### Course Approval Form

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

**College/School:** COS  
**Submitted by:** ECM Parsons

**Subject Code:** EVPP  
**Number:** 529  
**Effective Term:**
- [X] Fall
- [X] Spring  
**Year:** 2016

**Title:**
**Banner** (30 characters max w/ spaces) Environmental & Conservation Science Communication Techniques

**Credits:**
- [X] Fixed
- [ ] Variable
- [ ] Repeat Status:
  - Not Repeatable (NR)
  - Repeatable within degree (RD)
  - Repeatable within term (RT)

**Grade Mode:**
- [X] Regular (A, B, C, etc.)
- [ ] Satisfactory/No Credit
- [ ] Special (A, B C, etc. +IP)

**Schedule Type:**
- [X] Lecture (LEC)
- [ ] Recitation (RCT)
- [ ] Lab (LAB)
- [ ] Seminar (SEM)
- [ ] Internship (INT)

**Prerequisite(s):**

**Corequisite(s):**

**Restrictions Enforced by System:** Major, College, Degree, Program, etc. (include code)

**Fulfills Mason Core Req?** (undergrad only)
- [ ] Currently fulfills requirement
- [ ] Submission in progress

**Instructional Mode:**
- [X] 100% face-to-face
- [ ] Hybrid: ≤ 50% electronically delivered
- [ ] 100% electronically delivered

**Equivalencies:** (check only as applicable)
- [X] YES, course is 100% equivalent to: EVPP 429
- [ ] YES, course is being renumbered
- [ ] to will replace the following:

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

**Description** (No more than 60 words, use verb phrases and present tense)
Communicating environmental and conservation science is inherently challenging. The aim of this course is to expose students to the multiple ways environmental science and conservation issues can be communicated. Such exposure will be made both through a theoretical approach (science communication literature), as well as through hands-on activities and assignments.

**Notes** (List additional information for the course)

**Indicate number of contact hours:**
- [X] Hours of Lecture or Seminar per week: 3

**When Offered:**
- [X] Spring
- [ ] Fall
- [ ] Summer

**Approval Signatures**

**Department Approval**  
**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**

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For Registrar Office’s Use Only: Banner_________________________ Catalog_________________________  
revised 6/22/15
FOR ALL COURSES (required)
Course Number and Title: EVPP 529 Environmental Science Communication

Date of Departmental Approval:

FOR NEW COURSES (required if creating a new course)

- Reason for the New Course: There is an environmental science communication crisis. One can simply see this in policy makers and the general public by the proportion that deny the existence of climate change. This course provides students taking a graduate degree (MS or PhD) in environmental science and policy with the theoretical and practical knowledge to better communicate environmental science to target audiences whether these audiences are academics, policy makers or members of the general public.

- Relationship to Existing Programs: This course fits into the MS and PhD in environmental science and policy and The course also fits well as an elective for the upcoming science communications graduate certificate.

- Relationship to Existing Courses: There are several courses on science communication that are complimentary to this class (e.g. COMM 639 Science communication and COMM 642 Science and the public) but there is minimal overlap in the content and this course has a unique concentration on conservation issues and the science communication class is aimed at physics/chemistry/engineering students rather than environmental students. There has been a recent COMM special topics class “Environmental Communication” (COMM 433) which again is complimentary to this class as it covers different environmental issues and is more theoretical, whereas this class has various activities and applied projects.

- The course is crosslisted with EVPP 429 (environmental science communication) and although both seniors and graduate students partake identical lectures and assignments, graduate students will be graded under a different rubric, level and standard to undergraduate students. Moreover allocation of points for assignments are different for graduate students and there is an additional, substantive, graduate assignment.

