FIRST YEAR SEMINAR COURSE PROPOSAL

UNIVERSITY OF MARY WASHINGTON

Use this form to submit **FSEM 100 topics** courses for review **or** any **other existing course** that you wish to have designated to meet the first year seminar requirement.

COURSE NUMBER:	**FSEM 100**			
COURSE TITLE:	**BEAUTY AND BRAINS—WOMEN IN THE SCIENCES**			
SUBMITTED BY:	Marsha Zaidman	**DATE:**	1/19/2010	
This course proposal has the department's approval. (Put a check in the box to the right.)				**XX**

NOTE: Please view the attached Call for Proposals or visit the First-Year Seminar blog at http://firstyearsem.umwblogs.org/ to see the criteria used to evaluate courses proposed to meet the first year seminar requirement. See the report entitled "General Education Curriculum as Approved by the Faculty Senate" for additional details.

COURSE DESCRIPTION. In the space below, provide a **1-2 sentence** description of this class. The description will be entered in Banner, and will also be used in other publications about the first year seminar program (such as the "Eagle Essentials" booklet).

This course will explore the lives, accomplishments, and achievements of notable female scientists. We will focus on the events that encouraged them to choose their careers, the challenges they overcame, and their legacies.

RATIONALE. Using only the space provided in the box below, **briefly** state why this course should be approved as a first year seminar course.

This course will utilize participatory discussion-based learning. Students will be expected to read primary and secondary sources about the female scientist of the week. Classroom discussion will focus on her preparation, accomplishments, and achievements. Discussion of the challenges this scientist needed to overcome to reach her goals and whether or not present-day women still face these obstacles. To one degree or another, at this time, all of the women selected faced obstacles to their scientific work that arose simply because they were women. Students will explore present-day solutions. Selected scientists represent each of the STEM (Science, Technology, Engineering, and Math) disciplines and a variety of races and cultures. These disciplines are strongly related to and support the computing sciences.

Women and minorities are under-represented in these areas. The underlying goal is to help young women recognize their potential in these fields and consider considering continuing their studies in these fields.

Students will have several library sessions with a librarian where they will be taught how to identify and use appropriate sources. Students will also select female scientists not listed for class discussion. Students will research these other scientists, prepare papers, and make classroom presentations of their findings. Students will need to determine what differentiated these women in achieving their goals and why they persisted despite the obvious obstacles. Students will identify common threads among the struggles of these scientists. Hopefully, the course participants will come to understand that obstacles are challenges that need to be overcome rather than unyielding barriers.

SYLLABUS. *Attach a course syllabus***.**

SUBMIT this form and attached syllabus electronically as one document to Maya Mathur (mmathur@umw.edu). All submissions **must** be in electronic form.

FSEM 100 Beauty and Brains—Women in the Sciences
Marsha Zaidman

Fall 2010

Course Description:
This course will explore the lives, accomplishments, and achievements of notable female scientists. We will focus on the events that encouraged them to choose their careers, the obstacles they overcame, and their legacies.

Email, Webpage, Office Hours, and Location:
Email: marsha@umw.edu
Webpage: http://people.umw.edu/~marsha
Office: Trinkle Hall Rm. B19 (654 1319)
Office Hours: Other hours arranged by appointment.

Tuesday	**Wednesday**	**Thursday**
11:00-12:00	1:00-3:00	11:00-12:00
2:00-3:00		2:00-3:00

Course Objectives:

- To increase awareness issues that confront women considering careers in science, technology, engineering, and mathematics (STEM)
- To create excitement and interest in careers in the STEM disciplines
- To improve oral and written communication skills
- To improve research skills
- To improve critical thinking skills
- To develop an appreciation of the obstacles faced, the achievements and legacies of notable women in science

Grading:
Mid-semester Grade:
Current Average of 70-100 S, <70 U.

Final Grading Scale: (Grades will not be rounded.)
92-100 A | 89-91 A- | 87-88 B+ | 82-86 B | 79-81 B- | 77-78 C+
72-76 C | 69-71 C- | 67-68 D+ | 60-66 D | <60 F

Final Weighted Average: Midterm 25%, Final Exam 25%, Class presentations and other assignments 50%.

Course Requirements:
In order to receive a passing grade in this class a student must satisfy all of the following:
1. Take all tests and earn an average of 60 or better.
2. Successfully complete and submit all outside assignments and earn an average of 60 or better.
3. Successfully complete all presentations and earn an average of 60 or better.

