

Real Communities, Real Problems, Real Solutions
An Interdisciplinary Approach

Short Term Voyage - May 2012

SEMS 2500-102: Real Communities, Real Problems, Real Solutions: An Interdisciplinary Approach

Discipline: Science, Technology, and Society

Lower Division

Faculty: Dr. Bernard Strenecky and Dr. Julie Ellis

Pre-requisites: Nine hours or more of coursework in the student's chosen discipline is recommended.

COURSE DESCRIPTION

Real problems faced by real people living in real communities usually contain both technical and non-technical elements. No single discipline can respond effectively to the complexities presented by social problems. By bringing multiple perspectives, an interdisciplinary approach can frame and solve community problems in a rich, sustainable, and satisfactory way. In this course, teams of students from diverse fields will observe and practice interdisciplinary problem-solving in their own ship-based community and in communities visited on the voyage.

The course is designed to build on each student's coursework in her or his academic major. Students will be guided to extensive experiences in group learning, reflective practices, cross-cultural communications, and student leadership. Through the use of The \$100 Solution™ model, groups of students will collaborate with community partners by utilizing small amounts of money to address community-identified needs. While engaged in the field experiences, students will develop skills related to partnership, reflection, sustainability, capacity building, and reciprocity.

COURSE OBJECTIVES

Each student enrolled in the course *Real Communities, Real Problems, Real Solutions* will learn how to do the following:

- Apply disciplinary knowledge to address problems experienced and observed in communities.
- Understand of the role that research plays in addressing community problems.
- Develop solutions that are realistic, economically feasible, environmentally sound, culturally appropriate, and ethical and that adhere to accepted health and safety standards.
- Understand that high-quality solutions should be sustainable, build capacity of the community, establish reciprocity between members of the project, and foster partnership development.
- Function within and lead interdisciplinary teams.
- Grow as a self-directed learner through verbal and written reflective processes.
- Understand the historical, social, and cultural issues affecting problem-solving in communities.
- Utilize best-known practices and procedures when addressing community-identified needs.

REQUIRED TEXTBOOK

AUTHOR: Marybeth Lima, Ph.D. and William C. Oakes, Ph.D.

TITLE: Service-Learning: Engineering in Your Community

PUBLISHER: Great Lakes Press

ISBN #: 1881018946

COST: \$39.95

<http://www.amazon.com/Service-Learning-Engineering-Marybeth-Ph-D->

TOPICAL OUTLINE OF COURSE

The first segment of the course focuses on individual problem-solving skills and tools, and those of the students' discipline. As individuals and within disciplinary groups (which we call guilds), students will engage in multiple exercises at identifying, framing and solving problems.

The community of interest during this segment of the course is the community aboard the MV Explorer, the learning community we are all in the process of creating and joining.

Guiding questions in each experience are:

- What problems do YOU see?
- What problems do THEY see?
- What solutions do YOU imagine?
- What solutions do THEY imagine?

Working within the guilds, students will interview key ship department officers with the goal of identifying the role that each department plays in the operation of the ship and the unique problems that are encountered. The guild members will also interview a representative sample of students, faculty and staff aboard the ship with the intent of determining how students, faculty and staff are experiencing and enhancing the development of our shipboard community.

The culminating activity of this segment of the course will be the creation of a document detailing how the ship is operated and managed, the role of each department in the operation of the ship and the part that faculty, staff and students play in a successful voyage. Suggestions will be developed on how the students, faculty, and staff can work with the ship's crew in creating an exemplary shipboard community.

C1 Course Introduction

- Building Successful Learning Teams (Chapter 5, Lima and Oakes)
- What is Service Learning?
- How does reflection work as a learning tool?
- Portfolio development
- The \$100 Solution™

Readings:

Textbook: Chapter 1

Cook-Benjamin, L. (2001) Portfolio Assessment: Benefits Issues of Implementation & Reflections on Its Use. Assessment Update 13 (4) 6-7.

Fersten, L. and Fernsten, J. (2005) Portfolio Assessment and Reflection: Enhancing Learning through Effective Practice. Reflective Practice 6(2) 303-309.

Cooper, D. (1998), Writing and Reflection Academic Service Learning: A Pedagogy of Action and Reflection. San Francisco: CA: Jossey-Bass. pp 47-56.

