00 |
| **Excess/Defeciency** | **$0.00** | **$0.00** | **$0.00** | **$0.00** |
| **BUDGET SUMMARY OF NEW PROGRAM ONLY** | | | | |
| Total of Newly Generated Revenue | $0.00 | $0.00 | $0.00 | $0.00 |
| Total of Additional Resources Required for | $0.00 | $0.00 | $0.00 | $0.00 |
| **Excess/Deficiency** | **$0.00** | **$0.00** | **$0.00** | **$0.00** |

NOTE: All of the above figures are estimates based on projections made by the institution submitting the proposal.

# THE UNIVERSITY OF RHODE ISLAND

**Effective Fall 2018**

**Animal & Veterinary Science - BS**
**Option: Animal Science**
**EL_ANSC_BS 120 Earned credits Total**

**Student:** _____
**Student ID:** _____
**Advisor:** _____

**Step 1:REVIEW YOUR PROGRAM REQUIREMENTS**

**1. Basic Non-Science Requirements (9 cr)**

| | Course | Semester | Grade | Credit |
|---|---|---|---|---|
| Com Fundamentals (B2) | COM 100 | | | 3 |
| Wrt to Inform & Explain (B1, B4) or Intro to Research Wrt ( B1, B4) | WRT 104 or 106 | | | 3 |
| WRT 3XX or 4XX | WRT | | | 3 |
| | | | | |

**2. Basic Science Requirements (25 cr)**

| | | | | |
|---|---|---|---|---|
| Principles of Biology I (A1) | BIO 101 | | | 3 |
| Principles of Biology I Lab (A1) | BIO 103 | | | 1 |
| Principles of Biology II (A1) | BIO 102 | | | 3 |
| Principles of Biology II Lab (A1) | BIO 104 | | | 1 |
| General Chemistry Lecture I or Introductory Chemistry (A1) | CHM 101 or 103 | | | 3 |
| Laboratory for Chemistry 101 or Introductory Chemistry lab (A1) | CHM 102 or 105 | | | 1 |
| MTH (fulfills A1,B3) | | | | 3 |
| | | | | |
| | | | | |

**3. Introductory Professional Course Requirement (5 cr)**

| | | | | |
|---|---|---|---|---|
| Introduction to Animal Science (A1) | AVS 101 | | | 3 |
| Intro. Animal Science Laboratory | AVS 102 | | | 1 |
| Freshman Seminar AVS | AVS 110 | | | 1 |

**4. Concentration Course Requirements (25 cr)***

| | Course | Semester | Grade | Credit |
|---|---|---|---|---|
| Anatomy & Physiology | AVS 331 | | | 3 |
| Anatomy & Physiology Lab | AVS 333 | | | 1 |
| Animal Diseases | AVS 332 | | | 3 |
| Behavior of Domestic Animals | AVS 343 | | | 3 |
| | AVS 4____ | | | 3 |
| | AVS 4____ | | | 3 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

*AVS GPA (min 2.0 required)
Maximum 3 credits AVS 491/492

**5. Supporting Elective Requirements (29 cr)^**

| | Course | Semester | Grade | Credit |
|---|---|---|---|---|
| Feeds and Feeding* | AVS 212 | | | 3 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

*Requirement waived if taking AVS 412
^Maximum 9 credits total of AVS 399, 491, 492 can be counted towards degree

**6. Free Electives (2-3 cr)**

| | | | | |
|---|---|---|---|---|
| Planning for Academic Success | URI 101 | | | 1 |
| | | | | |
| | | | | |
| | | | | |

**7. GenEd courses and Free Electives (max 24 cr)**

Courses in this section will be courses fulfilling GenEd outcomes that do not appear in sections 1-5 of this option sheet. Careful selection of these courses will leave space for additional courses in your major or minor area of interest.

| | | | | |
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| | | | | |

Total credits _____

Approved for Graduation
Advisor_____Date: _____

**THE UNIVERSITY OF RHODE ISLAND**

**Animal & Veterinary Science - BS**
**120 Credits Total**
**Option: Animal Science**

**Student: _____**
**Student ID:_____**
**Advisor:_____**

## General Education Guidelines:

General education is 40 credits. Each of the twelve outcomes (A1-D1) must be met by at least 3 credits. A single course may meet more than one outcome, but cannot be double counted towards the 40 credit total. At least one course must be a Grand Challenge (G). No more than twelve credits can have the same course code. General education courses may also be used to meet requirements of the major or minor when appropriate.

**Step 2: LIST COURSES THAT MEET GEN ED**

| General Education Credit Count | | | | | | |
|---|---|---|---|---|---|---|
| **At least** 40 credits, no more than 12 credits with the same course code | | | | | | |
| **Course** | **Outcome** | **Credit** | | **Course** | **Outcome** | **Credit** |
| AVS 101* | A1 | 3 | | | | |
| BIO 101* | A1 | 3 | | | | |
| BIO 102* | A1 | 3 | | | | |
| BIO 103* | A1 | 1 | | | | |
| BIO 104* | A1 | 1 | | | | |
| COM 100* | B2 | 3 | | | | |
| CHM 101* or 103* | A1 | 3 | | | | |
| CHM 102* or 105* | A1 | 1 | | | | |
| WRT 104* or 106* | B1, B4 | 3 | | | | |
| MTH | A1, B3 | 3 | | | | |
| | | | | | | |
| | | | | | Total Gen Ed credits | 40 |

**NOTE: BECAUSE MOST COURSES MEET MORE THAN ONE OUTCOME, YOUR OUTCOME AUDIT MIGHT BE COMPLETED BEFORE YOU REACH YOUR 40 CREDITS. HOWEVER, YOU MUST STILL COMPLETE 40 CREDITS OF GENERAL EDUCATION**

**Advising Notes:**

**Step 3: LIST COURSE AS EACH OUTCOME IS MET**

| General Education Outcome Audit | |
|---|---|
| | **Course** |
| **KNOWLEDGE** | |
| **A1.** STEM | |
| **A2.** Social & Behavioral Science | |
| **A3.** Humanities | |
| **A4.** Arts & Design | |
| **COMPETENCIES** | |
| **B1.** Write effectively | |
| **B2.** Communicate effectively | |
| **B3.** Mathematical, statistical, or computational strategics | |
| **B4.** Information literacy | |
| **RESPONSIBILITIES** | |
| **C1.** Civic knowledge & responsibilities | |
| **C2.** Global responsibilities | |
| **C3.** Diversity & Inclusion | |
| **INTEGRATE & APPLY** | |
| **D1.** Ability to synthesize | |
| **GRAND CHALLENGE** | |
| course of your 40 credits is an approved "G" course | |
| **NOTE: COURSES MARKED WITH A * CAN BE USED TO SATISFY MAJOR AND GENERAL EDUCATION** | |

**Effective Fall 2018**

**B.S. Animal & Veterinary Science- Animal Science Option- Effective Fall 2018**
**Sample 4 Year Plan**
*College of the Environment and Life Sciences*

**Freshman Year Fall Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| AVS 101,102 | Introduction to Animal Science, Lab | 4 | |
| BIO 101,103 | Principles of Biology I, Lab | 4 | |
| COM 100 | COM Fundamentals | 3 | |
| | B2 General Education Course | 3 | |
| URI 101 | Planning for Academic Success | 1 | |
| | | | |
| | | 15 | |

**Freshman Year Spring Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| AVS 110 | AVS Freshman Seminar | 1 | |
| BIO 102,104 | Principles of Biology II, Lab | 4 | |
| WRT 104 OR 106 | Writing Gen Ed (B4) | 3 | |
| | Concentration or Supporting Elective Courses | 3 | |
| | | 3 | |
| | General Education Course | 3 | |
| | | 17 | |

**Year 1 Milestones:** Earn 30 credits and a GPA of 2.0 or higher. Meet with your Advisor for ANSC option discussion.

**Sophomore Year Fall Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| AVS 331/333 | Anatomy and Physiology Lecture & Lab | 4 | |
| | Concentration | 3 | |
| | Supporting Elective | 4 | |
| CHM | Chemistry course with lab | 4 | |
| | | | |
| | | 15 | |

**Sophomore Year Spring Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| AVS 332 | Animal Diseases | 3 | |
| AVS 343 | Behavior of Domestic Animals | 3 | |
| | Supporting Elective | 3 | |
| WRT 3XX or 4XX | Writing course | 3 | |
| | General Education Course | 3 | |
| | | 15 | |

Year 2 Milestones: Earn 60 credits and a GPA of 2.0 or higher. Meet with your Advisor to dicuss major and experiential learning opportunities

**Junior Year Fall Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| | Concentration or Supporting Elective Courses | 3 | |
| | Concentration or Supporting Elective Courses | 3 | |
| | Concentration or Supporting Elective Courses | 3 | |
| | General Education course | 3-4 | |
| | Free Elective | 3-4 | |
| | | | |
| | | 15-17 | |

**Junior Year Spring Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| | Concentration or Supporting Elective Courses | 3 | |
| | Concentration or Supporting Elective Courses | 3 | |
| | Concentration or Supporting Elective Courses | 3 | |
| | General Education course | 3-4 | |
| | Free Elective | 3-4 | |
| | | | |
| | | 15-17 | |

**Year 3 Milestones**: Earn 90 credits and a GPA of 2.0 or higher. Meet with your Advisor to prepare intent to graduate application for fall submission.

**Senior Year Fall Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| | Concentration or Supporting Elective Courses | 9 | |
| | General Education course | 3-4 | |
| | Free Elective | 3-4 | |
| | | | |
| | | | |
| | | 15-17 | |

**Senior Year Spring Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| | Concentration or Supporting Elective Courses | 9 | |
| | General Education course | 3-4 | |
| | Free Elective | 3-4 | |
| | | | |
| | | | |
| | | 15-17 | |

**Year 4 Milestones:** Earn 120 credits and a GPA of 2.0 or higher in CUM and CON. Complete all remaining required courses.

**Total Credits to Graduate =** **120**

**B.S. Animal & Veterinary Science**
**Effective Fall 2018**

| Approved Concentration Courses | | | | | |
|---|---|---|---|---|---|
| | | | Focus Area | | |
| Course Code | GenEd outcome | Course (Semester offered, credits) | Livestock* | Exotic* | Pre-Vet and Technology* |
| AVS 301/302 | | Seminar in Animal and Veterinary Science (F, S, 1 cr) | | | |
| AVS 323 | | Animal Management I (F, 3 crs) | X | | |
| AVS 324 | | Animal Management II (S, 3 crs) | X | | |
| AVS 325 | | Animal Management III (S, 3 crs) | | X | |
| AVS 326 | | Equine Management (S, 3 crs) | X | | |
| AVS 343 | | Behavior of Domestic Animals (S, 3 crs) | X | X | X |
| AVS 344 | | Behavior of Domestic Animal Laboratory (S, 2 crs) | | X | |
| AVS 390 | | Wildlife and Human Disease (S, 3 crs) | | X | |
| AVS 399 | | Animal Science Internship (F,S, 1-6 crs) | | | |
| AVS 412 | | Animal Nutrition (F, 3 crs)^ | | | |
| AVS 420 | | Animal Breeding & Genetics (S, 3 crs) | X | | |
| AVS 440 | | Seminar on Marine Mammals (F, 3 crs) | | X | |
| AVS 442 | | required, 3 crs) | | X | X |
| AVS 462 | | Laboratory Animal Techniques (S, 4 crs) | | | X |
| AVS 463 | | Animal Veterinary Technology (S, 3 crs) | | | X |
| AVS 472 | | Physiology of Reproduction (S, 3 crs)^ | X | | |
| AVS 473 | | Physiology of Reproduction Lab (S, 1 cr) | X | | |
| AVS 491/492 | | Special Projects (F,S, 1-6 crs) | | | |
| AFS 504 | | Pathobiology (S alternate years, 3 crs)^ | | | X |
| BIO 341 | | Cell Biology (F, 3 crs)^ | | | X |
| BIO 352 | | General Genetics (F, S,Su, 4 crs)^ | | | X |
| BIO 437 | | Molecular Biology (S, 4 crs)^ | | | X |
| CMB 333 | | Immunology and Serology (F, 3 crs)^ | | | X |
| SAFS 400G | D1, G | Reimagining Food Systems Through Agroecology (F, 3 crs) | X | | |
| NRS | | Any 300 or 400 level course | | X | |
| | | Any 300 or 400 level course in CELS | | | |
| **Approved Supporting Elective Courses** | | | | | |
| **ALL OF THE ABOVE COURSES PLUS:** | | | | | |
| AVS 104 | | Advance Animal Management Techniques (F, S, 2 crs)^ | X | | X |
| AVS 132 | A2, G | Sustainable Agriculture, Food Systems and Society (S, 3 crs) | X | X | X |
| AFS 190 | A1 | Issues in Biotechnology (F, S, online, 3 crs) | | | X |
| AVS 201 | | Companion Animal Management (F, 3 crs) | | | X |
| AVS 275 | | Pasture and Grazing Management in Sustainable Ag (F, 4 crs) | X | | |
| BUS 140 | | Introduction to Business | X | | |
| BUS 149 | | Introduction to Entrepreneurship | X | | |
| ECN 201 | A2 | Principles of Economics, Microeconomics | X | | |
| EEC 105 | A2 | Introduction to Resource Economics | X | | |
| NRS 100 | A1 | Natural Resource Conservation (F, S, 3 crs ,A1) | | X | |
| NRS 223 | | Conservation Biology (S, 4 crs) | | X | |
| | | Any course in CELS | | | |
| **Approved Basic Science Courses or Supporting Electives for Management Option**<br>**Any course taught in CELS or College of Business or with the prefix APG, CHM, CSC, ECN/EEC, MTH, PHY, STA** | | | | | |
| BIO 341 | | Cell Biology^ | | | |
| BIO 352 | | General Genetics^ | | | |
| BIO 437 | | Molecular Biology^ | | | |
| CHM 124/126 | | Introduction to Organic Chemistry & Lab^ | | | |
| CMB 311 | | Introductory Biochemistry^ | | | |
| CMB 333 | | Immunology and Serology^ | | | |
| MIC 201/211 | | Introductory Medical Microbiology/Intro Micro^ | | | |
| MTH 131 | A1, B3 | Calculus^ | | | |
| STA 220 | B3 | Statistics in Modern Society | | | |
| STA 308 | | Introductory Statistics^ | | | |
| PHY 111/185 | A1, B3 | Physics I | | | |

*Suggested courses for each focus area

^Recommended courses for students interested in Graduate School, dependent upon area of interest

