APPLIED ECOLOGY AND ECOSYSTEM MANAGEMENT

EVPP 677-001 (3.0 credits), SPRING 2016 - Tues. 4:30-7:10pm in Innovation Hall 328

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Goals

This course aims to create and empower a cadre of applied ecology practitioners and innovators.

Through this course, students will gain experience in applying their ecological expertise to understand and address real world problems and to create ecologically-beneficial innovations, including applications to ecosytem-based management of natural resources. Do to the advanced applications focus of this course, there is one **important** pre-requisite: "Fundamentals of Ecology" [BIOL 308, EVPP 607 or equivalent].

By the end of this course, students should be able:

- 1. <u>Recognize means for and challenges in applying ecology to environmental problems.</u> Demonstrate familiarity with the variegated ways in which ecological knowledge can be applied to environmental problem-solving and environmental management at various spatiotemporal and organizational scales, as well as the challenges in doing so effectively.
- 2. <u>Practice applied ecological problem solving.</u> Use an applied ecology approach to identify, assess and address a set of critical and interesting environmental and ecosystem management questions.
- 3. <u>Practice adaptive ecosystem-based management.</u> Examine and practice aspects of the process of adaptive ecosystem-based management.
- 4. <u>Create ecological innovations</u> Use applied ecology knowledge to develop an innovative product or service which addresses one or more important environmental problems and/or exploits ecological concepts to improve our environment.
- 5. <u>Produce an ecological business plan or publishable applied ecology research paper:</u> Demonstrate critical thinking required to produce a "triple-bottom line" ecological business plan or a scientific paper ready for peer review.

As well as demonstrate success in achieving personal learning objectives, as articulated on the first day of the course.

Approach

Unlike typical graduate lecture courses, this course will be organized and delivered as a series of participatory seminars and workshop sessions. As a result, the syllabus may be augmented and adjusted as student interests and expertise are revealed. To keep on track, please refer to the schedule, which will link to session plans and assignments at least 1 week in advance.

Course Web Site(s)

Mason's Blackboard site [http://mymasonportal.gmu.edu] provides you access to grades and link to this activities site [https://evpp677sp15.pbworks.com]. Update-to-date syllabus, schedule, all assignments (including deadlines), submissions and professor's presentations and notes are posted to this activities site. Our shared bibliography is also web-accessible [http://www.zotero.org/groups/applied ecology].

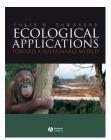
Recommended Text and Related Materials

Primary texts:



E.I. Newman. 2000. Applied Ecology and Environmental Management, 2nd Ed. Blackwell Science. ISBN 9780632042654

(Compare prices at <u>directtextbook.com</u>, purchase from <u>GMU Bookstore</u> or <u>amazon.com</u>, obtain as <u>e-book</u> from publisher, rent from <u>chegg.com</u> or <u>bookrenter.com</u>, or even borrow from Johnson Center Library reserve.)



C.R. Townsend. 2007. Ecological Applications: Toward a Sustainable World. Wiley Blackwell. ISBN 978140513693 (Available from same sources, as well as <u>e-book</u> from publisher.)

For those who seek an ecology refresher, potential supplemental texts include:

P. Calow (ed). 1999. The Encyclopedia of Ecology & Environmental Management. Wiley-Blackwell. ISBN-10: 0632055464 | ISBN-13: 978-0632055463

M. Molles. 2006. Ecology: Concepts and applications. 3rdEd. McGraw Hill. ISBN-10: 0073309761 | ISBN-13: 978-0073309767

R.L. Smith & T.M. Smith. 2008. Elements of Ecology. 7thEd. Benjamin Cummings. ISBN-10: 0805348301 | ISBN-13: 9780805348309

Other Materials

Lecture notes and other materials created specifically for the class will be put on the course web site for on-line access and download as promptly as feasible. (If you have any trouble accessing the site, please inform your professor promptly.) Other pertinent readings will be incorporated into the syllabus above, with references and links included in our class Zotero Web site. Students may also find articles from the following professional sources to be particularly useful:

Journals	Databases
BMC Ecology Chinese Journal of Applied Ecology Ecological Applications and Ecology (ESA)	EBSCOhost <u>GreenFile</u> and <u>Environment Complete</u> * (1940s-) Google Books and <u>Google Scholar</u> library.gmu.edu
• Ecology and Society	* Requires GMU password.
 <u>Journal of Applied Ecology</u> and <u>Journal of</u> 	[Please feel free to recommend others in the comments area
Ecology (BES)	below]
• West African Journal of Applied Ecology	

Performance Assessment

Students scores for the course will be based on performance on the following activities:

1. 40% = Assigned Weekly Activities (10 x 4 pts; if 11th offered, lowest score will be dropped), e.g.,

Assignment Scoring Criteria	Exceeds Expectations	Meets Expectations (3)	Only Partially Meets Expectations	Does NOT Meet Expectations
	(4)		(2)	(1)
Assignment 01. Ecological Scenarios				
<u>Assignment 2</u> . Ecosystem Services				
Assignment 3. Ecological Restoration				

Participants are expected to submit weekly assignments related to the text and topics of the following week. A total of 11 weekly assignments are expected, with the lowest grade dropped. Students are also encouraged to post or bring current newspaper/magazine articles that they find, related to applied ecology and ecosystem management, into the class for discussion. Assignments are due to be

posted on our web site 24 hours before the next class begins, else marked down by 1 point per week.