Kottkamp, R. (1990) Means for Facilitating Reflection. Education and Urban Society. 22(2) 182-203.

- C2 Developing:
 Teams
 Partnerships
 Reciprocity
 Sustainability
 Capacity

Readings:

Komives, S., Lucas N. and Mc Mahon (2007) Exploring Leadership (2nd ed.) pp. 215-246. San Francisco, CA: John Wiley and Sons.

Hill, S.E.K. (2004) Team Leadership. In P. G. Northouse (Ed.) Leadership The Theory and Practice pp. 203-225. Thousand Oaks, CA: Sage Publications

Jacoby, Barbara and Associates (2003) Building Partnerships For Service Learning pages 1-19 and 259-288. San Francisco, CA: Jossey-Bass

- C3 Interdisciplinary Problem-Solving
 Engineering perspectives
 Non-engineering perspectives
 Synergy: $1 + 1 = 3.14159$

Readings:

Textbook: Chapter 2

Tallman, I., Leik, R., Gray L. and Stafford (1993) A Theory of Problem-Solving Behavior, Social Psychology Quarterly. 56(3) 157-177

- C4 Project Management and Team Process

Readings:

Textbook: Chapter 6

- C5 Debriefing on creating an exemplary shipboard community

Shipboard Community Plan

- 1) Describe the organizational structure of the MV Explorer; how is the ship operated and managed
- 2) What are the major challenges in the operation and management of the MV Explorer
- 3) Suggestions on how students, faculty and staff can work with shipboard community on the MV Explorer

During the second segment of the course (C4-C8) students will work in multi-disciplinary project teams, preparing to implement The \$100 Solution™ in Gales Point, Belize. Each team will focus their attention on a particular aspect on the Millennium Development Goals set forth by the United Nations. Classroom activities will include advanced instruction on teamwork and leadership, best practices for community-based service-learning, the culture and history of Gales Point, the economics and technologies of Gales Point in particular and of rural Belize in general, and the philosophy and history of The \$100

Solution™.

C6 Belize

Cross-cultural understanding
History of Gales Point
Identifying needs
Developing the plan

Readings

Starti, Craig. (2001) The Art of Crossing Cultures Yarmouth, MA: Intercultural Press. Pp 1-46

Twigg, Alan (2006) Understanding Belize: A Historical Guide, Canada: Harbour Publishing

C7a Teams sharing and refining their plans for Belize

C7b The Panama Canal

History
Engineering Challenges
Social Challenges
Political Challenges
The Canal Today and Tomorrow
Challenges of Mega-Projects

Readings

McCullough, David. (1977) The Path Between the Seas, New York: Simon and Schuster. pp 403-616

C8 Debrief on Panama Canal Findings: Lessons learned

How can these lessons be used in the Belize Project?

C9 Finalize plans and prepare all materials for visit to Gales Point

The third and final segment of the course is reflective in nature. Individuals will ask and answer the questions:

- What have you learned?
- How did you feel?
- How will you use that learning in your own life and in your chosen discipline?
- How will you take this experience back to your home campus and your community there?

C10 What did we learn in Belize?

How can we utilize this learning in our professional and personal lives?

How can we use this information on our home campuses?

Addressing the UN Millennium Development Goals: How did we do in Gales Point?

How are they doing in Gales Point?

REQUIRED FIELD ASSIGNMENTS

MV Explorer

Objectives

1. to be knowledgeable of the role that life experiences and one's profession play in identifying community-based problems
2. to be able to work successfully on a disciplined-based team
3. to be able to interview community members across the community for the purpose of identifying community needs

Description

The purpose of this "field experience" is to provide students with the skills necessary for identifying community problems. Special emphasis will be placed on identifying one's personal problem-solving perspective, applying disciplinary skills to particular situations, building community partnerships and developing individual and group reflective practices.

Belize: Gales Point Manatee

Objectives

1. to be able to address community-identified needs with small amounts of money
2. to investigate community-identified problems from an interdisciplinary perspective
3. to develop skills in the management of a community-based service learning project
4. to develop skills in the evaluation of a community-based service learning project

Description

This field experience will provide students with additional experience at identifying problems in a community, within an interdisciplinary team and based on prior research around a particular topic. The purpose of this FDP is to provide students with the practical skills necessary for implementing a community-based project using The \$100 Solution™ model. Special emphasis will be placed on partnership development, reciprocity, sustainability, capacity building and reflection.