**THE UNIVERSITY OF RHODE ISLAND**

Effective Fall 2018

**Animal & Veterinary Science - BS**
**Option: Pre-veterinary**
**EL_ANSC_BS 120 Earned credits Total**

**Student:** _____
**Student ID:** _____
**Advisor:** _____

**Step 1:REVIEW YOUR PROGRAM REQUIREMENTS**

**1. Basic Non-Science Requirements (9 credits)**

| | Course | Semester | Grade | Credit |
|---|---|---|---|---|
| Com Fundamentals (B2) | COM 100 | | | 3 |
| Wrt to Inform & Explain (B1, B4) or Intro to Research Wrt ( B1, B4) | WRT 104 or 106 | | | 3 |
| Technical Writing (B1, B2) or Science Writing (B1, B2) | WRT 332 or 334 | | | 3 |

**2. Basic Science Requirements (50 credits)**

| | | | | |
|---|---|---|---|---|
| Principles of Biology I (A1) | BIO 101 | | | 3 |
| Principles of Biology I Lab (A1) | BIO 103 | | | 1 |
| Principles of Biology II (A1) | BIO 102 | | | 3 |
| Principles of Biology II Lab (A1) | BIO 104 | | | 1 |
| General Genetics | BIO 352 | | | 4 |
| General Chemistry Lecture I (A1) | CHM 101 | | | 3 |
| Laboratory for Chemistry 101 (A1) | CHM 102 | | | 1 |
| General Chemistry Lecture II (A1) | CHM 112 | | | 3 |
| Laboratory for Chemistry 112 (A1) | CHM 114 | | | 1 |
| Organic Chemistry Laboratory | CHM 226 | | | 2 |
| Organic Chemistry I | CHM 227 | | | 3 |
| Organic Chemistry II | CHM 228 | | | 3 |
| Introductory Microbiology | CMB 211 | | | 4 |
| Introductory Biochemistry | CMB 311 | | | 3 |
| Calculus (A1, B3) | MTH 131 | | | 3 |
| Physics I (A1, B3) | PHY 111 | | | 3 |
| Physics I Lab (A1, B3) | PHY 185 | | | 1 |
| Physics II (A1, B3) | PHY 112 | | | 3 |
| Physics II Lab (A1, B3) | PHY 186 | | | 1 |
| Introductory Statistics | STA 308 | | | 4 |

**3. Introductory Professional Course Requirement (5 credits)**

| | | | | |
|---|---|---|---|---|
| Introduction to Animal Science (A1) | AVS 101 | | | 3 |
| Intro. Animal Science Laboratory | AVS 102 | | | 1 |
| Freshman Seminar AVS | AVS 110 | | | 1 |

Total credits _____

Approved for Graduation
Advisor_____Date: _____

**4. Concentration Course Requirements (22 credits)***

| | Course | Semester | Grade | Credit |
|---|---|---|---|---|
| Anatomy & Physiology | AVS 331 | | | 3 |
| Anatomy & Physiology Lab | AVS 333 | | | 1 |
| Animal Diseases | AVS 332 | | | 3 |
| Animal Nutrition | AVS 412 | | | 3 |
| Physiology of Reproduction | AVS 472 | | | 3 |
| Cell Biology | BIO 341 | | | 3 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

*AVS GPA (minimum 2.0 required)

Maximum 3 credits AVS 491/492

**5. Supporting Elective Requirements (11 credits)****

| | Course | Semester | Grade | Credit |
|---|---|---|---|---|
| Animal Management Techniques | AVS 104 | | | 2 |
| BUS or ECN | | | | 3 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

^Maximum 9 cr of AVS 399, 491, 492 can be counted towards degree

**6. Free Electives (2 cr)**

| | | | | |
|---|---|---|---|---|
| Planning for Academic Success | URI 101 | | | 1 |
| | | | | |
| | | | | |
| | | | | |

**7. GenEd courses and Free Electives (max 21 cr)**

Courses in this section will be courses fulfilling GenEd outcomes that do not appear in sections 1-5 of this option sheet. Careful selection of these courses will leave space for additional courses in your major or minor area of interest.

| | | | | |
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# THE UNIVERSITY OF RHODE ISLAND

**Animal & Veterinary Science - BS**
**120 Credits Total**
**Option: Pre-Veterinary**

**Student:** _____
**Student ID:** _____
**Advisor:** _____

## General Education Guidelines:

General education is 40 credits. Each of the twelve outcomes (A1-D1) must be met by at least 3 credits. A single course may meet more than one outcome, but cannot be double counted towards the 40 credit total. At least one course must be a Grand Challenge (G). No more than twelve credits can have the same course code. General education courses may also be used to meet requirements of the major or minor when appropriate.

**Step 2: LIST COURSES THAT MEET GEN ED**

| General Education Credit Count | | | | | | |
|---|---|---|---|---|---|---|
| **At least** 40 credits, no more than 12 credits with the same course code | | | | | | |
| **Course** | **Outcome** | **Credit** | | **Course** | **Outcome** | **Credit** |
| AVS 101* | A1 | 3 | | 104* or | B1, B4 | 3 |
| BIO 101* | A1 | 3 | | 332* or | B1, B2 | 3 |
| BIO 102* | A1 | 3 | | | | |
| BIO 103* | A1 | 1 | | | | |
| BIO 104* | A1 | 1 | | | | |
| COM 100* | B2 | 3 | | | | |
| CHM 101* or 103* | A1 | 3 | | | | |
| or 105* | A1 | 1 | | | | |
| PHY 111* | A1, B3 | 3 | | | | |
| PHY 112* | A1, B3 | 3 | | | | |
| PHY 185* | A1, B3 | 1 | | | | |
| PHY 186* | A1, B3 | 1 | | | Total Gen Ed credits | 40 |
| MTH 131* | A1, B3 | 3 | | | | |

**NOTE: BECAUSE MOST COURSES MEET MORE THAN ONE OUTCOME, YOUR OUTCOME AUDIT MIGHT BE COMPLETED BEFORE YOU REACH YOUR 40 CREDITS. HOWEVER, YOU MUST STILL COMPLETE 40 CREDITS OF GENERAL EDUCATION**

**Advising Notes:**

**Step 3: LIST COURSE AS EACH OUTCOME IS MET**

| General Education Outcome Audit | |
|---|---|
| | **Course** |
| **KNOWLEDGE** | |
| **A1.** STEM | AVS 101 |
| **A2.** Social & Behavioral Sciences | |
| **A3.** Humanities | |
| **A4.** Arts & Design | |
| **COMPETENCIES** | |
| **B1.** Write effectively | WRT 104 OR 106 |
| **B2.** Communicate effectively | COM 100 |
| **B3.** Mathematical, statistical, or computational strategics | MTH 131 |
| **B4.** Information literacy | WRT 104 OR 106 |
| **RESPONSIBILITIES** | |
| **C1.** Civic knowledge & responsibilities | |
| **C2.** Global responsibilities | |
| **C3.** Diversity & Inclusion | |
| **INTEGRATE & APPLY** | |
| **D1.** Ability to synthesize | |
| **GRAND CHALLENGE** | |
| **G.** Check that at least one course of your 40 credits is an approved "G" course | |
| **NOTE: COURSES MARKED WITH A * CAN BE USED TO SATISFY MAJOR AND GENERAL EDUCATION** | |

**Effective Fall 2018**

**B.S. Animal & Veterinary Science- Pre-Vet Option- Effective Fall 2018**
**Sample 4 Year Plan**
*College of the Environment and Life Sciences*

**Freshman Year Fall Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| AVS 101,102 | Introduction to Animal Science, Lab | 4 | |
| BIO 101,103 | Principles of Biology I, Lab | 4 | |
| MTH 131 | Calculus | 3 | |
| COM 100 | COM Fundamentals | 3 | |
| URI 101 | Planning for Academic Success | 1 | |
| | | | |
| | | **15** | |

**Freshman Year Spring Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| AVS 110 | AVS Freshman Seminar | 1 | |
| BIO 102,104 | Principles of Biology II, Lab | 4 | |
| CHM 101, 102 | General Chemistry and Lab | 4 | |
| WRT 104 OR 106 | Writing Gen Ed (B4) | 3 | |
| | Concentration or Supporting Elective | 3 | |
| | | | |
| | | **15** | |

**Year 1 Milestones**: Earn 30 credits and a GPA of 2.0 or higher. Meet with your Advisor for ANSC option discussion.

**Sophomore Year Fall Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| AVS 331/333 | Anatomy and Physiology Lecture & Lab | 4 | |
| CHM 112, 114 | General Chemistry II and Lab | 4 | |
| PHY 111, 185 | Physics I and Lab | 4 | |
| | General Education Course | 3 | |
| | | | |
| | | **15** | |

**Sophomore Year Spring Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| AVS 332 | Animal Diseases | 3 | |
| PHY 112, 186 | Physics II and Lab | 4 | |
| WRT 332 or 334 | WRT course | 3 | |
| STA 308 | Introductory Statistics | 4 | |
| | General Education Course | 3 | |
| | | **17** | |

**Year 2 Milestones:** Earn 60 credits and a GPA of 2.0 or higher. Meet with your Advisor to dicuss major and experential learning opportunities.

**Junior Year Fall Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| | Concentration or Supporting Elective | 6 | |
| CMB 211 | Introductory Microbiology | 4 | |
| CHM 227 | Organic Chemistry 1 | 3 | |
| BUS or ECN | | 3 | |
| | | | |
| | | | |
| | | **16** | |

**Junior Year Spring Semester**

| Course Code | Description | | |
|---|---|---|---|
| | Concentration or Supporting Elective | 3-6 | |
| BIO 352 | General Genetics | 4 | |
| CHM 228,226 | Organic Chemistry 2, Lab | 4 | |
| | General Education Course | 3 | |
| | | | |
| | | | |
| | | **14-17** | |

**Year 3 Milestones**: Earn 90 credits and a GPA of 2.0 or higher. Meet with your Advisor to prepare intent to graduate application for fall submission.

**Senior Year Fall Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| AVS 412 | Animal Nutrition | 3 | |
| BIO 341 | Cell Biology | 3 | |
| | Concentration or Supporting Electives | 6 | |
| | General Education or Free Electives | 3 | |
| | | | |
| | | | |
| | | **15** | |

**Senior Year Spring Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| AVS 472 | Physiology of Reproduction | 3 | |
| CMB 311 | Introductory Biochemistry | 3 | |
| | Concentration or Supporting Electives | 6 | |
| | General Education or Free Electives | 3 | |
| | | | |
| | | | |
| | | **15** | |

**Year 4 Milestones**: Earn 120 credits and a GPA of 2.0 or higher in CUM and CON. Complete all remaining required courses.

**Total Credits to Graduate =** 120

Effective Fall 2018

**From:** **Jeremiah Dyehouse** jdyehouse@uri.edu
**Subject:** Re: Request for permission to list WRT courses as required in AVS curriculum
**Date:** March 6, 2018 at 4:48 PM
**To:** Petersson Katherine kpetersson@uri.edu

DJ

Sounds good. I will continue to work on getting more 332 and 334 courses on the books!

Jeremiah

On Tue, Mar 6, 2018 at 4:13 PM, Petersson Katherine <kpetersson@uri.edu> wrote:

> Hi Jeremiah,
> Thanks for taking the time to discuss a way to accommodate our desire to increase the number of writing courses required of AVS students.
>
> As per our conversation, we will continue to require WRT 104 or 106 and 332 or 334 for AVS students in the Pre-veterinary option. For students in our new consolidated Animal Science option, we will require WRT 104 or 106 and an additional 3 credit WRT course at the 300 level or above.
>
> I would appreciate it if you would email me back granting permission for these requirements to go into effect.
>
> Regards,
> Katherine
>
> khp
>
> _____
> Katherine Petersson, Associate Professor
> Coordinator, Sustainable Agriculture and Food System Specialization of the Biological and Environmental Sciences Graduate Program
> http://web.uri.edu/cels-gradprograms/sustainable-agriculture-and-food-systems
> Dept. Fisheries, Animal & Veterinary Science
> University of Rhode Island
> 120 Flagg Road, 177 CBLS, Kingston, RI 02881
> Work ph: 401-874-2951 | Fax ph: 401-874-7575 | E-mail: kpetersson@uri.edu
>
> On Mar 4, 2018, at 5:11 PM, Jeremiah Dyehouse <jdyehouse@uri.edu> wrote:
>
> Hi Katherine--
>
> Over here in WRT, we love AVS students! I'm also happy to hear that your group wants to require more writing instruction through WRT.

Unfortunately, and as much as I want it to be otherwise, my department does not have the capacity to support the requirement you are considering. For years, we have been asking for a technical writing specialist, and we are also unfortunately limited in our ability to offer more science writing courses.

Perhaps we could talk on the phone about possible alternatives and workarounds? I'd like that.

Thanks--

Jeremiah

On Fri, Mar 2, 2018 at 9:12 AM, Petersson Katherine <kpetersson@uri.edu> wrote:

> Good morning Dr. Dyehouse,
>
> We are in the process of revising our curriculum for our Animal & Veterinary Science students (currently 308 students enrolled). We currently have three options for our students and are proposing that we consolidate two of those options into one. Historically all of our students have taken WRT 104 and our pre-vet students have taken WRT 104 as well as WRT 332. We would now like to require two writing classes for all of our students. We hope for these changes to go into effect Fall 18. I am contacting you to request permission to require the following of all of our students - WRT 104 or 106 and WRT 332 or 334. The impact would mostly be felt in WRT 332 and 334 as all of our students, to date, are already required to take either 104 or 106. Can your department (these courses) support this requirement?
>
> Regards,
> Katherine
>
> khp
>
> _____
> Katherine Petersson, Associate Professor
> Coordinator, Sustainable Agriculture and Food System Specialization of the Biological and Environmental Sciences Graduate Program
> http://web.uri.edu/cels-gradprograms/sustainable-agriculture-and-food-systems
> Dept. Fisheries, Animal & Veterinary Science
> University of Rhode Island
> 120 Flagg Road, 177 CBLS, Kingston, RI 02881
> Work ph: 401-874-2951 | Fax ph: 401-874-7575 | E-mail: kpetersson@uri.edu

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Jeremiah Dyehouse
Associate Professor and Chair, Department of Writing and Rhetoric
Harrington School of Communication and Media
University of Rhode Island
email: jdyehouse@uri.edu

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Jeremiah Dyehouse
Associate Professor and Chair, Department of Writing and Rhetoric
Harrington School of Communication and Media
University of Rhode Island
email: jdyehouse@uri.edu

**From:** **Kevin Mcclure** krmcclure@uri.edu
**Subject:** Re: Request for permission to list COM 100 course as required in AVS curriculum
**Date:** March 2, 2018 at 10:15 AM
**To:** Petersson Katherine kpetersson@uri.edu

MK

Hi Katherine: We can most definitely support this; we offer as many as 3200-3600 seats a year in Com 100.

