Course Approval Form

For approval of new courses and deletions or modifications to an existing course.

registrar.gmu.edu/facultystaff/curriculum

Action Requested:

- [X] Create new course
- [ ] Inactivate existing course
- [ ] Modify existing course (check all that apply)
  - [ ] Title
  - [ ] Credits
  - [ ] Repeat Status
  - [ ] Grade Type
  - [ ] Prereq/coreq
  - [ ] Schedule Type
  - [ ] Restrictions
  - [ ] Other:

Course Level:

- [X] Undergraduate
- [ ] Graduate

College/School: College of Science
Department: Environmental Science & Policy
Submitted by: R. Chris Jones
Ext: 703-655-0379 **Email:** rcjones@gmu.edu

Subject Code: EVPP **Number:** 302
(Do not list multiple codes or numbers. Each course proposal must have a separate form.)

Effective Term:

- [X] Fall
- [ ] Spring
- [ ] Summer

Year 2015

Title:
Current
Banner (30 characters max including spaces): EnvSci:Biomes/HumanDim
New: Environmental Science: Biomes and Human Dimensions

Credits: (check one)

- [x] Fixed: 4 or
- [ ] Variable: to

Repeat Status: (check one)

- [x] Not Repeatable (NR)
- [ ] Repeatable within degree (RD)
- [ ] Repeatable within term (RT)

Maximum credits allowed:

Grade Mode: (check one)

- [x] Regular (A, B, C, etc.)
- [ ] Satisfactory/No Credit
- [ ] Special (A, B C, etc. +IP)

Schedule Type: (check one) LEC can include LAB or RCT

- [x] Lecture (LEC)
- [x] Lab (LAB)
- [ ] Recitation (RCT)
- [ ] Internship (INT)
- [ ] Independent Study (IND)
- [ ] Seminar (SEM)
- [ ] Studio (STU)

Prerequisite(s):
Grade of 'C' or better in EVPP 301 or permission of the instructor

Corequisite(s):

Instructional Mode:

- [x] 100% face-to-face
- [ ] Hybrid: ≤ 50% electronically delivered
- [ ] 100% electronically delivered

Restrictions Enforced by System: Major, College, Degree, Program, etc. Include Code.
Grade of 'C' or better in EVPP 301, or permission of the instructor

Are there equivalent course(s)?

- [ ] Yes
- [x] No

If yes, please list

Catalog Copy for NEW Courses Only (Consult University Catalog for models)

Description (No more than 60 words, use verb phrases and present tense)	**Notes** (List additional information for the course)
This course provides environmental science majors with the necessary background in biomes and human dimensions required for subsequent courses in the BS curriculum. The course reviews the functioning of aquatic and terrestrial biomes and human interactions with and impacts on the environment.	
Indicate number of contact hours: Hours of Lecture or Seminar per week: 3 Hours of Lab or Studio: 3	
When Offered: (check all that apply) [x] Fall [x] Summer [x] Spring	

Approval Signatures

Department Approval — 11/4/14 Date

College/School Approval — Date

If this course includes subject matter currently dealt with by any other units, the originating department must circulate this proposal for review by those units and obtain the necessary signatures prior to submission. Failure to do so will delay action on this proposal.

Unit Name	Unit Approval Name	Unit Approver's Signature	Date

For Graduate Courses Only

Graduate Council Member — Provost Office — Graduate Council Approval Date

For Registrar Office's Use Only: Banner_____ Catalog_____

revised 11/8/11

Course Proposal Submitted to the Curriculum Committee of the College of Science

1. COURSE NUMBER AND TITLE: EVPP 302 Environmental Science: Biomes and Human Dimensions

Course Prerequisites: EVPP 301 or equivalent.

Catalog Description: This course provides environmental science majors with the necessary background in biomes and human dimensions required for subsequent courses in the BS curriculum. The course reviews the functioning of aquatic and terrestrial biomes and human interactions with and impacts on the environment.

2. COURSE JUSTIFICATION:

Course Objectives:
Together with EVPP 210 and 301, this course is part of a three-semester sequence for environmental science majors which provides the basic underpinning for majors courses. Topics include introduction to human dimensions of the environment, ecosystem structure and function, water and the environment, environmental decision-making and sustainability science. After completion of the course students will have the necessary understanding of these topics to be successful in upper level ES classes.

Course Necessity: Course is needed to provide BS in Environmental Science majors with the necessary underpinning for more advanced courses in the major. It also introduces the full sweep of the degree.

Course Relationship to Existing Programs: As stated above, this course is an integral part of the BS in Environmental Science and will be required of all majors.

Course Relationship to Existing Courses: This course provides a broad introduction to topics to be developed later in the BS in Environmental Science curriculum insuring that all students have a base of information and understanding to be successful in the more advanced courses.