- 2. 20% = Semester Project Triple Bottom Line Business Plan or Publishable Applied Ecology Research Paper see semester project rubric.
- 3. 32% = Two [Non-Cumulative] Half-Semester Take Home Exams/Evaluations (4 questions each x 4 pts/question). These will be in a written, short answer essay format. These will cover lecture, textbook and electronic information (in various formats), as well as other students' contributions to our course, and may require independent research of recent ecological papers and articles. Make-ups will not be given except in exceptional circumstances as agreed prior to the exam date. Missed evaluations will be scored as zero.
- 4. **4**% = **Annotated References** Each student is required to post at least 1 external, reference from a peer-reviewed professional source per month, 4 in all [each focusing on a different session). Students should provide a one-paragraph reflection that summarizes the relevance of the paper to the topic in the "notes" section of their Zotero record for that reference, starting with their initials. (At the end of the semester, you will submit your 4 record annotated bibliography as an email.) Our combined library will be accessible indefinitely at http://www.zotero.org/groups/applied_ecology.

Annotated Reference Scoring Criteria	Limited evidence (0.5 points)	Clear Evidence (1.0 points)
Reference is from reputable professional sources (journals, proceedings, etc.), posted in timely fashion with descriptive summary by the due date (i.e., sessions 03, 07, 11 and 15)		

Participation: You can only refine the skills and knowledge to apply ecology in your careers and studies if you practice, and that practice requires participation. For this course, participation is both face-to-face and on-line via our course site. Those who actively contribute to course discussion, share their perspectives, insights and inquiries will receive credit which reflects their involvement. By contrast, those who remain unknown and unheard/unread from in either medium will not receive full credit. In the event that your outside career, illness or immovable external obligations prevents you from either attending class or participating in weekly assignments, it is your obligation to make prior arrangements to ensure you stay current and involved in this fast-paced course. Failure to do so will certainly reduce the credit you are eligible to receive for participation, as we as the benefits you derive from this course.

Grading Procedure

The final grade is based on your performance out of the possible 100 points:

Grade	Points
A - Exceptional/Passing	90.001 - 100
B - Satisfactory/Passing	80.001 - 90
C - Unsatisfactory/Passing	70.001 - 80
F - Unsatisfactory/Failing	0 - 70

In the past, roughly half of the students in this course have received A's and half B's, however a few have also received a C. The professor is not required, but reserves the right to provide + or - to grades to provide further clarification regarding the quality of students' work.

Disability Accommodation

If you are a student with a disability and you need academic accommodations, please contact the Disability Resource Center (DRC) at 703-993-2474. All academic accommodations must be arranged through the DRC.

Honor Code

Adherence to the GMU Honor Code is expected of all students, specifically:

Members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work.

In all assignments and communications, plagiarism will not be tolerated. This applies equally to oral and written communications in the context of any evaluated (graded) course assignments. In presenting quotes, paraphrasing statements or logical arguments from others in any medium (on-line, oral or written), students should properly cite their source. Results of team work should only be attributed to those who directly contribute to the final product (even if more than those people were designated as being part of the team). Any or all members of a student team may be held accountable for any Honor Code violations in their shared work. Any public usage of original material from this course (e.g., presentations, images, etc.) without explicit permission of its creator shall be construed as stealing. As stated in the Honor Code, infractions may result in invalidated credit for dishonorable work and lowered grade, including failure from the class, suspension or dismissal. Inquiries for clarification from the professor are welcome. Thank you in advance for your conscious attention to these issues.

Absenteeism Policy

As adults with outside responsibilities, many of you may have to miss a class occasionally during the semester. If you are unable to attend class in person, please make arrangements in advance [if possible], so that the professor can try to make accommodations for your participation in real-time via skype, Google hangouts, etc. ¹ Or, if you will not be able to participate in that way, please contact your professor as soon as possible to arrange means to ensure you can still learn the material and/or obtain full credit for any learning activities.

Due to the exceptional threat posed by **pandemic flu**, etc., students who promptly inform the professor of their flu symptoms (see <u>next underlined link</u> hereafter) are then *strongly urged* to **stay at home**, per <u>CDC direction</u>. **Do <u>not</u> come to class** until 24 hours after any $[\ge 100^{\circ}F]$ fever passed without medication. Insofar as students adhere to the GMU Honor Code when declaring their flu-related need to work from home, they will be eligible to receive reasonable accommodation for their illness, as deemed appropriate by the professor.

About your Instructor

Professor: "Dr. Dann" (Sklarew)	Teaching Assistant:	
Associate Professor of Applied Ecology and Sustainability,		
Dept. of Environmental Science and Policy		
Associate Director, Potomac Environmental Research and Education Center (PEREC)		
Office hours: Tu 3-4pm and Fr 3-4pm in DK3018, or by appointment		
Email: dsklarew@gmu.edu (best way to contact him)		
Website: http://mason.gmu.edu/~dsklarew		
Skype Me!		
Skype: (jendann)		
Phone number: (703) 993-2012 or (703) 835-9287 (leave message; better yet, try email first)		
111011c Humber. (703) 333 2012 01 (703) 033 3207 (leave message, better yet, try chian mst)		
	I	
Number of visits to this page: 55		
Most recent visitors:		
• <u>Dr. Dann</u> (you) now		
• <u>bradley petru</u> 6 hrs ago		
Andy Gronan 1 day ago		
Footnotes		
1. Note: A free account must be set-up in advance in order to use either Skype or Hangouts. ▲		
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