Best,
Kevin

On Fri, Mar 2, 2018 at 9:16 AM, Petersson Katherine <kpetersson@uri.edu> wrote:

> Good morning Dr. McClure,
>
> We are in the process of revising our curriculum for our Animal & Veterinary Science students (currently 308 students enrolled). We currently have three options for our students and are proposing that we consolidate two of those options into one. We hope for these changes to go into effect Fall 18. Historically all of our students have taken COM 100. I am contacting you to request permission for us to continue require that all of our students take COM 100. Can your department (this course) support this requirement?
>
> Regards,
> Katherine
>
> khp
>
> _____
> Katherine Petersson, Associate Professor
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THE
UNIVERSITY
OF RHODE ISLAND

Appendix L

Revised 8/2016

## Notice of Change form

**Notice of Change for:** **AQUACULTURE AND FISHERIES SCIENCE BS**

**Date:** **3/2/2018**

## A. PROGRAM INFORMATION

1. **Name of institution**
   University of Rhode Island

2. **Name of department, division, school or college**

   Department: Fisheries, Animal and Veterinary Science (FAVS)
   College: Environment and Life Sciences (CELS)

3. **Intended initiation date of program change. Include anticipated date for granting first degrees or certificates, if appropriate.**

   Initiation date: September 2018
   First degree date: May 2022

4. **Intended location of the program** University of Rhode Island, Kingston Campus

5. **Summary description of proposed program (not to exceed 2 pages).**

See below

6. **If applicable, please include the existing URI catalog language and proposed catalog changes indicated in Track Changes.**

See below

7. **Signature of the President**

_____
David M. Dooley

**Notice of Change for:** **AQUACULTURE AND FISHERIES TECHNOLOGY BS**

**Date:** **12/14/2017**

**5. Summary description of proposed program (not to exceed 2 pages).**

Changes requested: Change the number of credits required to graduate from 130 to 120 (see below for a breakdown of credits required in each category).

Rationale:

The proposed program is a revision of the Aquaculture and Fisheries Science (previously known as Aquaculture and Fishery Technology, name change approved by CAC on 2/26/18) undergraduate major. This update to the program is needed to:

1) Provide a better fit with the current status and future directions of the field;
2) Accommodate for changes in personnel in FAVS due to retirements and new hires;
3) Better serve the demographics and needs of our students;
4) Accommodate for changes in the General Education program;
4) Facilitate a decrease in time to graduation by providing more flexibility in the curriculum while maintaining rigor; and
5) Facilitate students' ability to graduate with minors and double majors by better alignment with relevant programs.

The revised program:

a) Provides students with a strong foundation in the basic sciences and the specialized knowledge and skills needed to succeed in both professional and academic careers in Aquaculture and Fisheries. This includes an understanding of the importance of physical (geology, hydrology, oceanography), natural (from molecules to ecosystems), and social (cultural, economic, policy, diversity, equity) factors.
b) Illustrates the experiential learning focus of the program (see curriculum map highlighting all the courses that include laboratories, plus the requirement for at least 3 credits of internship or independent project).
c) Fulfills all the requirements needed for the Professional Certification by the American Fisheries Society (see supporting materials and https://fisheries.org/membership/afs-certification/)
d) Seamlessly integrates with a newly proposed Graduate Certificate in Aquaculture and Fisheries at the University of Rhode Island (proposal to be submitted soon).

See next page for changes in credit distribution (breakdown of credits)

Breakdown of credits required in each category and how the compare to the previous program (changes in red)

| | Aquaculture & Fisheries Technology | Aquaculture & Fisheries Science |
|---|---|---|
| General Education | 40 cr. | 40 cr. |
| Basic Sciences | 28 – 32 cr.<br><br>BIO101/103, BIO102/104, CHM 103/105 or CHM101/102, CHM112/114 or CHM124/126, MTH111 or MTH131 and an additional 9-12 cr. from approved list. | 24 – 27 cr.<br><br>BIO101/103, BIO102/104, CHM 103/105 or CHM101/102, CHM112/114, ~~CHM124/126~~, MTH103, MTH111, MTH131 or MTH 141, and an additional 9-12 cr to choose from particular categories – one course in physical sciences, one course in ecology/ecosystem science, one course in computational sciences or statistics. |
| Intro to Professional | 10 cr.<br>AFS105G/106, EEC105, NRS100 | 10 cr.<br>Pre-professional courses (AFS105G/106, EEC105, NRS100) |
| Concentration (includes experiential learning) | 24 cr. 300 or above from approved list<br>Minimum of 18 from AFS | Minimum of 20 cr. 300 or above from approved course codes (AFS, BIO, NRS, OCG, MAF)<br>With a Minimum of 12 from AFS<br><br>plus<br>Minimum of 3 and maximum of 12 from AFS391/392, AFS491/492 |
| Supporting Electives | 30 – 36<br>from approved list<br>Including 2 Foundational courses (AFS201, AFS202) | Minimum of 25 from suggested course codes; including the 2 required foundational courses (AFS201, AFS202) listed under Professional Concentration in the curriculum sheet |
| Total | 130 | 120 |

**6. If applicable, please include the existing URI catalog language and proposed catalog changes indicated in Track Changes.**

*Note: Since the changes are substantial, a clean version is included here. A version with track changes is also attached to the proposal.*

## Catalog Description – Aquaculture and Fisheries Science BS

Aquaculture and Fisheries play an essential role in the sustainability and health of our planet by providing food and other services. This major prepares students for professional, technical, academic, or research careers focused on the safe and sustainable production of products and services from aquatic (marine and freshwater) environments. Core values include an emphasis on the intrinsic value of sustainable food production in the context of other ecosystem processes, heterogeneous scales of production (from small farms and fishers that sell directly to consumers to large scale producers), and preserving local cultures and biodiversity while understanding future demands.

The major requires ten credits in introductory professional courses including AFS 105G/106, EEC 105, and NRS 100; and a minimum of 24 credits in basic sciences including BIO 101/103, BIO 102/104, one course in mathematics (MTH103, MTH111, MTH131 or MTH141), one course in the physical sciences (OCG, PHY, GEO), one course in ecology or ecosystem science, and one course in computational sciences or statistics. In addition, the major requires a minimum of 20 credits in concentration courses at the 300 level or above, and 12 credits of the concentration courses must be selected from courses offered by AFS. The additional credits of the concentration may be selected from courses offered in BIO, EEC, MAF, NRS, and OCG. The major also requires a minimum of 3 credits in an internship or a special project. Finally, the program requires a minimum of 25 credits of supporting electives selected from courses in AFS, APG, AVS, BIO, EEC, GEO, MAF, NRS, OCG, and SAF. A total of 120 credits is required for graduation.

**Supporting materials (AFS notice of change – curricular changes)**

Catalog changes with tracked changes
AFS Revised Curriculum (advising) sheet
AFS Revised Milestones
AFS Curriculum Map
How the AFS program fulfills requirements from American Fisheries Society for professional certification at the Associate level
Support from APG and GSO on using APG and OCG courses as supporting electives

Catalog description

Aquaculture and Fisheriesy ~~Technology~~ Science

Aquaculture and Fisheries play an essential role in the sustainability and health of our planet by providing food and other services. This major prepares students for professional, technical, academic, or research careers focused on the safe and sustainable production of products and services from aquatic (marine and freshwater) environments. Core values include an emphasis on the intrinsic value of sustainable food production in the context of other ecosystem processes, heterogeneous scales of production (from small farms and fishers that sell directly to consumers to large scale producers), and preserving local cultures and biodiversity while understanding future demands. ~~for professional or technical careers in aquaculture or fisheries-oriented occupations. It is sufficiently broad to allow for specialization in either fisheries or aquaculture science and technology. Students who demonstrate superior ability in the basic sciences and wish to continue their professional training can select a course curriculum that will both prepare them for graduate school and provide a broad overview in fisheries and aquaculture science and technology.~~

The major requires ~~a minimum of~~ ten credits in introductory professional courses including ~~NRS 100,~~ AFS 105G/106, EEC 105, and NRS 100; and a minimum of 24 credits in basic sciences including BIO 101/103, BIO 102/104, one course in mathematics (MTH103, MTH111, MTH131 or MTH141), ~~CHM 101/102, CHM 112/114 or CHM 124/126, MTH~~ one course in the physical sciences, one course in ecology or ecosystem science~~111 or MTH 131;~~ , and one course in computational sciences or statistics~~and nine to twelve additional credits in basic science selected from an approved course list in the departments of BIO, CHM, CSC, STA, MTH and PHY~~. In addition, the major requires a minimum 20~~4~~ credits in concentration courses at the 300 level or above, and ~~18~~ 12 credits of the concentration ~~courses~~ must be selected from courses offered by AFS. A minimum of 3 of the concentration credits should be from an internship or a special project. The additional ~~six~~ credits of the concentration may be selected from courses offered in BIO, EEC, MAF, NRS, and OCG~~BIO, AFS, AVS, NRS, MAF, EEC; and by the Graduate School of Oceanography~~. The major also requires a minimum of 3 credits in an internship or a special project. Finally, the program requires a minimum of 25 ~~30-36~~ credits of supporting electives selected from an approved list of courses in ~~the departments of~~ AFS, APG, AVS, BIO, EEC, GEO, MAF, NRS, OCG, and SAF ~~BIO, AFS, AVS, MAF, EEC, NRS; and the Graduate School of Oceanography~~. A total of 120~~30~~ credits is required for graduation.

**Student:** **ID No.:** **Advisor:**

## I. GENERAL EDUCATION *(min 40 cr)* — 0

| | Course No. | Grade |
|---|---|---|
| **Knowledge** | | |
| A1. STEM | BIO 101/102* | |
| A2. Social and Behavioral Sciences | EEC 105* | |
| A3. Humanities | | |
| A4. Arts and Design | | |
| **Competencies** | | |
| B1. Write effectively | | |
| B2. Communicate effectively | | |
| B3. Mathematical, statistical, computation | MTH1__ | |
| B4. Information literacy | | |
| **Responsibilities** | | |
| C1. Civic knowledge & responsibilitiy | | |
| C2. Global responsibilities | | |
| C3. Diversity and inclusion | | |
| **Integrate & Apply** | | |
| D1. Ability to Synthesize | AFS 300 | |
| **Grand Challenge** | | |
| G. Grand Challenge Course | AFS 105G | |
| Additional General Education | | |
| Additional General Education | | |
| Additional General Education | | |
| Additional General Education | | |

## II. PRE-PROFESSIONAL & BASIC SCIENCES — Cr. 0

*(min 28 credits required)*

| | | |
|---|---|---|
| *A. Biology (8 cr)* | | |
| Principles of Biology I* (3,1; F,S) | BIO101/103 | |
| Principles of Biology II (3,1; F,S) | BIO102/104 | |
| *B. Chemistry (4 cr)* | | |
| CHM 101/102 or 103/105 (3,1; F,S) | CHM | |
| *C. Intro Aquaculture & Fisheries (10 cr)* | | |
| Foods from the Sea (3,1; F) | AFS105G/106 | |
| Intro to Resource Econ (3; F,S)* | EEC105 | |
| Natural Resource Conserv (3; F,S) | NRS100 | |
| *D. Additional Basic Sciences** (min 12 cr)* | | |
| Precalculus or Calculus (MTH103/111/131, 3) | | |
| Additional Basic Sci (Physical Sciences) | | |
| Additional Basic Sci (Ecology/Ecosystem) | | |
| Additional Basic Sci (Computational/Stats) | | |

**Course Credits Required:** 120
**Course Credits Completed:** 0

***Approved for Graduation:***

Advisor: _____ Date: _____

## III. PROFESSIONAL CONCENTRATION *(min 30 cr total)* — 0

| *Course Description:* | Course No. | Grade | Cr. | Off: |
|---|---|---|---|---|
| **Foundational Courses** *(10 cr that count as supporting electives)* | | | | |
| Shellfish Aquaculture | AFS 201 (3,1) | | | *F* |
| Finfish Aquaculture | AFS 202 (2,1) | | | *S* |
| Fisheries Science | AFS 215 (2,1) | | | *S* |
| **Concentration Courses** *(min 20 cr; 12 from AFS)* | | | 0 | |
| ***Suggested Courses for Aquaculture Focus (choose from):*** | | | | |
| Crustacean Aquaculture | AFS 362 (3) | | | *Alt.S(e)* |
| Marine Finfish Aquaculture | AFS 432 (3) | | | *Alt.S(o)* |
| Salmonid Aquaculture | AFS 486 (3) | | | *F* |
| Topics in Molluscan Aquaculture | AFS 581 (3) | | | *Alt.F(o)* |
| Advanced Aquaculture Systems | AFS 584 (3) | | | *AltS(e)* |
| ***Suggested Courses for Fisheries Focus (choose from):*** | | | | |
| World Fishing Methods and Lab (3,1) | AFS 321/322 | | | *F* |
| Fisheries Ecology and Laboratory (3,1) | AFS 415/416 | | | *Alt.F(e)* |
| Fisheries Stock Management (3) | AFS 531 | | | *Alt.S(e)* |
| Ecosystem Based Fisheries Sci. & Mngt | AFS 560 (3) | | | *Alt.S(o)* |
| ***Common courses (choose from):*** | | | | |
| Aquaculture Health Management | AFS 300 (3,1) | | | *F* |
| Aquaculture and the Environment | AFS 425 (3) | | | *Alt.F(e)* |
| Aqua. Food Production, Philippines | AFS 440 (3) | | | *J-term* |
| General Oceanography and/or | OCG 301 (3) | | | *F* |
| Marine Biology | BIO 360 (3,1) | | | *F,S* |
| Fish Physiology | AFS 486 (3) | | | *F* |
| Additional Concentration Course*** | | | | |

## IV. INTERNSHIPS/INDEPENDENT PROJECTS *(min 3, <12)* — 0

| | | | |
|---|---|---|---|
| Special Project/Independent Study | AFS 391/2 (1-3) | | *F,S,Sm* |
| Special Project/Independent Study | AFS 391/2 (1-3) | | *F,S,Sm* |
| Special Project/Independent Study | AFS 491/2 (1-3) | | *F,S,Sm* |
| Special Project/Independent Study | AFS 491/2 (1-3) | | *F,S,Sm* |

## V. SUPPORTING***(*min 15*) AND OTHER ELECTIVES — 0

| | | | |
|---|---|---|---|
| **Skills and Tools** *(up to 9 cr)* | | | |
| Small Boats: Equipment & Operation | AFS 290 (3) | | *F,S* |
| Basic Scuba Diving | AFS 270 (3) | | *F,S* |
| Research Diving Methods | AFS 433 (3) | | *F,S* |
| **Additional supporting and other electives** | | | |
| _____ | _____ | | |
| _____ | _____ | | |
| _____ | _____ | | |
| _____ | _____ | | |
| _____ | _____ | | |
| | URI101 (1) | | |

* Some courses may count for more than one category. If so, do not double count credits in the total count.