3. APPROVAL HISTORY:

4. SCHEDULING AND PROPOSED INSTRUCTORS:

Semester of Initial Offering: Fall 2015

Proposed Instructors: R. Christian Jones, Professor of ESP, Daniel Sklarew, Associate Professor of ESP

5. TENTATIVE SYLLABUS: Attached

EVPP 302
Environmental Science: Biomes and Human Dimensions
Lecture Syllabus
Fall 2015

Course Description and Goals: Together with EVPP 210 and 301, this course is part of a three-semester sequence for environmental science majors which provides the basic underpinning for majors courses. Topics include introduction to human dimensions of the environment, ecosystem structure and function, water and the environment, environmental decision-making and sustainability science. After completion of the course students will have the necessary understanding of these topics to be successful in upper level ES classes.

Course Content and Instructional Methods: The course consists of a coupled lecture and lab; both must be taken concurrently and your grade will depend on your performance in both venues. Below is a list of lecture topics by week. Following the lecture topics there is a lab syllabus.

Week	Topic	Readings
26-Aug	Global Climate, Temperature regimes, Water Availability	S&S: Ch. 3&4
2-Sept	Terrestrial Biomes of the World	S&S: Ch. 23, 5, 6
9-Sept	Hydrology and Watersheds; Freshwater Biomes	S&S: Ch. 3, 4, 24
16-Sept	Estuarine and Marine Biomes	S&S: Ch. 24
23-Sept	Ocean as a physical system/climate change implications	S&S: Ch. 29
30-Sept	Water Pollution: eutrophication, toxic substances, invasive species	S&S: Ch. 29
7-Oct	Ecosystem Health and Conservation Medicine	Readings from A. Aguirre et al., New Directions in Conservation Medicine
14-Oct	Energy: overview and human uses	
21-Oct	Energy: ecological impacts and policies for mitigation	
28-Oct	Solid Waste, cradle-to-grave vs. cradle-to-cradle product lifecycle analysis	
4-Nov	Air pollution	
11-Nov	Environmental Impact assessment and Strategic Environmental Assessment	
18-Nov	Environmental Decision-making and Economic Valuation	Moran: Ch. 7
25-Nov	Sustainability Science Research in the Anthropocene: your role	Moran: Ch. 8
2-Dec	Affecting Behavioral Change for Environmental Sustainability	

Text: S&S: Elements of Ecology. T.M. Smith and R.L. Smith. 8th ed. (nook rental for $75, new book $138).
Moran: Environmental Social Science. E.F. Moran. Wiley & Sons.

EVPP 302 Environmental Science for ES Majors III
Lab Syllabus

Laboratory is a required and integral part of EVPP 302. Every effort is being made to match lab work with lecture topics.

Week	Topic	Readings, References, and Assignments
1	Examining and interpreting climatic data	
2	Relating climate data to vegetation	Thornthwaite diagrams: exercise deriving them for specific regions and relating to vegetation structure (forest, grassland, etc.)
3	Delineating watersheds and examining rainfall-hydrograph relationships	Work with maps to learn delineation skills; download on-line climatic and hydrology data and conduct graphical and regression analyses
4	Stream Bioassessment Project: Least Impacted Site(s)	Field work: visit streams draining least impacted watersheds
5	Stream Bioassessment Project: More Impacted Site(s)	Field work: visit streams draining more impacted watersheds
6	Stream Bioassessment Project: Least Impacted Site(s)	Lab work: process samples and prepare data tables; learn how to analyze this data; prepare for report on project, due following week
7	Causal Chain Analysis	Apply results from stream bioassessment
*	**Fall BREAK**	
8	Ecosystem Health and Conservation Medicine	Bovine brucellosis in Greater Yellowstone Ecosystem
9	Personal energy audit	Watt-o-meter energy audit*
10	What's in your trash? Where did it come from? Where could/should it go?	Trash life-cycle analysis*
11	Design your own (demo) environmental social science study	Identify and constructively critique research questions and methods
12	Deer Management Role-Play OR How much is clean water worth?	Sklarew (2009) "Dear Management at WERC" or other SEA role-play
13	Implement your own (demo) environmental social science study	Analyze (qualitative and quantitative) data collected
14	Report out on environmental social science studies	Present results from environmental social science studies

* Each of these labs could model how environmental social science research is conducted (research questions and methods to match them), analyzed (including mixed quantitative and qualitative methods) and presented/reported.

Grading (lecture and lab):	3 mid term exams:	100 pts each
	Cumulative Final:	50 pts
	Lab participation:	50 pts
	Lab Assignments:	100 pts

Any student missing a graded assignment (including tests) for health reasons or other extenuating circumstances may be required to submit at doctor's statement or other appropriate documentation to avoid a zero for that assignment.

Disability Statement: If you are a student with a disability and you need academic accommodations, please see the instructor and contact the Office of Disability Resources at 703-993-2474. All academic accommodations must be arranged through that office.

Honor Code Statement: George Mason University has an Honor Code, which requires all members of this community to maintain the highest standards of academic honesty and integrity. Cheating, plagiarism, lying, and stealing are prohibited by the code. It is the responsibility of all members of the community, both students and teachers, to report violations of the code.

Enrollment Statement: Students are responsible for verifying their enrollment in this class. Schedule adjustments must be made by the deadlines posted in the Schedule of Classes.