- Semester of Initial Offering: Spring 2016

- Proposed Instructors: Chris Parsons & Jenell Walsh-Thomas

- Insert Tentative Syllabus Below (see attached)
EVPP 429 / 529 Environmental Science Communication
Spring {Year}
{Date} 4:30 to 7:10PM
{Location}

Instructors:

Chris Parsons
Dept. of Environmental Science & Policy
David King Hall 3033
ecm-parsons@earthlink.net

Jenell M. Walsh-Thomas
Dept. of Environmental Science & Policy / Center for Climate Change Communication
Research Hall 256C
jwalshth@masonlive.gmu.edu

Objectives:

Communicating science is inherently challenging whether it is in academia (peer-reviewed journals, in the classroom, conferences, etc.), in the public policy realm, or to the general publics. Such challenges make it all the more important to examine the current state of science communication and the many avenues that are available for such communication. Additionally, encouraging both professional and budding scientists alike to actively explore the opportunities and issues of communicating scientific work is imperative. The aim of this course will be to expose undergraduate students to the multiple ways environmental science can be communicated. Such exposure will be made both through a theoretical approach by examining available and relevant science communication literature, as well as through practical, hands-on activities and assignments. Components that will be included to make the course well rounded are: academic literature, “learning by doing” activities, and a final project. This course will incorporate student-led presentations, hands-on projects, discussions and participant critiques.

Structure:

Theoretical and practical frameworks will be covered. Course content and discussions will be centered on:

- The role communication plays in disseminating scientific information and knowledge (what is expert vs. lay knowledge)
- Understanding how communicated information is processed (experiential vs. analytical)
- How to use communication techniques which insure the information is well received
- Identify, compare, and contrast communication strategies to engage with the public about science and decision making
- How informed decision making is promoted through literacy, education, and citizen science
- How different channels facilitate engagement and communication
Using communication and engagement to affect policy change pertaining to environmental issues (and other areas of science such as health, technology and risk assessment)

What best practices are suggested, can be leveraged, or are used for communicating with different audiences (scientist to scientist, scientist to public, public to scientist)

Case studies, which will be shared to provide examples of public engagement and communication

Message creation: simple, clear messages repeated often by a variety of trusted sources

Practice, practice, practice! Improving environmental science communication takes a lot of practice and refinement. Readings and theories will be applied to real-world communication scenarios

Class crosslisting

The undergraduate class EVPP 429 and the graduate class EVPP 529 co-meet. Although the courses have largely the same lecture material, undergraduate students and graduate students are graded separately to a different rubric and standard. Some assignments have different contributions to the final grade depending on whether students are undergraduates or graduate students. Moreover, graduate students have an additional assignment.

Topics:

- Peer-to-peer communication
- Norms of science
- Science & politics
- Science & the media
- Science & the public
- Specific environmental science issues:
  - Climate change
  - Fracking
  - Sustainability
  - Biodiversity
  - Pollution (air, soil, water quality)
  - Energy (renewable/nonrenewable)
  - Environmental education

Assignments (in & out of class):

- 5% - Elevator speech
- 10% - Press release on an environmental science issue
- Undergraduate 10%; Graduate 5% - Letter to the editor
- Undergraduate 10%; Graduate 5% - Interview
- 10% - Environmental science outreach materials
- 5% - Social media: Twitter, Facebook micro-blog post on
- Undergraduate 20% (10% each); Graduate 10% (5% each)- Two Reflection papers
Only 1 can be on a selected documentary
- 2 - 3 pages in length for undergraduate students; 3-4 pages for graduate students
- Undergraduate 30%; Graduate 25% - Final presentation
- Using the principles from Made to Stick and referencing other literature, design and articulate an informational campaign for an environmental issue of student’s choice (depending on class size, possibly complete in pairs)

**Graduate students have an additional science-writing assignment:**
- Graduate 20% (10% each) - Write two articles on environmental science topics in the format of a well-known science blog (e.g. Southern Fried Science) or science magazine format (e.g. Nature News, Conservation Magazine or The Washington Post Science & Health section) (1000-1500 words each). One of the articles can be on the preliminary results of the student’s graduate research, but this is not required.

**Required Textbook & Readings:**

We will supplement these readings with journal articles (to be posted on Blackboard), DVD videos, and other media. All required journal articles, etc. are listed in the course schedule.