** **Suggested Basic Science (check General Education catalog)**
*Math:* Calculus (MTH131) is required for a fisheries focus; otherwise, either MTH103 or MTH111 fulfill the requirement; *Chem*: At least 2 sem. of Chem are needed if you plan to go to grad school (e.g. add CHM124/126). *Physical Sci*: any basic course in Geology (GEO), Oceanography (OCG), Physics (PHY); *Ecology/Ecosystem Science*: e.g. BIO262, NRS212, NRS223, NRS234G; *Computer Sci and Statistics*: any course in CSC or STA (100, 200, 300 level; e.g. STA220 or STA308).

*** **Suggested Additional Concentration:** 300 or above courses in AFS, Marine Bio (BIO), Oceanography (OCG), Ecology/Ecosystem (NRS), Marine Affairs(MAF), Economics(EEC). **Suggested Supporting Electives**: courses 200 or above in Economics (EEC, ECN), Business (BUS), MAF, Anthropology(APG), Marine Bio(BIO), GEO, NRS, OCG, Animal and Veterinary Sciences (AVS), Sustainable Agriculture & Food Systems (SAF)

# EXAMPLE

## B.S. Aquaculture and Fisheries Science- Effective Fall 2018

## Sample 4 Year Plan

***College of the Environment and Life Sciences***

**Freshman Year *Fall* Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| *AFS 105G/106 | Food from the Sea Lec/ Lab | 4 | |
| *BIO 101/103 | Principles of Biology I/ Lab | 4 | |
| *MTH _____ | Precalculus or Applied Calculus I | 3 | |
| *EEC 105 | Introduction to Resource Economics | 3 | |
| | *General Education | 3 | |
| URI 101 | Planning for Academic Success | 1 | |
| * Counting for General Education | | **15** | **0** |

**Freshman Year *Spring* Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| AFS 202 | Finfish Aquaculture | 3 | |
| *BIO 102/104 | Principles of Biology II/ Lab | 4 | |
| *OCG/*GEO | *Basic Science (Physical Sci) | 3 | |
| | *General Education (e.g. AFS132G) | 3 | |
| | *General Education | 3 | |
| | | | |
| * From General Education Course Offerings | | **16** | **0** |

**Year 1 Milestones**:Earn at least 30 credits and a GPA of 2.0 or higher. Meet with your Advisor for AFTC option discussion.

**Sophomore Year *Fall* Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| AFS 201 | Shellfish Aquaculture | 3 | |
| *NRS 100 | Natural Resource Conservation | 3 | |
| *CHM 103/105 | Introduction Chemistry Lecture/Lab | 4 | |
| | Supporting Elective (e.g. skills) | 3 | |
| | *General Education | 3 | |
| | | **16** | **0** |

**Sophomore Year *Spring* Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| | Concentration Course | 3 | |
| | Concentration Course | 3 | |
| e.g. BIO 262 | Basic Science (Ecology/Ecosystem) | 4 | |
| | Supporting Elective (skills) | 3 | |
| | *General Education | 3 | |
| | | **16** | **0** |

**Year 2 Milestones:** Earn at least 64 credits and a GPA of 2.0 or higher. Meet with your Advisor to dicuss major, internships and research opprtunities.

**Junior Year *Fall* Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| | Concentration Course | 3 | |
| | Concentration Course | 3 | |
| | Supporting Elective | 3 | |
| | Basic Science (Computer Sci/Stats) | 3 | |
| | *General Education | 3 | |
| | | **15** | **0** |

**Junior Year *Spring* Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| | Concentration Course | 3 | |
| | Concentration Course | 3 | |
| | Supporting Elective | 3 | |
| | **Special Projects or Internship | 3 | |
| | *General Education or Elective | 3 | |
| ** could be done in the Summer | | **15** | **0** |

**Year 3 Milestones**: Earn at least 85 credits and a GPA of 2.0 or higher. Meet with your Advisor to prepare intent to graduate application for fall submission.

**Senior Year *Fall* Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| | Concentration Course | 3 | |
| | Concentration Course | 3 | |
| | Supporting Elective | 3 | |
| | Basic Science | 3 | |
| | *General Education or Elective | 3 | |
| | | **15** | **0** |

**Senior Year *Spring* Semester**

| Course Code | Description | Cr | |
|---|---|---|---|
| | Concentration Course | 3 | |
| | Supporting Elective | 3 | |
| | Supporting Elective | 3 | |
| | *General Education | 3 | |
| | Elective | 3 | |
| | | **15** | **0** |

**Year 4 Milestones**: Earn 120 credits and a GPA of 2.0 or higher in CUM and CON. Complete all remaining required courses.

**Total Credits to Graduate =** **120**

Effective Fall 2018

| | Aquaculture and Fisheries Science<br><br>Program Student Learning Outcomes (2018 version): | AFS105G (A1) | AFS106 (lab) | AFS132G (A2) (s. elective) | EEC105 (A2) | NRS100 (A1) | BASIC SCIENCES (BIO, CHM, MTH, Phys, Ecol, Stats-Comp) | AFS201 (lec, lab) | AFS202 (lec, lab) | APG, MAF, EEC Supp elec | AFS270, 290 (lec, lab) | AFS300 (lec, lab) | AFS321 (lec, lab) | AFS362, 432, 483 | AFS415 (lec) | AFS416 (lab) | AFS425, 426, 440 | AFS433 (lec, lab) | AFS486,500,531,581,584,586 | INTERNSHIPS/IND. PROJ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #1 | Describe the knowledge necessary for professional or academic work in the field of aquaculture and fisheries. This includes knowledge in the areas of ecology, oceanography, biology, physiology, pathology, nutrition, and genetics. | I | | | | I | R | R | R | | | R | R | R | E | | E | | E | E |
| #2 | Evaluate the importance of diversity, equity and justice, as well as the role of social factors (e.g. culture, economics, policy) on aquaculture and fisheries from local to global scales. | I | I | I | I | | | | | R | | | R | | | | R | | | E |
| #3 | Demonstrate the basic technical skills necessary for work in aquaculture and fisheries (e.g. boats, diving, plumbing, system design, scientific method, data collection and analysis). | | I | | | | R | R | R | | R | R | R | | | E | | E | E | E |
| #4 | Create local and global solutions to complex challenges in aquaculture and fisheries. | I | | I | | | | I | I | | | R | | R | E | | E | | E | E |

| bject Area (American Fisheries Society requirements for certificati | Course Number, Course Title (AFS program URI) |
|---|---|
| **A. Fisheries and Aquatic Sciences.** Four (4) courses,<br>Two of which must be directly related to fisheries sciences<br>and at least one must cover p**rinciples of fisheries science and manag** | **AFS105/106G Food from the Sea (4)**<br>AFS 201 Finfish Aquaculture<br>AFS 202 Shellfish Aquaculture<br>**AFS 215 Fisheries Science**<br>*AFS 290 - Small Boats*<br>*AFS 270 - Basic Scuba Diving*<br>AFS 300 Diseases of Aquatic Organisms<br>AFS 321/322 World Fishing Methods<br>AFS 362 Crustacean Aquaculture<br>*AFS 391/392, 491/492 Special Projects or Internship*<br>**AFS 415/416 Fisheries Ecology (Lecture and Lab)**<br>*AFS 433 Research Diving*<br>AFS 425 Aquaculture and the Environment<br>AFS 426 Ecological Aquaculture<br>AFS 432 Marine Finfish Aquaculture<br>AFS 440 Aquatic Food Production in the Philippines<br>AFS 483 Salmonid Aquaculture<br>AFS 486 Fish Physiology<br>**AFS 560 Ecosystem Based Fisheries Science and Management**<br>AFS 581 Current Topics in Molluscan Aquaculture<br>AFS 584 Advanced Aquaculture Systems<br>AFS 586 Fish Nutrition |
| **B. Other Biological Sciences courses,**<br>which when added to the above courses must total 30 semester hours. | BIO101/103 Introduction to Biology I and Lab (4)<br>BIO102/104 Introduction to Biology II and lab (4)<br>Basic Science Requirement (Ecosystem Science/Ecology) |
| **C. Physical Sciences courses.** Must total 15 semester hours. | CHM103/105 (4)<br>Basic Science Requirement (Physical Sciences)<br>Supporting electives in GEO, OCG |
| **D. Mathematics and Statistics courses,**<br>which must include one calculus and one statistic or two statistics<br>Must total 6 semester hours. | MTH103, 111, 131 or 141 (Precalculus or Calculus)<br>STA 220 and STA308 (3) or STA409 (3) (Computational/Statistical Basic Science) |
| **E. Communications courses.** Must total 9 semester hours. | Choose 3 (9 credits) from General Education list<br>fulfilling B1 and B2 outcomes (communication and writing) |
| **F. Human Dimensions courses**. Must total 6 semester hours | EEC105 Intro to Resource Economics (3)<br>One more APG, MAF or EEC course (suggested from Gened list, counting as supporting electives) |

**From:** **Dunsworth** holly_dunsworth@uri.edu
**Subject:** Re: Permission to use APG courses as supporting electives
**Date:** February 16, 2018 at 12:19 PM
**To:** Marta Gomez-Chiarri gomezchi@uri.edu

D

Dear Marta,
This is a very easy question to answer quickly and with enthusiasm: YES!
We are honored to be included in your plan, and will welcome your students.
Very best to you,
Holly

Dr. H. Dunsworth
Associate Professor of Anthropology
Chair, Dept of Sociology and Anthropology
Chafee 508 | 401.874.7297
Walk-in Office Hours: Wednesdays 2:30-4:30

On Fri, Feb 16, 2018 at 12:17 PM, Marta Gomez-Chiarri <gomezchi@uri.edu> wrote:

> Hi Holly,
>
> We are in the process of revising our AFS major (Aquaculture and Fisheries Technology), and we would like to consider any course in APG at the 200 or above level to be considered as a supporting elective. We think that students benefit from courses like the Anthropology of Nutrition and other related courses, but we also want to make ecampus audits easier by not necessarily specifying a particular course, since offerings vary and new courses may become available that are used to them. I have attached the program notice of change to this email.
>
> Would your department support this?
>
> Thanks! Let me know if you have any questions or if you would like to chat about this, best,
>
> Marta
>
> Marta Gomez-Chiarri, Professor
> Chair, Department of Fisheries, Animal and Veterinary Sciences
> Coordinator Sustainable Agriculture and Food Systems Undergraduate Major
> University of Rhode Island
> 169 CBLS, 120 Flagg Road
> Kingston, RI 02881
> Phone 1-401-874-2917
> gomezchi@uri.edu
> http://web.uri.edu/favs/undergraduate-programs/
> http://web.uri.edu/favs/graduate-program/
> http://web.uri.edu/cels/safs/

THE
UNIVERSITY
OF RHODE ISLAND

GRADUATE SCHOOL
OF OCEANOGRAPHY

THINK BIG WE DO

Narragansett Bay Campus, 215 South Ferry Road, Narragansett, RI 02882 USA p: 401.874.6222 www.gso.uri.edu

MEMORANDUM

TO: Marta Gomez-Chiarri, Chair, Fisheries, Animal and Veterinary Sciences

FROM: David C. Smith, Associate Dean GSO

DATE 23 Feb 2018

SUBJECT: Revision to FAVS majors

The Graduate School of Oceanography supports the revision of bot the Aquaculture and Technology and the Aquaculture and Fisheries Science degree programs. We appreciate your inclusion of OCG courses within the changes.

THE
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# Appendix M

Revised 8/2016

## Notice of Change form

Notice of Change for: Updates to the Undergraduate Program Curriculum

Date: 02/09/2018

## A. PROGRAM INFORMATION

1. Name of institution
   University of Rhode Island

2. Name of department, division, school or college

   Department: Environmental and Natural Resource Economics
   College: College of the Environment and Life Sciences

3. Intended initiation date of program change. Include anticipated date for granting first degrees or certificates, if appropriate.

   Initiation date: September 2018
   First degree date: n/a

4. Intended location of the program

URI Main Campus, Kingston, Rhode Island

5. Summary description of proposed program (not to exceed 2 pages).

Change 1: Currently, we have two degree options: Option 1, Green Markets and Sustainability (GMS, 87% of ENRE majors), and Option 2, Environmental Economics and Management (EEM, 13% of ENRE majors).

For Degree Option 1, Green Markets and Sustainability (GMS) we propose to:

1. Add a lower bound on the MTH requirement to make pre-calculus the minimum required (MTH 111, MTH 103 or BUS 111) and retain MTH 131 (Calc. I) as strongly recommended.
2. Add statistics as a formal requirement:
   - STA 307, 308, 409 or BUS 210 required
3. Add EEC 440: Cost-Benefit Analysis as a required course in the core concentration.

For Degree Option 2, Environmental Economics and Management (EEM) we propose to:

1. Add intermediate micro (ECN 323 or ECN 328) as a core concentration requirement.
2. Add EEC 440: Cost-Benefit Analysis as a core concentration requirement.

Rationale: As part of our effort to incorporate a recent External Review of our undergraduate program, our goal is to strengthen our major curriculum. The net effects of these proposed changes are to make our degree options more rigorous in mathematics and statistics, both of which are fundamental to economics. These changes are also intended to make the two options more consistent, with students in both options facing more consistent requirements and experience more courses with other ENRE majors. This should help build a sense of cohesion in our major, and help prepare students for workforce expectations (both of these are noted in the External Review report).

Attached are the curriculum sheets for both options with changes marked in red.

Change 2: The Department of Biological Sciences informed our Department Chair recently that BIO 105 will not be offered starting Fall 2018. We propose to remove the course from our degree option 1 (GMS) curriculum sheets.

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Change 3: The Department of Chemistry informed our Department Chair that CHM 100 will not be offered. We propose to remove the course from our degree option 1 (GMS) curriculum sheets.

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Attached are the curriculum sheets for both options with changes marked in red.

6. If applicable, please include the existing URI catalog language and proposed catalog changes indicated in Track Changes.

The major is comprised of two options: Green Markets and Sustainability (GMS) and Environmental Economics and Management (EEM). The two options are discussed below.

Option 1: Green Markets and Sustainability (GMS). This option is for students who wish to develop a deep understanding of social and economic systems as they relate to a sustainable environment. This option is designed to provide considerable flexibility so students can focus their studies to meet their professional goals. Twenty-four credits in concentration courses are required at the 300 level or above, with 15 credits in environmental and natural resource economics (EEC), including economics of natural resource management and policy (EEC 310), benefit cost analysis (EEC 440) ~~-~~and a capstone course in environmental economics and policy (EEC 432), three credits in microeconomic theory (ECN 328 or 323), and six credits in other concentration courses selected by students in consultation with their advisors. Up to nine concentration credits may be in economics (ECN) or business (BUS). A minimum of 21 credits in basic and supporting sciences are required, including three credits in mathematics (MTH 111,103, 131 or BUS 111), ~~four credits in~~ introductory statistics (STA 307, 308, 409 or BUS 210), introductory geology (GEO 100 or 103), introductory biology (BIO 101/103~~ or 105~~), and

introductory chemistry (CHM ~~100,~~ 101, or 103). Introductory calculus (MTH 131) is strongly recommended, especially for students who are considering going to graduate school. Supporting sciences can be selected from a broad range of subjects including business (BUS 210 and 212 only), mathematics, statistics, computer science, natural resources science, physics, genetics, plant physiology, biology, ecology, chemistry, geology, or oceanography. An additional 25–27 credits in supporting electives allow the student either to develop a closely related focus area (e.g., green business) or to sample from a broad set of relevant courses.