Criteria for Written Assignment Evaluation:
(Students may have the Writing Center assist them with their papers.) Each assignment will be graded on content, style, and mechanics.
In general, each assignment:

- must be submitted in "typed" form.
- must exhibit accurate and relevant content
- must exhibit correct grammar and spelling
- must be properly organized
- must demonstrate clarity of expression
- must contain a properly formatted bibliography of works referenced and/or cited
- must satisfy all requirements as stipulated in the assignment

Criteria for Presentation Evaluation:
Students are required to have the Speaking Center assist them with the first and second graded presentations and may seek further assistance on subsequent presentations. Each assignment will be graded on content, structure, and delivery. Detailed criteria is available in the assignment packet.
In general, each assignment:

- must exhibit accurate and relevant content
- must be properly organized
- must demonstrate clarity of expression
- must contain a properly formatted bibliography of works referenced and/or cited
- must satisfy all requirements as stipulated in the assignment

Selecting Resources for Papers and Presentations:
Students need to be conscious of the type of resources that they use. Over-reliance on commercial websites is poor research. Published texts and articles tend to be trustworthy and are appropriate for research because the accuracy of the information presented, and the credibility and authority of the author(s), have been checked by scholars and editors before publishing. Sources from websites with .gov and .edu suffixes are generally trustworthy but take care that these sites are current. The quality of resources selected by a student has a direct bearing on the credibility of student papers and presentations. Make sure to examine multiple sources from diverse media.

Attendance:
Students are expected to attend class on a regular basis. Students are responsible for all assigned readings and materials presented in class lectures. Students should note that missing class may adversely affect their performance on course assignments and tests. Students who miss class are responsible for obtaining all materials missed.

Testing:
Midterm Thursday, October 14

Final Exam TBA

A midterm makeup will be permitted only in the case of an unavoidable absence which can be verified as legitimate. In the case of a planned absence, alternate arrangements may be made by notifying the professor at least one week in advance.

Outside Assignments:

(1) September 13 (paper) **(2) September 28 (Presentation)**
(3) October 20 (paper) **(4) November 2 (presentation)**

Note: Each written assignment must be completed by midnight on the date due and submitted during the next regularly scheduled class meeting. All late assignments earn a grade of ZERO and must be submitted anyway for the student to be eligible for a passing course grade.

Students are expected to be present on the days that they are scheduled to speak. Students who miss presentation days because of documented, unforeseen problems that prevented their attendance will be rescheduled. Students with unexcused absences will earn a grade of ZERO and will make their presentations on an alternate date for the student to be eligible for a passing course grade.

Weekly Topics:

WEEK	Topic and Assigned Reading
1 August 23	Rosalind Elsie Franklin—Pioneer Molecular Biologist
2 August 30	Dorothy Crowfoot Hodgkin—A Founder of Protein Crystallography
3 September 6	Grace Murray Hopper—Pioneer Computer Scientist
4 September 13	Sally Ride—First American Woman in Space
5 September 20	Rózsa Péter—Founder of Recursive Function Theory
6 September 27	**Presentations**
7 October 4	Mary Anning—Finder of Fossils
8 October 11	**Fall Break (October 11-12)** Roger Arliner Young—Lifelong Struggle of a Zoologist
9 October 18	Sophie Germain—Revolutionary Mathematician
10 October 25	Ada Byron, Countess of Lovelace—Analyst, Metaphysician, and Founder of Scientifc Computing
11November 1	**Presentations**
12 November 8	Emmy Noether— Creative Mathematical Genius
13 November 15	Lise Meitner —A Battle for Ultimate Truth
14 November 22	May Edward Chinn—Physician **Thanksgiving November 24-26**
15 November 29	Maria Goeppert-Mayer—Nobelist in Physics

** NOTES The material presented may be drawn from or supplemented by sources other than the text. The order of the material covered, and the topics to be covered, are subject to change at the discretion of the instructor.

Assigned readings will be selected from the following.

Mary Anning

Torrens, Hugh. 1995. "Mary Anning (1799-1847) of Lyme: 'the greatest fossilist the world ever knew'," *British Journal for the History of Science* 25:257-284.

May Edward Chinn

Diamond, Ellen Craft. 1981. "Interview with May Edward Chinn : June 27, 1979; July 13, 1979; September 12, 1979," Black Women Oral History Project, Cambridge, Mass.: Schlesinger Library, Radcliffe College.

Rosalind Elsie Franklin

Ardell, David. 1996. "Rosalind Franklin (1920-1957)" Access Excellence, About Biotech.
Sayre, Anne. 1975. *Rosalind Franklin and DNA*. New York: W.W. Norton and Company.