**Suggested/Optional Literature:**
- **Books**

- **Peer reviewed literature – see list at the end of the syllabus (potentially helpful for citations in final project)**

**Suggested Content to Review throughout the Semester:**
**Some content that is presented in the following blogs may help you with ideas for the final project.**
- **Blogs**
you.html?utm_source=tny&utm_campaign=generalsocial&utm_medium=facebook
- Radio/Podcasts (i.e. Science Friday, StartTalk Radio, Science Magazine)
## Course Schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic(s)</th>
<th>Readings (&amp; other media) for Discussion</th>
<th>Assignments Due &amp; Optional Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 1</strong>&lt;br&gt;1/20</td>
<td><strong>Topic 1: Introduction &amp; Course Overview</strong>&lt;br&gt;➢ Brainstorm: What do you know about (a) environmental issues and (b) how are they communicated?&lt;br&gt;➢ Science communication&lt;br&gt;Science communication overview</td>
<td>Wikipedia - Norms of Science – the &quot;Mertonian&quot; approach</td>
<td></td>
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<tr>
<td></td>
<td><strong>Topic 4: Mediums of Communication</strong>&lt;br&gt;➢ TV/Radio/Film/Documentary</td>
<td>McComas, K., Shanahan, J., &amp; Butler, J. (2001). Environmental content in prime-time network TV's non news entertainment and fictional programs. Society and</td>
<td></td>
</tr>
</tbody>
</table>
| Week 3 2/3 | Topic 5: Strategic Communication Planning Process  
“Simple, clear messages repeated often by a variety of trusted sources.” | Topic 6: Strategic Communication Planning Process  
Made to Stick: Intro  
Made to Stick: Chapter 1  
Bales (2004) Communications for Social Good |
| **Week 4 2/10** | Topic 7: Media Portrayal of Environmental Science  
“Climategate”  
BP oil spill | Topic 8: Media Portrayal of Environmental Science  
Popularization of science  
- The Day After Tomorrow  
- Promised Land  
- Discovery’s “Shark Week”  
- Documentaries | Discuss – Press release, newspaper, or  
|  |  |  | DUE: Reflection Paper #1 (choose 1 paper from weeks 1-3)  
Muralidharan, S. et al. (2011) The Gulf Coast oil spill: Extending the theory of image restoration discourse to the realm of social media and beyond petroleum  
<table>
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<tr>
<th><strong>Week 5</strong></th>
<th><strong>Week 6</strong></th>
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<tbody>
<tr>
<td><strong>2/17</strong></td>
<td><strong>2/24</strong></td>
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</table>

**Topic 9: Strategic Communication Planning Process**

**Knowledge about sharks increases public concern about their conservation.**

Marine Policy 56: 43-47.


**Topic 10: Public Understanding/Perception of Science, Public Participation, & Attitudes**

**Made to Stick: Chapter 2**

USGCRP (2013) 3rd National Climate Assessment: Cover Letter + Executive Summary


Research presentation: public perception of marine conservation in Scotland

**DUE: Environmental science press release**


**Topic 11: Strategic Communication Planning Process**

**Made to Stick: Chapter 3**


**DUE: Letter to the editor**

Dietz et al (2009) Household actions can provide a behavioral wedge to rapidly reduce US carbon emissions. *PNAS*
| **uncertainty** | uncertainty about global climate change. *Public Understanding of Science, 9*(2), 85-103.  
Changing Planet: Past, Present, Future Lecture 4 – Climate Change: How Do We Know We’re Not Wrong? by Naomi Oreskes, Ph.D.  
| **Discuss – Interview assignment** | **Made to Stick**: Chapter 4  
Leiserowitz et al. (2011) Politics and global warming: Democrats, Republicans, Independents & the Tea Party  
Sommerville & Hassol (2011) Communicating the science of climate change  
http://www.nytimes.com/2014/01/03/world/asia/kerry-shifts-state-department-focus-to- |
<table>
<thead>
<tr>
<th>Week 8</th>
<th>SPRING BREAK</th>
<th>SPRING BREAK</th>
<th>SPRING BREAK</th>
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<tbody>
<tr>
<td>3/10</td>
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<td>Start thinking about final project topic</td>
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**Week 9**