Option 2: Environmental Economics and Management
(EEM).This option is for students who seek a balanced focus on environmental sciences and environmental economics. The option requires 36 credits of basic sciences, including at least eight credits in general biology (BIO 101/103, 102/104); four credits in general chemistry (CHM 101/102 or 103/105); introductory soil science (NRS 212); four~~three~~ credits in introductory ecology (BIO 262); four credits in introductory geology (GEO 103); three credits in introductory calculus (MTH 131);
and four~~three~~ credits in introductory statistics (STA 308). The 24-credit concentration includes a minimum of 12 concentration credits in environmental and resource economics (listed under EEC), including economics of natural resource management and policy (EEC 310), benefit cost analysis (EEC 440) and a capstone course in
environmental economics and policy (EEC 432), as well as three additional credits in microeconomic theory (ECN 328 or 323)~~six additional credits selected to meet the student's particular interests~~. Students are also required to take a minimum of 12 concentration credits selected from ecology, soils and watersheds, and geosciences. Students choose a minimum of 20 credits in supporting electives and eight credits in free electives.
Green Business. The Department of Environmental and Natural Resource Economics and the College of Business Administration offer a double major in environmental economics and general business. This program is designed for those interested in corporate sustainability, energy efficiency, non-profit management, green marketing, renewable energy, global environmental challenges, environmental policy, and energy finance. Students earn a B.S. in Environmental and Natural Resource Economics from the College of the Environment and Life Sciences and a B.S. in Business Administration from
the College of Business Administration. More details on this program can be found at

7. Signature of the President

David M. Dooley

# THE UNIVERSITY OF RHODE ISLAND

**Environmental & Natural Resource Economics - B.S.**
**Option: Environmental Economics and Management**
120 Earned Credits Total
**web.uri.edu/enre**

Student: _____
Student ID: _____
Advisor: _____

## General Education Guidelines:

General education is 40 credits. Each of the twelve outcomes (A1-D1) must be met by at least 3 credits. A single course may meet more than one outcome, but cannot be double counted towards the 40 credit total. At least one course must be a Grand Challenge (G). No more than twelve credits can have the same course code. General education courses may also be used to meet requirements of the major or minor when appropriate.

**LIST COURSES THAT MEET GENERAL EDUCATION:**

| General Education Credit Count | | | | | | |
|---|---|---|---|---|---|---|
| At least 40 credits, no more than 12 credits with the same course code | | | | | | |
| **Course** | **Credit** | **Grade** | | **Course** | **Credit** | **Grade** |
| *NRS100 | 3 | | | | | |
| *BIO101 | 3 | | | | | |
| *BIO103 | 1 | | | | | |
| *BIO102 | 3 | | | | | |
| *BIO104 | 1 | | | | | |
| *CHM101 **or** *CHM103 | 3 | | | | | |
| *GEO103 | 4 | | | | | |
| *MTH131 | 3 | | | | | |
| *EEC105 | 3 | | | | | |
| | | | | | | |
| | | | | Total Gen Ed Credits | | |
| | | | | | | |

**NOTE: BECAUSE MOST COURSES MEET MORE THAN ONE OUTCOME, YOUR OUTCOME AUDIT MIGHT BE COMPLETED BEFORE YOU REACH YOUR 40 CREDITS. HOWEVER, YOU MUST STILL COMPLETE 40 CREDITS OF GENERAL EDUCATION**

*course fulfills general education and a major requirement

**LIST COURSE AS EACH OUTCOME IS MET:**

| General Education Outcome Audit | |
|---|---|
| | **Course** |
| **KNOWLEDGE** | |
| **A1.** STEM | *NRS100 |
| **A2.** Social & Behavioral Sciences | *EEC105 |
| **A3.** Humanities | |
| **A4.** Arts & Design | |
| **COMPETENCIES** | |
| **B1.** Write effectively | |
| **B2.** Communicate effectively | |
| **B3.** Mathematical, statistical, or computational strategies | *MTH131 |
| **B4.** Information literacy | *GEO103 |
| **RESPONSIBILITIES** | |
| **C1.** Civic knowledge & responsibilities | |
| **C2.** Global responsibilities | |
| **C3.** Diversity & Inclusion | |
| **INTEGRATE & APPLY** | |
| **D1.** Ability to synthesize | |
| **GRAND CHALLENGE** | |
| **G.** At least one course of your 40 credits is an approved "G" course | |

**Transfer out of University College for Academic Success Requirement:** Must have completed at least 24 credits with a minimum cumulative 2.0 GPA, and received permission from the University College major advisor.

**Advising Notes:** _____

# THE UNIVERSITY OF RHODE ISLAND

**Environmental & Natural Resource Economics - B.S.**
**Option: Environmental Economics & Management**
120 Earned Credits Total

Student: _____
Student ID: _____
Advisor: _____

## ABOUT THE BS IN ENVIRONMENTAL & NATURAL RESOURCE ECONOMICS: ENVIRONMENTAL ECONOMICS MANAGEMENT (EEM) OPTION:

Environmental Economics & Management option offers students classes that blend the natural, physical, and economic sciences. The option is recommended for students interested in biodiversity conservation, land and water conservation, natural hazards, and global climate change, and those seeking a career in government agencies and non-governmental organizations dealing with these environmental issues. EEM has a stronger emphasis on the environmental sciences and prepares students to analyze problems of natural resources management by having a broader understanding of relationships between the processes of the physical and biological world, and of the economic systems. Please consult the Environmental & Natural Resource Economics website at: http://web.uri.edu/enre/.

## REVIEW YOUR PROGRAM REQUIREMENTS:

| INTRO to URI & Professional Courses: (10 credits) | | | |
|---|---|---|---|
| **Course** | **Semester** | **Credits** | **Grade** |
| URI 101 | | 1 | |
| *NRS 100 | | 3 | |
| *EEC 105 | | 3 | |
| EEC 205 | | 3 | |

| WRITING 200+ Level Requirement: (3-4 credits) | | | |
|---|---|---|---|
| **Course** | **Semester** | **Credits** | **Grade** |
| WRT | | 3 or 4 | |

| BASIC & SUPPORTING SCIENCE (31 Credits) | | | |
|---|---|---|---|
| **Course** | **Semester** | **Credits** | **Grade** |
| *BIO 101 | | 3 | |
| *BIO 103 | | 1 | |
| *BIO 102 | | 3 | |
| *BIO 104 | | 1 | |
| BIO 262 | | 4 | |
| *CHM101/102, **or** *CHM103/105 | | 4 | |
| *GEO 103 | | 4 | |
| NRS 212 | | 4 | |
| *MTH 131 | | 3 | |
| STA 308 | | 4 | |

| **FREE ELECTIVES:** Courses that are not required by the major do not fulfill general education. Consult with your advisor to determine total needed to meet 120 credit graduation requirement. | | | |
|---|---|---|---|
| **Course** | **Semester** | **Credits** | **Grade** |
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*Course approved for general education

| CONCENTRATION Requirement: (24 credits total) | | | |
|---|---|---|---|
| ***CONCENTRATION EEC Courses: (12 credits)*** | | | |
| **Course** | **Semester** | **Credits** | **Grade** |
| EEC 310 | | 3 | |
| EEC 432 | | 3 | |
| EEC 440 | | 3 | |
| ECN 328 or 323 | | 3 | |
| ***CONCENTRATION SCIENCE Courses: (12 credits)*** Credits beyond 12 will count towards Supporting Electives. Choose from the following courses: | | | |
| **ECOLOGY:** NRS 301, 302, 304, 305, 309, 324, 402, 406, 407 **SOILS AND WATERSHED:** NRS 351, 412, 423/425, 424, 426, 450, 452, 461, 471 **GEOSCIENCES:** GEO 305, 404, 482, 483, 484 | | | |
| **Course** | **Semester** | **Credits** | **Grade** |
| | | | |
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| SUPPORTING ELECTIVES (20 credits) See list of approved courses. → | | | |
|---|---|---|---|
| **Course** | **Semester** | **Credits** | **Grade** |
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Minimum 2.0 GPA required in major for graduation.
Minimum 2.0 cumulative GPA required for graduation.

**Effective: 2017 - 2018**

| Supporting Electives for Environmental & Natural Resource Economics<br>Effective 2017 - 2018 | | | |
|---|---|---|---|
| **Subject** | **Code** | **Title** | **Credits** |
| **Africana Studies** | AAF 410 | Issues in African Development | 3 |
| **Aquaculture & Fisheries Science** | AFS 200+ | All courses 200 level and above | |
| **Anthropology** | APG 319 | Cultural Behavior and Environment | 3 |
| | APG/PSY 405 | Psychological Anthropology | 3 |
| | APG 413 | Peoples of the Sea | 3 |
| **Animal and Veterinary Science** | AVS 300+ | All courses 300 level and above | |
| **Biology** | BIO 200+ | All courses 200 level and above | |
| **Business** | BUS 200+ | All courses 200 level and above | |
| **Chemistry** | CHM 200+ | All courses 200 level and above | |
| **Cell & Molecular Biology** | CMB 211 | Introductory Microbiology | 4 |
| | CMB 300+ | All courses 300 level and above | |
| **Communication Studies** | COM 315 | Environmental Dimensions of Communication | 3 |
| | COM 455 | Science & Communication | 3 |
| **Community Planning** | CPL 391 | Directed Study in Community Planning | 1 to 3 |
| | CPL 400+ | All courses 400 level and above | |
| **Computer Science** | CSC 200 | Computer Problem Solving for Science & Engineering | 4 |
| | *CSC 201 | Introduction to Computer Programming | 4 |
| | CSC 211 | Object Oriented Programming | 4 |
| | CSC 450 | Scientific Computing | 4 |
| **Economics** | ECN 200 + | All courses 200 level and above | |
| **Environmental Economics** | EEC 200+ | All courses 200 level and above | |
| **Entomology** | ENT 300+ | All courses 300 level and above | |
| **Environmental Sciences** | EVS 300+ | All courses 300 level and above | |
| **Geosciences** | GEO 210 | Landforms: Origins & Evolution | 4 |
| | *GEO/EEC/NRS 234G | Introduction to Water Resources | 3 |
| | GEO 300+ | All courses 300 level and above | |
| **Marine Affairs** | MAF 100+ | All courses 100 level and above | |
| **Mathematics** | MTH 132 | Applied Calculus II | 3 |
| | *MTH 142 | Intermediate Calculus with Analytic Geometry | 4 |
| | MTH 215+ | All courses 215 and above | |
| **Nutrition & Food Sciences** | NFS 400 + | All courses 400 level and above | |
| **Natural Resources Science** | NRS 200 | Seminar in Natural Resources | 1 |
| | NRS 223 | Conservation Biology | 4 |
| | *NRS/EEC/GEO 234G | Introduction to Water Resources | 3 |
| | NRS 300+ | All courses 300 level and above | |
| **Oceanography** | OCG 300+ | All courses 300 level and above | |
| **Philosophy** | *PHL 212 | Ethics | 3 |
| | *PHL 215 | Science & Inquiry | 3 |
| | *PHL 217 | Social Philosophy | 3 |
| | PHL 451 | Symbolic Logic | 3 |
| | *PHL 452 | Philosophy of Science | 3 |
| | PHL 453 | Philosophy of the Social Sciences | 3 |
| **Plant Sciences** | PLS 200 | Introduction to Plant Protection | 4 |
| | PLS 210 | Plant Protection Practicum | 2 |
| | PLS 300+ | All courses 300 level and above | |
| **Political Science** | PSC 211 | World Politics | 4 |
| | PSC 300+ | All courses 300 level and above | |
| **Psychology** | PSY 301 | Introduction to Experimental Psychology | 3 |
| | PSY 302 | Applied Methods in Psychological Research | 3 |
| | PSY/APG 405 | Psychological Anthropology | 3 |
| **Statistics** | STA 400+ | All courses 400 level and above | |
| **Sustainability** | SUS 300+ | All courses 300 level and above | |
| **Writing** | *WRT 332 | Technical Writing | 3 |

*Courses that meet general education requirements.

**APG310 Topics in Anthropology & COM410 Advanced Topics in Comm. Studies are approved only if topics relevant to major

***CVE300+ and OCE300+ are approved, but may not be accessible to most majors

**Effective: 2017 - 2018**

# B.S. Environmental & Natural Resource Economics
## Option: Environmental Economics & Management - Effective Fall 2017
### *College of the Environment and Life Sciences*
### SAMPLE Four-Year Plan

**Freshman Year *Fall* Semester**

| Course Code | Description | Cr |
|---|---|---|
| URI 101 | Planning for Academic Success | 1 |
| *EEC 105 | Introduction to Resource Economics | 3 |
| *NRS 100 | Natural Resource Conservation | 3 |
| *BIO 101/103 | Principles of Biology I/Lab | 4 |
| | *General Education | 3 |
| | | **14** |

**Freshman Year *Spring* Semester**

| Course Code | Description | Cr |
|---|---|---|
| EEC 205 | Environmental Economics and Policy | 3 |
| *GEO 103 | Understanding the Earth | 4 |
| *BIO 102/104 | Principles of Biology II/Lab | 4 |
| | *General Education | 3-4 |
| | *General Education | 3-4 |
| | | **17-19** |

**Year 1 Milestones: Earn 30 credits with a cumulative gpa of 2.0 or higher. EEC205 (offered spring only). Finalize ENRE option selection (GMS or EEM). Transfer from UC to CELS. Consider a summer internship.**

**Sophomore Year *Fall* Semester**

| Course Code | Description | Cr |
|---|---|---|
| *MTH 131 | Applied Calculus I | 3 |
| NRS 212 | Introduction to Soil Science | 4 |
| BIO 262 | Introductory Ecology | 4 |
| | *General Education | 3-4 |
| | *General Education | 3-4 |
| | | **17-19** |

**Sophomore Year *Spring* Semester**

| Course Code | Description | Cr |
|---|---|---|
| *CHM 101/102 or *CHM103/105 | General Chemistry I/Lab, or Introductory Chemistry/Lab | 4 |
| STA 308 | Introductory Statistics | 4 |
| | Supporting Elective | 3-4 |
| WRT_____ | WRT 200 level or above | 3-4 |
| | | **14-16** |

**Year 2 Milestones: Earn 60 credits with a cumulative gpa of 2.0 or higher. NRS212 (offered fall only). Consider a minor (optional). Meet with faculty advisor to plan jr/sr year courses and discuss internship/research/study opportunities.**