Sophie Germain

Bucciarelli, Louis L., and Nancy Dworsky. 1980. *Sophie Germain: An Essay in the History of the Theory of Elasticity.* Dordrecht: D. Reidel.
Dalmédico, Amy D. 1991. "Sophie Germain," *Scientific American* 265: 116-122.

Dorothy Crowfoot Hodgkin

Dodson, Guy, Jenny P. Glusker, and David Sayre (eds.). 1981. *Structural Studies on Molecules of Biological Interest: A Volume in Honour of Professor Dorothy Hodgkin.* Oxford: The Clarendon Press.
Obituary notices by Dodson, Guy (*Structure* 2: 891-893, 1994); Glusker, Jenny P. (*Protein Science* 3: 2465-2469, 1994); Glusker, Jenny P., and Margaret J. Adams (*Physics Today* 48: 80-81, 1995); Johnson, Louise N. (FRS), and David Phillips (*Nature Structural Biology* 1: 573-576, 1994); and Perutz, Max F. (*Quarterly Review of Biophysics* 27: 333-337, 1994, and *Nature* 371: 20, 1994).

Admiral Grace Murray Hopper
Obituary notices by Betts, Mitch (*Computerworld* 26: 14, 1992); Bromberg, Howard (*IEEE Software* 9: 1-3-104, 1992); Danca, Richard A. (*Federal Computing Week* 6: 26-27, 1992); Hancock, Bill (*Digital Review* 9: 40, 1992); Power, Kevin (*Government Computer News* 11: 70, 1992); Sammet, Jean E. (*Communications of the ACM* 35: 128-132, 1992), and Weiss, Eric A. (*IEEE Annals of the History of Computing* 14: 56-58, 1992).

Ada Byron, Countess of Lovelace
Baum, Joan. 1986. *The Calculating Passion of Ada Byron*. Hamden, Conn: Archon Books.
Moore, Doris Langley-Levy. 1977. *Ada, Countess of Lovelace: Byron's Legitimate Daughter*. London: J. Murray.
Toole, Betty A. (ed.). 1992. *Ada, the Enchantress of Numbers: A Selection from the Letters of Lord Byron's Daughter and her Description of the First Computer.* Mill Valley, California: Strawberry Press.
Toole, Betty A. 1996. "Lady Lovelace, an Analyst and Metaphysician," *IEEE Annals of the History of Computing* 18: 4-12.

Lise Meitner
Frisch, O.R. (ed.) 1959. *Trends in Atomic Physics: Essays Dedicated to Lise Meitner, Otto Hahn, Max von Laue on the Occasion of their 80th Birthday*. New York: Interscience.
Sime, Ruth Lewin. 1996. *Lise Meitner: A Life in Physics*. Berkeley: University of California Press.

Emmy Noether
Dick, Auguste. 1981. *Emmy Noether 1882-1935*. Translated by H.I. Blocher. Boston: Birkhauser.
Brewer, James, and Smith, Martha (eds.). 1981. *Emmy Noether: A Tribute to Her Life and Work*. New York: Marcel Dekker.

Rózsa Péter
Péter, Rózsa. (1943) 1962. *Playing with Infinity: Mathematics for Everyman.* Translated by Z. P. Dienes, Simon and Schuster; Dover Books edition, 1977.
Péter, Rózsa. 1967. *Recursive Functions*. Translated by István Földes. New York: Academic Press.
Péter, Rózsa. (1964) 1990. "Mathematics is Beautiful." Translated by Leon Harkleroad. *The Mathematical Intelligencer* 12: 58-64.

Roger Arliner Young
Manning, Kenneth R. 1989."Roger Arliner Young, Scientist," *Sage* 6: 3-7.
Manning, Kenneth R. 1983. *Black Apollo of Science: The Life of Ernest Everett Just*. New York: Oxford University Press.

Ethics and Application of the Honor Code:

Students are expected to conduct themselves in a manner consistent with the letter and spirit of the Honor Constitution. A violation of the Honor Code is a very serious matter. As always do only your own work. If others ask you for help, please refer them to their instructor. Further information on academic honesty and how they apply to Computer Science at UMW can be found on: http://rosemary.umw.edu/CSHonorCode.html

Students with Special Needs:
The **Office of Disability Services** has been designated by the University as the primary office to guide, counsel, and assist students with disabilities. If you receive services through that office and require accommodations for a class, please make an appointment with your professor as soon as possible to discuss your **approved** accommodation needs. Bring your accommodation letter with you to the appointment. Your professor will hold any information you share with him/her in the strictest confidence unless you give him/her permission to do otherwise. If you need accommodations, (note taking assistance, extended time for tests, etc) please contact the Office of Disability Services. They will require appropriate documentation of a disability. Their phone number is 540-654-1266.