<table>
<thead>
<tr>
<th>Topic 15: Strategic Communication Planning Process</th>
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<tr>
<td>Topic 16: Controversial Communications: Examples &amp; Improving Communication</td>
</tr>
<tr>
<td>➢ ScienceOnline Program</td>
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<tr>
<td>➢ Social Media</td>
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</tbody>
</table>

3/17  
Discuss – research poster related project topics  
Final project outline & list of at least 5 initial sources DUE Week 11

<table>
<thead>
<tr>
<th>Made to Stick: Chapter 5</th>
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<tbody>
<tr>
<td>Climate Nexus (2012) Connecting the dots</td>
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<tr>
<th>DUE: Final project topics</th>
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<tbody>
<tr>
<td>Environmental Working Group (2011) Meat eaters guide to climate change and health</td>
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<tr>
<th>Topic 17: Strategic Communication</th>
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<tbody>
<tr>
<td>Made to Stick: Chapter 6</td>
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<p>| DUE: Research Poster – bring in examples (2-3) |</p>
<table>
<thead>
<tr>
<th>Date</th>
<th>Planning Process</th>
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<tbody>
<tr>
<td>3/24</td>
<td><strong>Topic 18:</strong> Media imagery of environmental issues</td>
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</tbody>
</table>

**Final project outline & list of at least 5 initial sources DUE next week**

*mermaid documentary*

<table>
<thead>
<tr>
<th>Topic 18</th>
<th>Media imagery of environmental issues</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Feldman et al (2011) Climate on cable</td>
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<td></td>
<td>Video clip: The legacy of Rachel Carson's Silent Spring <a href="https://www.youtube.com/watch?v=hDicpd4Ry8E">https://www.youtube.com/watch?v=hDicpd4Ry8E</a></td>
</tr>
<tr>
<td></td>
<td>Wood et al. (2012) Cognitive mapping tools</td>
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<td></td>
<td>Ferraro et al. (2011) Persistence of Treatment effects</td>
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<table>
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<tr>
<th>Week 11</th>
<th>Topic 19: Media imagery of environmental issues</th>
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<tbody>
<tr>
<td></td>
<td>DUE: Final project topics, outline &amp; initial sources</td>
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</table>
| Week 12 | 4/7 | **Topic 21:** Environmental problems & risk  
**Topic 22:** Guest Speaker – Topic: Fracking (Dr. Chris Clarke, Dept. of Communication)  
**UK podcast on fracking**  
**DUE:** Tweets & Facebook posts  
| --- | --- | --- |
| Week 13 | 4/14 | **Topic 23:** Environmental risk communication  
**Topic 24:** Guest Speaker – National Parks (Melissa Clark - graduate student in the MPA program that may be able to come in to do this guest speaker talk)  
**Set up times to meet with students during second half of Week 14 to discuss project progress**  
**DUE:** Reflection paper #2 (last day to turn in reflection paper 2 – can be turned in at any point between Weeks 5 – 14)  
John Muir, *Features of the Proposed Yosemite National Park*  
[http://www.yosemite.ca.us/john_muir_writings/features_of_the_proposed_yosemite_national_park/](http://www.yosemite.ca.us/john_muir_writings/features_of_the_proposed_yosemite_national_park/) |
| Week 14 | 4/21 | **Topic 25:** Environmental Behavior  
➢ Psychological & sociological perspectives  
**Time allocated to work on assignment in class; meet with students during second half of class to discuss projects**  
**DUE:** Reflection paper #2 (last day to turn in reflection paper 2 – can be turned in at any point between Weeks 5 – 14)  
| **Social marketing**  

**Final presentations**

*Finals week – Graduate science writing assignment DUE*

*Tuesday, May 12, 2014 11:59PM*

*Late assignments will not be accepted.*
**Suggested Peer Reviewed Literature:**


Johnson, B.B. (2012). Climate change communication: A provocative inquiry into motives,
meaning, and means. *Risk Analysis, 32*(6), 973-991.


Nisbet, M.C., & Mooney, C. Framing science. *Science, 316*(5821), 56.