**Junior Year *Fall* Semester**

| Course Code | Description | Cr |
|---|---|---|
| EEC 310 | Economics of Natural Resource Management and Policy | 3 |
| EEC 328 or 323 | Int. Econ. Theory: Pricing & Distrib., or Intermediate Microeconomics | 3 |
| | Concentration Elective | 3-4 |
| | Supporting Elective | 3-4 |
| | Supporting Elective | 3-4 |
| | | **15-19** |

**Junior Year *Spring* Semester**

| Course Code | Description | Cr |
|---|---|---|
| | Concentration Elective | 3-4 |
| | Concentration Elective | 3-4 |
| | Free Elective | 3-4 |
| | Supporting Elective | 3-4 |
| | Supporting Elective | 3-4 |
| | | |
| | | **15-19** |

**Year 3 Milestones: Earn 90 credits with a cumulative gpa of 2.0 or higher. EEC310 (offered fall only). Meet with faculty advisor to plan senior year courses, discuss internship/research opportunities, and prepare Intent to Graduate Application for fall submission.**

**Senior Year *Fall* Semester**

| Course Code | Description | Cr |
|---|---|---|
| EEC 440 | Benefit Cost Analysis | 3 |
| | Concentration Elective | 3-4 |
| | Supporting Elective | 3-4 |
| | Supporting Elective | 3-4 |
| | *General Education | 3-4 |
| | | |
| **Total Credits to Graduate = 120** | | **15-19** |

**Senior Year *Spring* Semester**

| Course Code | Description | Cr |
|---|---|---|
| EEC 432 | Environmental and Resource Economics and Policy | 3 |
| | *General Education | 3-4 |
| | Free Elective | 3-4 |
| | Free Elective | 3-4 |
| | Free Elective | 3-4 |
| | | **15-17** |

**Year 4 Milestones: Complete all remaining courses and requirements. EEC432 (offered spring only). Minimum of 120 earned credits with a cumulative gpa of 2.0 or higher; and minimum 2.0 gpa in major concentration courses.**

**Effective: Fall 2017 - 2018**

# THE UNIVERSITY OF RHODE ISLAND

**Environmental & Natural Resource Economics - B.S.**
**Option: Green Markets and Sustainability**
120 Earned Credits Total
**web.uri.edu/enre**

Student: _____
Student ID: _____
Advisor: _____

## General Education Guidelines:

General education is 40 credits. Each of the twelve outcomes (A1-D1) must be met by at least 3 credits. A single course may meet more than one outcome, but cannot be double counted towards the 40 credit total. At least one course must be a Grand Challenge (G). No more than twelve credits can have the same course code. General education courses may also be used to meet requirements of the major or minor when appropriate.

**LIST COURSES THAT MEET GENERAL EDUCATION:**

| General Education Credit Count | | | | | | |
|---|---|---|---|---|---|---|
| At least 40 credits, no more than 12 credits with the same course code | | | | | | |
| **Course** | **Credit** | **Grade** | | **Course** | **Credit** | **Grade** |
| *NRS100 | 3 | | | | | |
| *BIO101/103 **or** *BIO105 | 3 or 4 | | | | | |
| *CHM101 or *CHM 103 | 3 | | | | | |
| *GEO100 (C2) **or** *GEO103 (B4) | 3 or 4 | | | | | |
| *MTH 111 or 131 or BUS 111 | 3 | | | | | |
| *EEC105 | 3 | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | Total Gen Ed Credits | | |
| | | | | | | |

**NOTE: BECAUSE MOST COURSES MEET MORE THAN ONE OUTCOME, YOUR OUTCOME AUDIT MIGHT BE COMPLETED BEFORE YOU REACH YOUR 40 CREDITS. HOWEVER, YOU MUST STILL COMPLETE 40 CREDITS OF GENERAL EDUCATION**

*course fulfills general education and a major requirement

**LIST COURSE AS EACH OUTCOME IS MET:**

| General Education Outcome Audit | |
|---|---|
| | **Course** |
| **KNOWLEDGE** | |
| **A1.** STEM | *NRS100 |
| **A2.** Social & Behavioral Sciences | *EEC105 |
| **A3.** Humanities | |
| **A4.** Arts & Design | |
| **COMPETENCIES** | |
| **B1.** Write effectively | |
| **B2.** Communicate effectively | |
| **B3.** Mathematical, statistical, or computational strategies | *MTH _____ |
| **B4.** Information literacy | |
| **RESPONSIBILITIES** | |
| **C1.** Civic knowledge & responsibilities | |
| **C2.** Global responsibilities | |
| **C3.** Diversity & Inclusion | |
| **INTEGRATE & APPLY** | |
| **D1.** Ability to synthesize | |
| **GRAND CHALLENGE** | |
| **G.** At least one course of your 40 credits is an approved "G" course | |

**Transfer out of University College for Academic Success Requirement:** Must have completed at least 24 credits with a minimum cumulative 2.0 GPA, and received permission from the University College major advisor.

**Advising Notes:** _____

# THE UNIVERSITY OF RHODE ISLAND

**Environmental & Natural Resource Economics - B.S.**
**Option: Green Markets and Sustainability**
120 Earned Credits Total

Student: _____
Student ID: _____
Advisor: _____

## ABOUT THE BS IN ENVIRONMENTAL & NATURAL RESOURCE ECONOMICS:
## GREEN MARKETS & SUSTAINABILITY OPTION

Green Markets and Sustainability (GMS) option is recommended for students who seek a career in business, governmental and non-governmental organizations dealing with a wide range of environmental topics, including: green business, renewable energy, fisheries, coastal management, sustainable development, and others. Students in this option will study areas such as management of our international fisheries and other marine resources, efficient use of land and water resources, and how green markets can protect the environment while also helping to alleviate global poverty. It is also recommended for students planning to do graduate studies in environmental economics, or go to law school with an interest in environmental law or international disputes involving natural resources. The GMS option has a stronger focus on environmental economics than EEM, and at the same time allows considerable flexibility for students to sample broadly from courses across the University or to develop a related focus area (e.g., green business). Please consult the Environmental & Natural Resource Economics website at: http://web.uri.edu/enre/.

**REVIEW YOUR PROGRAM REQUIREMENTS:**

**Intro. to URI & Professional Courses: (10 credits)**

| Course | Semester | Credits | Grade |
|---|---|---|---|
| URI 101 | | 1 | |
| *NRS 100 | | 3 | |
| *EEC 105 | | 3 | |
| EEC 205 | | 3 | |

**WRITING 200+ Level Requirement: (3-4 credits)**

| Course | Semester | Credits | Grade |
|---|---|---|---|
| WRT | | 3 or 4 | |

**BASIC & SUPPORTING SCIENCE (21-23 credits)**
***Required Basic & Supporting Science Courses (12-14 cr.)***

| Course | Semester | Credits | Grade |
|---|---|---|---|
| *BIO 101/103 (4)~~; or *BIO 105 (3)~~ | | 3 or 4 | |
| ~~CHM 100; or~~ *CHM 101~~;~~ **or** *CHM 103 | | 3 | |
| *GEO 100 (3); **or** *GEO 103 (4) | | 3 or 4 | |
| *MTH 131 | | 3 | |
| STA 307, 308, 409 or BUS 210 | | | |

*Note: *MTH131 is strongly recommended. May substitute w/MTH 111 or BUS111.*

***Remaining Basic & Supporting Science credits (7-9 cr.):***
Choose courses from these categories: AFS, AVS, BIO, BUS (210 & 212 only), CHM, CMB, CSC, GEO, MTH, NRS, OCG, PHY, PLS, and STA.

| Course | Semester | Credits | Grade |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

*Course approved for general education

Minimum 2.0 GPA required in major for graduation.
Minimum 2.0 cumulative GPA required for graduation.

**CONCENTRATION Requirement: (24 credits)**
300 level or above; minimum 15 credits in EEC; up to 9 credits in ECN or BUS.

| Course | Semester | Credits | Grade |
|---|---|---|---|
| ECN 323; **or** ECN 328 | | 3 | |
| EEC 310 | | 3 | |
| EEC 432 | | 3 | |
| EEC 440 | | 3 | |
| EEC | | 3 | |
| EEC | | 3 | |
| EEC **or** BUS **or** ECN _____ | | 3 | |
| EEC **or** BUS **or** ECN _____ | | 3 | |

**Supporting Electives (27 credits)**
**See list of approved courses. →**

| Course | Semester | Credits | Grade |
|---|---|---|---|
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**Free Electives:** courses that are not required by the major and do not fulfill general education. Consult with your advisor to determine total needed to meet 120 credit graduation req.

| Course | Semester | Credits | Grade |
|---|---|---|---|
| | | | |
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**Effective: 2017 - 2018**

| Supporting Electives for Environmental & Natural Resource Economics<br>Effective 2017 - 2018 | | | |
|---|---|---|---|
| **Subject** | **Code** | **Title** | **Credits** |
| **Africana Studies** | AAF 410 | Issues in African Development | 3 |
| **Aquaculture & Fisheries Science** | AFS 200+ | All courses 200 level and above | |
| **Anthropology** | APG 319 | Cultural Behavior and Environment | 3 |
| | APG/PSY 405 | Psychological Anthropology | 3 |
| | APG 413 | Peoples of the Sea | 3 |
| **Animal and Veterinary Science** | AVS 300+ | All courses 300 level and above | |
| **Biology** | BIO 200+ | All courses 200 level and above | |
| **Business** | BUS 200+ | All courses 200 level and above | |
| **Chemistry** | CHM 200+ | All courses 200 level and above | |
| **Cell & Molecular Biology** | CMB 211 | Introductory Microbiology | 4 |
| | CMB 300+ | All courses 300 level and above | |
| **Communication Studies** | COM 315 | Environmental Dimensions of Communication | 3 |
| | COM 455 | Science & Communication | 3 |
| **Community Planning** | CPL 391 | Directed Study in Community Planning | 1 to 3 |
| | CPL 400+ | All courses 400 level and above | |
| **Computer Science** | CSC 200 | Computer Problem Solving for Science & Engineering | 4 |
| | *CSC 201 | Introduction to Computer Programming | 4 |
| | CSC 211 | Object Oriented Programming | 4 |
| | CSC 450 | Scientific Computing | 4 |
| **Economics** | ECN 200 + | All courses 200 level and above | |
| **Environmental Economics** | EEC 200+ | All courses 200 level and above | |
| **Entomology** | ENT 300+ | All courses 300 level and above | |
| **Environmental Sciences** | EVS 300+ | All courses 300 level and above | |
| **Geosciences** | GEO 210 | Landforms: Origins & Evolution | 4 |
| | *GEO/EEC/NRS 234G | Introduction to Water Resources | 3 |
| | GEO 300+ | All courses 300 level and above | |
| **Marine Affairs** | MAF 100+ | All courses 100 level and above | |
| **Mathematics** | MTH 132 | Applied Calculus II | 3 |
| | *MTH 142 | Intermediate Calculus with Analytic Geometry | 4 |
| | MTH 215+ | All courses 215 and above | |
| **Nutrition & Food Sciences** | NFS 400 + | All courses 400 level and above | |
| **Natural Resources Science** | NRS 200 | Seminar in Natural Resources | 1 |
| | NRS 223 | Conservation Biology | 4 |
| | *NRS/EEC/GEO 234G | Introduction to Water Resources | 3 |
| | NRS 300+ | All courses 300 level and above | |
| **Oceanography** | OCG 300+ | All courses 300 level and above | |
| **Philosophy** | *PHL 212 | Ethics | 3 |
| | *PHL 215 | Science & Inquiry | 3 |
| | *PHL 217 | Social Philosophy | 3 |
| | PHL 451 | Symbolic Logic | 3 |
| | *PHL 452G | Philosophy of Science | 3 |
| | PHL 453 | Philosophy of the Social Sciences | 3 |
| **Plant Sciences** | PLS 200 | Introduction to Plant Protection | 4 |
| | PLS 210 | Plant Protection Practicum | 2 |
| | PLS 300+ | All courses 300 level and above | |
| **Political Science** | PSC 211 | World Politics | 4 |
| | PSC 300+ | All courses 300 level and above | |
| **Psychology** | PSY 301 | Introduction to Experimental Psychology | 3 |
| | PSY 302 | Applied Methods in Psychological Research | 3 |
| | PSY/APG 405 | Psychological Anthropology | 3 |
| **Statistics** | STA 400+ | All courses 400 level and above | |
| **Sustainability** | SUS 300+ | All courses 300 level and above | |
| **Writing** | *WRT 332 | Technical Writing | 3 |

*Courses that meet general education requirements.

**APG310 Topics in Anthropology & COM410 Advanced Topics in Communication Studies are approved only if topics relevant to major

**CVE300+ and OCE300+ are approved, but may not be accessible to most majors

# B.S. Environmental & Natural Resource Economics
## Option: Green Markets & Sustainability - Effective Fall 2017
### *College of the Environment and Life Sciences*
### SAMPLE Four-Year Plan

**Freshman Year *Fall* Semester**

| Course Code | Description | Cr |
|---|---|---|
| *BIO 101/103 ~~or *BIO 105~~ | Principles of Biology I/Lab **or** Biology for Daily Life w/Lab | 3-4 |
| *EEC 105 | Introduction to Resource Economics | 3 |
| *NRS 100 | Natural Resource Conservation | 3 |
| URI 101 | Planning for Academic Success | 1 |
| | *General Education | 3 |
| | *General Education | 3 |
| | | **16-17** |

**Freshman Year *Spring* Semester**

| Course Code | Description | Cr |
|---|---|---|
| *MTH 111, 131 or BUS 111 or *131 | Precalculus, Applied Calculus or Business Analysis and Applications (based on placement) | 3 |
| *GEO 100 or *GEO 103 | Environmental Geology or Understanding the Earth | 3-4 |
| EEC 205 | Environmental Economics and Policy | 3 |
| | *General Education | 3 |
| | *General Education | 3 |
| | | **15-16** |

**Year 1 Milestones: Earn 30 credits with a cumulative gpa of 2.0 or higher. EEC205 (offered spring only). Finalize ENRE option selection (GMS or EEM). Transfer from UC to CELS. Consider a summer internship.**

**Sophomore Year *Fall* Semester**

| Course Code | Description | Cr |
|---|---|---|
| EEC 310 | Ecn. of Natural Resource Mgt. & Policy | 3 |
| ECN 328, or ECN323 | Int. Econ. Theory: Pricing & Distrib., or Intermediate Microeconomics | 3 |
| *CHM 101, or *CHM103 | General Chemistry, or Intro to Chemistry | 3 |
| | Supporting Science Elective | 3-4 |
| | *General Education | 3-4 |
| | | **15-17** |

**Sophomore Year *Spring* Semester**

| Course Code | Description | Cr |
|---|---|---|
| | Concentration Elective | 3-4 |
| STA 307, 308, 409 or BUS 210 | Supporting Science Elective | 3-4 |
| | *General Education | 3-4 |
| | *General Education | 3-4 |
| WRT_____ | WRT 200 level or above | 3-4 |
| | | |
| | | |
| | | **15-19** |

**Year 2 Milestones: Earn 60 credits with a cumulative gpa of 2.0 or higher. EEC310 (offered fall only). Consider a minor (optional). Meet with faculty advisor to plan jr/sr year courses and discuss internship/research/study abroad opportunities.**

**Junior Year *Fall* Semester**

| Course Code | Description | Cr |
|---|---|---|
| EEC 440 | Benefit Cost Analysis | 3 |
| | Concentration Elective | 3-4 |
| | Supporting Elective | 3-4 |
| | Supporting Elective | 3-4 |
| | *General Education | 3-4 |
| | | **15-19** |

**Junior Year *Spring* Semester**

| Course Code | Description | Cr |
|---|---|---|
| | Concentration Elective | 3-4 |
| | Concentration Elective | 3-4 |
| | Supporting Elective | 3-4 |
| | Supporting Elective | 3-4 |
| | *General Education | 3-4 |
| | | **15-19** |

**Year 3 Milestones: Earn 90 credits with a cumulative gpa of 2.0 or higher. Meet with faculty advisor to plan senior year courses, discuss internship/research opportunities, and prepare Intent to Graduate Application for fall submission.**

**Senior Year *Fall* Semester**

| Course Code | Description | Cr |
|---|---|---|
| | Supporting Science Elective | 3-4 |
| | Supporting Elective | 3-4 |
| | Supporting Elective | 3-4 |
| | Free Elective | 3-4 |
| | Free Elective | 3-4 |
| | | |
| **Total Credits to Graduate = 120** | | **15-19** |

**Senior Year *Spring* Semester**

| Course Code | Description | Cr |
|---|---|---|
| EEC 432 | Environmental and Resource Economics and Policy | 3 |
| | Supporting Elective | 3-4 |
| | Supporting Elective | 3-4 |
| | Supporting Elective | 3-4 |
| | *General Education | 3-4 |
| | | **15-19** |

**Year 4 Milestones: Complete all remaining courses and requirements. EEC432 (offered spring only). Minimum of 120 earned credits with a cumulative gpa of 2.0 or higher; and minimum 2.0 gpa in major concentration courses.**

**Effective: 2017 - 2018**

THE
UNIVERSITY
OF RHODE ISLAND

Appendix N

Revised 8/2016

Notice of Change form

**Notice of Change for: Wildlife and Conservation Biology**

**Date: 2-22-18**

## A. PROGRAM INFORMATION

1. **Name of institution**
   University of Rhode Island

2. **Name of department, division, school or college**

   Department: CELS
   College: Natural Resources Science

3. **Intended initiation date of program change. Include anticipated date for granting first degrees or certificates, if appropriate.**

   Initiation date: Fall 2018
   First degree date: NA

4. **Intended location of the program:**
   **Kingston campus**

5. **Summary description of proposed program (not to exceed 2 pages).**

6. **If applicable, please include the existing URI catalog language and proposed catalog changes indicated in Track Changes.**

**We want to make the following changes to the catalog for 2018/2019**

1) **Change**: Correct a math calculation errors in the minimum number of concentration credits from 23 down to 22 credits, and alter language for the total number of credits needed in concentration and supporting electives.

**Rationale**: A math error in prior catalogs (i.e., 2014-2016) inadvertently listed NRS 407 as a 4 credit course (it is a 3-credit course). Therefore we need to correct this error, as a student could potential take all needed concentration courses and accumulate only 22 credits. We suggest changing the wording in the catalog to state that a student must take “at least 22 credits” of concentration courses. We also suggest altering the wording for supporting electives to state that a student must take “at least 24 credits” of supporting electives.

Thus, by default a student must take at least 46 credits of concentration and supporting electives with this change. These changes reflect similar language to the Environmental Science and Management major.

2) **Change**: Allow student to take either CHM 103/105 or CHM 101/102.

**Rationale**: We want Wildlife and Conservation Biology majors to take CHM 103/105 and CHM 124/126. Some students, however take CHM 102/102 before meeting with an advisor or when transferring in. Because the CHM department allows students to take either CHM 103/105 or CHM 101/102 as a prerequisite for CHM 124/126, this change will satisfy the CHM department guidelines and match current guidelines for Environmental Science and Management majors. We propose to list this change in the catalog, but not on our checksheet in maximize the number of students taking CHM 103/105. This change will mean that a curriculum modification will not be necessary for students who take CHM 101/102.

3) **Change**: Delete the minimum grade requirement of C or better for NRS 223 to transfer from University College to CELS.

**Rationale**: Although listed in the current catalog, this change was never approved by Faculty Senate, thus is an error. Also in addition, not all students have taken NRS 223 by the time they have completed 30 credits, therefore this in an unnecessary roadblock to transfer from UC to CELS. The NRS faculty do feel it is important to retain a minimum grade for other introductory courses (i.e., intro BIOs and NRS 100).

# Existing catalog language:

### Wildlife and Conservation Biology:

The major in wildlife and conservation biology, offered through the Department of Natural Resources Science (NRS), prepares students for professional careers in the public and private sectors of wildlife biology. In addition, the major provides a solid background for graduate study. Wildlife biologists are professionals concerned with the scientific management of the earth's wildlife species and their habitats. They work in the areas of preservation, conservation, and management of wildlife species. Wildlife majors meet the educational requirements for state and federal employment in the wildlife profession, and can apply to become Certified Wildlife Biologists (CWBs) who are recognized by The Wildlife Society.

The major requires professional courses (19 credits) including introductory ecology (BIO 262; 4 credits), introduction to resource economics (EEC 105; 3 credits), natural resource conservation (NRS 100; 3 credits), a seminar in natural resources (NRS 200; 1 credit), introductory soil science (NRS 212; 4 credits), and conservation biology (NRS 223; 4 credits). Basic science requirements (22-23 credits) include eight credits of biological sciences (BIO 101/103 & 102/104); eight credits of introductory and organic chemistry (CHM 103/105 & 124/126); three credits applied calculus (MTH 131); and three to four credits of statistics (STA 308 or 409). Required concentration courses (23-25 credits) include principles of wildlife ecology and management (NRS 305; 3 credits); wildlife field techniques (NRS 309; 3 credits); field botany and taxonomy (BIO 323; 4 credits); wetland wildlife

(NRS 406; 4 credits) or endangered species conservation (NRS 407; 3 credits); and 9-11 additional credits from an approved list of concentration courses that are recommended to include either field ornithology (NRS 304, 3 credits), mammalogy (NRS 324, 4 credits), vertebrate biology (BIO 366, 3 credits), herpetology (NRS 417, 4 credits), animal behavior (BIO 467, 3 credits), or wildlife biometrics (NRS 402, 3 credits). Supporting electives (24-26 credits) must be selected from the approved list or from concentration electives or from other 300 or 400 level natural resources science courses. Students may complete specific course work to apply to become a certified wildlife biologist that includes the following supporting electives: three credits in botany; six credits in zoology; six credits in resources policy; and six credits in communications. Up to 12 credits of experiential learning courses may be taken. A maximum of 10 credits of experiential learning courses may be taken toward satisfying concentration credit (letter grade courses only) and up to 12 credits of experiential learning courses may be used as supporting electives (letter grade or S/U courses). Concentration and supporting elective courses must total at least 49 credits. At least 12 credits of natural resources science courses must be completed in concentration and at least 6 more in supporting electives. A total of 120 credits is required for graduation.

In order to transfer from University College for Academic Success to the College of the Environment and Life Sciences as a Wildlife and Conservation Biology major (or be coded as such in the College of the Environment and Life Sciences), a student must have earned 30 credits including BIO 101, 103, 102, 104 with grades of C or better; NRS 100, 223 with a grade of C or better.

## Proposed Catalog Language:

The major in wildlife and conservation biology, offered through the Department of Natural Resources Science (NRS), prepares students for professional careers in the public and private sectors of wildlife biology. In addition, the major provides a solid background for graduate study. Wildlife biologists are professionals concerned with the scientific management of the earth's wildlife species and their habitats. They work in the areas of preservation, conservation, and management of wildlife species. Wildlife majors meet the educational requirements for state and federal employment in the wildlife profession, and can apply to become Certified Wildlife Biologists (CWBs) who are recognized by The Wildlife Society.

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learning courses may be used as supporting electives (letter grade or S/U courses). ~~Concentration and supporting elective courses must total at least 49 credits.~~ At least 12 credits of natural resources science courses must be completed in concentration and at least 6 more in supporting electives. A total of 120 credits is required for graduation.

In order to transfer from University College for Academic Success to the College of the Environment and Life Sciences as a Wildlife and Conservation Biology major (or be coded as such in the College of the Environment and Life Sciences), a student must have earned 30 credits including BIO 101, 103, 102, 104; and NRS 100 ~~with grades of C or better; NRS 100, 223~~ with a grade of C or better.

## 7. Signature of the President

David M. Dooley

Wildlife and Conservation Biology:

The major in wildlife and conservation biology, offered through the Department of Natural Resources Science (NRS), prepares students for professional careers in the public and private sectors of wildlife biology. In addition, the major provides a solid background for graduate study. Wildlife biologists are professionals concerned with the scientific management of the earth's wildlife species and their habitats. They work in the areas of preservation, conservation, and management of wildlife species. Wildlife majors meet the educational requirements for state and federal employment in the wildlife profession, and can apply to become Certified Wildlife Biologists (CWBs) who are recognized by The Wildlife Society.

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In order to transfer from University College for Academic Success to the College of the Environment and Life Sciences as a Wildlife and Conservation Biology major (or be coded as such in the College of the Environment and Life Sciences), a student must have earned 30 credits including BIO 101, 103, 102, 104, and NRS 100 with grades of C or better~~; NRS 100, 223 with a grade of C or better~~.

To: Dr. Rebecca Brown, CELS Curriculum Affairs Committee

From: Dr. Art Gold, Chair NRS, and Dr. Peter Paton

Subject: Corrections and changes to Wildlife and Conservation Biology Catalog listing for fall 2018

Date: 20 February 2018

We want to make the following changes to the catalog for 2018/2019

1) **Change**: Correct a math calculation errors in the minimum number of concentration credits from 23 down to 22 credits, and alter language for the total number of credits needed in concentration and supporting electives.

   **Rationale**: A math error in prior catalogs (i.e., 2014-2016) inadvertently listed NRS 407 as a 4 credit course (it is a 3-credit course). Therefore we need to correct this error, as a student could potential take all needed concentration courses and accumulate only 22 credits. We suggest changing the wording in the catalog to state that a student must take "at least 22 credits" of concentration courses. We also suggest altering the wording for supporting electives to state that a student must take "at least 24 credits" of supporting electives. Thus, by default a student must take at least 46 credits of concentration and supporting electives with this change. These changes reflect similar language to the Environmental Science and Management major.

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   **Rationale**: We want Wildlife and Conservation Biology majors to take CHM 103/105 and CHM 124/126. Some students, however take CHM 101/102 before meeting with an advisor or when transferring in. Because the CHM department allows students to take either CHM 103/105 or CHM 101/102 as a prerequisite for CHM 124/126, this change will conform the CHM department guidelines and match current guidelines for Environmental Science and Management majors.

**EL_WCB_BS**
120 Earned Credits Total

Student ID: _____
Advisor: _____

## ABOUT THE BS in WILDLIFE & CONSERVATION BIOLOGY:

Students enrolled in the Wildlife & Conservation Biology major study a combination of the natural sciences and principles of managing wildlife populations and their habitats. This major is one of very few in the United States that fulfills the educational requirements for certification as an Associate Wildlife Biologist by The Wildlife Society, the international organization for professionals in the wildlife field. It also provides an excellent foundation for graduate school. The URI Student Chapter of The Wildlife Society is heavily involved with career-related activities. web.uri.edu/nrs/wildlife-and-conservation-biology/.

**REVIEW YOUR PROGRAM REQUIREMENTS**

**Intro to URI & NRS (2 credits)**

| Course | Semester | Credits | Grade |
|---|---|---|---|
| URI 101 | | 1 | |
| NRS 101 | | 1 | |

**Intro. Professional Courses (19 credits)**

| Course | Semester | Credits | Grade |
|---|---|---|---|
| BIO 262 | | 4 | |
| *EEC 105 | | 3 | |
| *NRS 100 | | 3 | |
| NRS 200 | | 1 | |
| NRS 212 | | 4 | |
| NRS 223 | | 4 | |

**Basic Sciences (22-23 credits)**

| Course | Semester | Credits | Grade |
|---|---|---|---|
| *BIO 101 | | 3 | |
| *BIO 103 | | 1 | |
| *BIO 102 | | 3 | |
| *BIO 104 | | 1 | |
| *CHM 103 | | 3 | |
| CHM 105 | | 1 | |
| CHM 124 | | 3 | |
| CHM 126 | | 1 | |
| *MTH 131 | | 3 | |
| STA 308 (4) **Or** STA 409 (3) | | 3-4 | |

**Free Electives**

Courses not required by the major & do not fulfill gen eds. Consult w. your advisor to determine total needed to meet 120 credit graduation requirement.

| Course | Semester | Credits | Grade |
|---|---|---|---|
| | | | |
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***Courses approved for general education.**

Minimum 2.0 cumulative GPA required in major for graduation.
Minimum overall 2.0 cumulative GPA required for graduation.

**Concentration Courses (at least 22 credits) Must include at least 12 credits from NRS**

***Required Concentration (13 - 14 credits)***

| Course | Semester | Credits | Grade |
|---|---|---|---|
| NRS 305 | | 3 | |
| NRS 309 | | 3 | |
| NRS 406 (4) or NRS 407 (3) | | 3-4 | |
| BIO 323 | | 4 | |

***Additional Concentration Courses (9 -11 credits)***
*****See approved Concentration Course List***

| Course | Semester | Credits | Grade |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

**Supporting Electives (at least 24 credits)**
**Must include at least 6 credits from NRS.**
****See approved Supporting Elective list**

Courses may be selected from **Concentration courses** (see approved list**)** or from **Supporting Electives** (see approved list). Students interested in a career as a Wildlife Biologist with the federal government should include 3 credits of botany. Students interested in becoming a Certified Wildlife Biologist should include 3 credits in botany, 6 credits in zoology, 6 credits in resources policy or planning, and 6 credits in communication. Up to 12 credits of experiential learning courses may be taken. A maximum of 10 credits of exp. learning courses may be used for Concentration credit (letter grade only) and up to 12 credits of exp. learning courses may be used for Suppt. Electives (Letter Grade or S/U). Senior Colloquium (NRS 480, 2 cr.) is strongly recommended.

| Course | Semester | Credits | Grade |
|---|---|---|---|
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**Effective: 2017 - 2018**

## B.S. Wildlife & Conservation Biology - Effective Fall 2017

*College of the Environment and Life Sciences*

| Approved Concentration Courses (9 - 11 credits) | | |
|---|---|---|
| **Course (credits)** | If seeking federal wildlife biologist (GS-486) job | If seeking TWS Wildlife Biologist Certification |
| NRS 304 Field Ornithology (3) | X[1] | X[1] |
| NRS 324 Mammalogy (4) | X[1] | X[1] |
| NRS 401: Foundations in Restoration Ecology (4) | | |
| NRS 402: Wildlife Biometrics (3) | | X[2] |
| NRS 403: Wildlife Biometrics Field Investigations (1) | | |
| NRS 406: Wetland Wildlife Management (4) | | |
| NRS 407: Endangered Species Conservation (3) | | |
| NRS 409 Concepts in GIS and Remote Sensing (4) | | |
| NRS 410: Fundamentals of GIS (3) | | |
| NRS 415: Remote Sensing of the Environment (3) | | |
| NRS 417 Herpetology (4) | X[1] | X[1] |
| NRS 419: Field experience in Herpetology (1) | | |
| NRS 491/492: NRS special projects (1-3) [3] | | |
| NRS 497 Cooperative Internship (6 or 12) [3] | | |
| NRS 423: Wetland Ecology (4) | | |
| NRS 475: Coral reef Conservation (3) | | |
| NRS 516 Remote Sensing in Natural Resources Mapping (3) | | X[2] |
| NRS 520: Quantitative Tech. in Natural Resource Research (3) | | X[2] |
| NRS 522 Advanced GIS Analysis Of Environmental Data (3) | | X[2] |
| NRS 533: Landscape Pattern And Change (3) | | |
| BIO 366: Vertebrate Biology (3) | X[1] | X[1] |
| BIO 455: Marine Ecology (3) | | |
| BIO 467 Animal Behavior (3) | X[1] | X[1] |
| BIO 480: Community Ecology (3) | | |
| BIO 485: Salt Marsh Ecology (4) | | |
| *CSC 201: Introduction to Computer Programming (4) *B3* | | X[2] |
| *MTH 141: Introductory Calculus With Analytic Geometry (4) *A1,B3* | | X[2] |

**[1] Select two of these five courses**

**[2] Select one of these six courses (NRS 402 recommended)**

**[3] Maximum of 10 credits of experiential learning courses (letter grade courses only) can count for concentration credits**

**Note: Courses marked with an asterisk (*) can be used to satisfy major and general education requirements.**

# THE UNIVERSITY OF RHODE ISLAND

**Wildlife and Conservation Biology**
**EL_WCB_BS**
120 Credits Total
**web.uri.edu/nrs/**

Student: _____
Student ID: _____
Advisor: _____

**General Education Guidelines:** General education is 40 credits. Each of the twelve outcomes (A1-D1) must be met by at least 3 single course may meet more than one outcome, but cannot be double counted towards the 40 credit total. At least one course mus Grand Challenge (G). No more than twelve credits can have the same course code (note- HPR courses may have more than 12 cr General education courses may also be used to meet requirements of the major or minor when appropriate.

**LIST COURSES THAT MEET GENERAL EDUCATION:**

| General Education Credit Count | | | | | | |
|---|---|---|---|---|---|---|
| At least 40 credits, no more than 12 credits with the same course code | | | | | | |
| **Course** | **Credit** | **Grade** | | **Course** | **Credit** | **Grade** |
| *NRS100 | 3 | | | | | |
| *BIO101 | 3 | | | | | |
| *BIO103 | 1 | | | | | |
| *BIO102 | 3 | | | | | |
| *BIO104 | 1 | | | | | |
| *CHM103 | 3 | | | | | |
| *MTH131 | 3 | | | | | |
| *EEC105 | 3 | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | Total Gen Ed Credits | | |
| | | | | | | |

**NOTE: BECAUSE MOST COURSES MEET MORE THAN ONE OUTCOME, YOUR OUTCOME AUDIT MIGHT BE COMPLETED BEFORE YOU REACH YOUR 40 CREDITS. HOWEVER, YOU MUST STILL COMPLETE 40 CREDITS OF GENERAL EDUCATION**

*course fulfills general education and a major requirement

**LIST COURSE AS EACH OUTCOME IS MET:**

| General Education Outcome Audit | Co |
|---|---|
| **KNOWLEDGE** | |
| **A1.** STEM | *NR |
| **A2.** Social & Behavioral Sciences | *EE |
| **A3.** Humanities | |
| **A4.** Arts & Design | |
| **COMPETENCIES** | |
| **B1.** Write effectively | |
| **B2.** Communicate effectively | |
| **B3.** Mathematical, statistical, or computational strategies | *MT |
| **B4.** Information literacy | |
| **RESPONSIBILITIES** | |
| **C1.** Civic knowledge & responsibilities | |
| **C2.** Global responsibilities | |
| **C3.** Diversity & Inclusion | |
| **INTEGRATE & APPLY** | |
| **D1.** Ability to synthesize | |
| **GRAND CHALLENGE** | |
| **G.** At least one course of your 40 credits is an approved "G" course (NRS 234G recommended) | |

**Transfer out of University College for Academic Success Requirement:** Must have completed at least 30 credits with a minim cumulative 2.0 GPA, as well as a grade of C or better in BIO 101, 102, 103, 104, and NRS 100.

**Advising Notes:** _____

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**Effective: 2017 - 2018**

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*B.S. Wildlife & Conservation Biology - Effective Fall 2017*
*College of the Environment and Life Sciences*

## WILDLIFE & CONSERVATION BIOLOGY APPROVED SUPPORTING ELECTIVES :

At least 24 credits taken from the following categories, of which **at least 6 credits** must be NRS courses, based on certification guidelines established by The Wildlife Society and federal government. Approved courses may change with availability or with approval of your advisor.

| ***Botany (3 credits)[1,2]*** |
|---|
| NRS 301 Forest Science (3) |
| NRS 423 Wetland Ecology (4) |
| NRS 425 Wetlands Field Investigations (1) |
| NRS 445 Invasive Species (4) |
| NRS 485 Salt Marsh Ecology (4) |
| BIO 311 Plant Structure & Development (4) |
| BIO 321 Plant Diversity (4) |
| BIO 346 Plant Physiology (3) |
| BIO 352 General Genetics (4) |
| BIO 365 Biology of Algae (4) |
| BIO 418 Ecology of Marine Plants (4) |
| BIO 454 Genetics Laboratory (3) |
| ***Zoology (6 credits)[2]*** |
| NRS 304 Field Ornithology (3) |
| NRS 324 Mammalogy (4) |
| NRS 417 Herpetology (4) |
| NRS 419 Field Experience in Herpetology (1) |
| NRS 505 Biology & Man.Migratory Birds (2) |
| NRS 534 Ecol. Fragmented Landscapes (2) |
| NRS 538 Physiological Ecology (3) |
| BIO 201 General Animal Physiology (3) |
| BIO 272 Intro Evolution (4 ) |
| BIO 286 Humans, Insects, and Disease (3) |
| BIO 302 Animal Development (4) |
| BIO 354 Invert. Zoology (4) |
| BIO 355 Marine Invert. of Southern N.E. (3) |

| ***Resource Policy, Administration, or Land Use Planning (3 credits)[2]*** |
|---|
| CPL 434 Intro. to Environmental Law (3) |
| *MAF 100 Human Use Marine Environment (3) *A2, C1* |
| MAF 120 New England & The Sea (3) |
| *MAF 220 Intro. Marine & Coastal Law (3) *A2, C1* |
| MAF 312 Politics of the Ocean (3) |
| MAF 461 Coastal Zone Management (3) |
| MAF 471 Island Ecosystem Management (3) |
| MAF 484 Env. Anal. & Policy Coastal Mgt. (3) |
| *NRS/GEO/EEC 234G Introduction to Water Resources (3) *A1* |
| *NRS 300 Issues in Global Sustain.Dev. (3) *C2, A2* |
| NRS 401 Foundations in Restoration Ecology (4) |
| NRS 424 Wetlands & Land Use (4) |
| NRS 450 Soil Conservation & Land Use (3) |
| ***Communications (6 credits)[2]*** |
| *JOR 110 Introduction to Mass Media (3) *A3, C1* |
| JOR 220 Media Writing (3) |
| JOR/PRS 340 Public Relations (3) |
| COM 202 Public Speaking (3) |
| COM 208 Argumentation and Debate (3) |
| COM 210 Persuasion: The Rhetoric of Influ. (3) |
| COM 251 Small Group Communication (3) |
| COM 310 Topics in Communication (3) |
| *WRT 201 Argument. & Persuasive Texts (3) *B1, B4* |
| WRT 235 Writing in Electronic Env. (4) |
| *WRT 332 Technical Writing (3) *B1, B2* |
| *WRT 334 Science Writing (3) *B1, B2* |
| WRT 533 Grad. Writing in Life Sciences (3) |

| ***Experiential Learning Courses*** |
|---|
| Up to 12 credits of Experiential Learning Courses may be taken. A maximum of 10 credits of exp. learning courses may be used for concentration credit (letter grade only) and up to 12 credits of exp. learning courses may be used as supporting lectives (letter grade or S/U) |
| NRS 395 Research Apprenticeship (1-3) **S/U only** |
| NRS 397 Internship (1-6) **S/U only** |
| NRS 491/492: NRS special projects (1-3) |
| NRS 495 Advanced Apprenticeship (3) **S/U only** |
| NRS 497 Cooperative Internship (6 or 12) |
| NRS 498 Teaching Practicum (1-3) **S/U only** |

**[1] Select if considering federal biologist (GS-486) position**

**[2] Select courses from these lists (Policy, Zoology, Communications if considering TWS Wildlife Certification**

**Note: Courses marked with an asterisk (*) can be used to satsify major and general education requirements.**

# B.S. Wildlife & Conservation Biology - Effective Fall 2018

## *College of the Environment and Life Sciences*

## SAMPLE Four-Year Plan

### Freshman Year *Fall* Semester

| Course Code | Description | Cr |
|---|---|---|
| *NRS 100 | Natural Resource Conservation | 3 |
| NRS 101 | Freshman Inquiry into NRS | 1 |
| URI 101 | Planning for Academic Success | 1 |
| *BIO 101/103 | Principles of Biology I/ Lab | 4 |
| *MTH103, 111, or 131 | Applied Precalculus, Precalculus, or Applied Calculus (based on placement) | 3 |
| | *General Education Course | 3-4 |
| | | **15-16** |

### Freshman Year *Spring* Semester

| Course Code | Description | Cr |
|---|---|---|
| NRS 223 | Conservation Biology | 4 |
| *BIO 102/104 | Principles of Biology II/ Lab | 4 |
| *CHM 103/105 | Introductory Chemistry/ Lab | 4 |
| *MTH 131, or *General Ed. | Applied Calculus, or General Education Course | 3-4 |
| | | |
| | | |
| | | **15-16** |

Note: MTH131 is required for WCB majors. Math placement determines if a prerequisite is needed (MTH103 or 111).

**Year 1 Milestones: Complete 30 credits with a cumulative gpa of 2.0 or higher. Transfer from UC to CELS. NRS100 & NRS223 (offered fall and spring). Grades of C or higher required in BIO101, 102, 103, 104, NRS100, 223. Consider a summer internship.**

### Sophomore Year *Fall* Semester

| Course Code | Description | Cr |
|---|---|---|
| NRS 200 | Seminar in Natural Resources | 1 |
| *EEC 105 | Intro to Resource Economics | 3 |
| BIO 262 | Introductory Ecology | 4 |
| NRS 212 | Intro to Soil Science | 4 |
| | *General Education Course | 3-4 |
| | | **15-16** |

### Sophomore Year *Spring* Semester

| Course Code | Description | Cr |
|---|---|---|
| CHM 124/126 | Intro. to Organic Chemistry/Lab | 4 |
| NRS 305 | Prin. Wildlife Management | 3 |
| STA 308 | Introductory Statistics | 4 |
| | Free Elective | 3 |
| | *General Education | 3 |
| | | **15-17** |

**Year 2 Milestones: Complete 60 credits with a cumulative gpa of 2.0 or higher. NRS200 & NRS212 (offered fall only), NRS305 (offered spring only). BIO262 should be completed sophomore year. Meet with faculty advisor to plan jr/sr year courses and discuss internship/research/study abroad opportunities.**

### Junior Year *Fall* Semester

| Course Code | Description | Cr |
|---|---|---|
| BIO 323 | Field Botany & Taxonomy | 4 |
| NRS 304 or BIO 366 | Field Ornithology Vertebrate Biology | 3 |
| | *General Education Course | 3 |
| | Free Elective | 3 |
| | NRS Supporting Elective | 3-4 |
| | | **16-17** |

### Junior Year *Spring* Semester

| Course Code | Description | Cr |
|---|---|---|
| NRS 309 | Wildlife Management Tech. | 3 |
| NRS 324 | Mammology | 4 |
| | NRS Supporting Elective | 3 |
| | *General Education Course | 3 |
| BIO 467 | Animal Behavior | 3 |
| | | **16-17** |

**Year 3 Milestones: Complete 90 credits with a cumulative gpa of 2.0 or higher. BIO323 (offered fall & summer only), NRS 309 (offered spring only). Meet with faculty advisor to plan senior year courses, discuss internship/research opportunities, and prepare Intent to Graduate Application for fall submission.**

### Senior Year *Fall* Semester

| Course Code | Description | Cr |
|---|---|---|
| NRS 304 or BIO 366 | Field Ornithology Vertebrate Biology | 3 |
| | NRS Supporting Elective | 3-4 |
| | NRS Supporting Elective | 3-4 |
| | Free Elective | 3 |
| | NRS Concentration | 3-4 |
| | | **15-17** |

### Senior Year *Spring* Semester

| Course Code | Description | Cr |
|---|---|---|
| NRS 406 or NRS 407 | Wetland Wildlife (4); or Nongame & Endangered Species Mgt (3) | 3-4 |
| NRS 417 | Herpetology | 4 |
| | NRS Supporting Elective | 3-4 |
| NRS 402/403 | Wildlife Biometrics Field Investigations | 4 |
| | NRS Internship | |
| | | **15-17** |

**Total Credits to Graduate = 120**

**Year 4 Milestones: Complete all remaining courses and requirements. NRS406 and 407 (offered spring only). Turn in Intent to Graduate packet fall semester. Minimum of 120 earned credits with a cumulative gpa of 2.0 or higher; and a minimum 2.0 gpa in major concentration courses.**

NOTE: Visit http://web.uri.edu/nrs/undergraduate-programs/ for a list of NRS fall & spring courses & confirm with your advisor.

**Effective: 2017 - 2018**