METHOD OF EVALUATION

Class attendance and participation: Attendance at all class meetings and field component activities are a requirement for this course. Participation will be assessed through personal reflections, peer review and observation of the instructor. (20% of grade)

Professional portfolio: Utilizing guidelines provided by the instructors, students will develop a professional portfolio. Your portfolio will provide an opportunity to exhibit knowledge gained in this course and will serve as a reference document for further academic pursuits. A scoring rubric will be provided that addresses how the portfolio will be evaluated. (50% of grade)

Oral presentations: During the semester, students will be required to make formal and informal oral presentations. Presentations will be assessed by the instructors, and the feedback will be provided to the presenters. (20% of grade)

A Project: Students who have elected to receive a grade of A will be required to develop, implement and report on a topic central to the study of service-learning. The topic may address a theoretical or practical issue and must be approved by the instructor. Students may work individually or in small groups. (10% of grade)

GRADING COMPONENTS AND GUIDELINES

“A” Grade:

- **OUTSTANDING** portfolio
- Successful completion of group oral presentations
- Strong \$100 SOLUTION™ project involvement
- Superior performance in **ALL** of the following:
 - group leadership and teamwork
 - community partnership
- Completion of a successful “A Project”

“B” Grade:

- **OUTSTANDING** portfolio
- Successful completion of group oral presentations
- Strong \$100 SOLUTION™ project involvement
- Superior performance in **ALL** of the following:
 - group leadership and teamwork
 - community partnership

“C” Grade:

- **Satisfactory** portfolio
- Successful completion of group oral presentations
- The \$100 SOLUTION™ project involvement
- Evidence of superior performance in **ONE** of the following:
 - group leadership and teamwork
 - community partnership

RESERVE LIBRARY LIST

AUTHOR: Janet Eyler and Dwight E. Giles
TITLE: Where's the Learning in Service-Learning?
PUBLISHER: Jossey-Bass
ISBN #: 0-7879-4483-1
DATE/EDITION: March 1999
COST: \$40

AUTHOR: Barbara Jacoby and Associates
TITLE: Building Partnerships for Service-Learning
PUBLISHER: Jossey-Bass
ISBN #: 0-7879-5890-5
COST: \$40

ELECTRONIC COURSE MATERIALS

Video and audio recordings and historical project information from Gales Point, to be provided by the instructors.

ADDITIONAL RESOURCES

Cook-Benjamin, L. (2001) **Portfolio Assessment: Benefits Issues of Implementation & Reflections on Its Use.** *Assessment Update* 13 (4) 6-7.

Cooper, D. (1998), Writing and Reflection Academic Service Learning: A Pedagogy of Action and Reflection. San Francisco: CA: Jossey-Bass. pp 47-56.

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Twigg, Alan (2006) **Understanding Belize: A Historical Guide.** Canada, Harbour

Publishing.

Portfolio Outline

Honor Code Agreement

Letter to Reviewer

Table of Contents

I. Chapter 1:

- a. How to build successful learning teams
 - i. What are the characteristics of successful teams?
 - ii. Best known practices
 - iii. Constitution- establishing roles
- b. What is Service Learning?
 - i. Definition (both official and personal)
 - ii. How is it distinguished from volunteerism?
- c. Reflective Writing
 - i. What is reflective writing?
 - ii. Why is reflective writing important?
- d. Portfolio Development
 - i. What are portfolios?
 - ii. Why is making a portfolio important?
- e. The \$100 Solution™
 - i. 5 principles
 - ii. History
 - iii. Organization
 - iv. Project Application
 - v. Project Report

II. Chapter 2:

- a. Interdisciplinary Problem Solving
 - i. Compare and Contrast monodisciplinary, multidisciplinary, and interdisciplinary problem solving.
 - ii. Strategies for building effective interdisciplinary teams
 - iii. Precepts for interdisciplinary problem solving

III. Chapter 3:

- a. Project Management
- b. Team Process

IV. Chapter 4:

- a. Shipboard Community Plan
 - i. Organizational plan
 - ii. Major Challenges
 - iii. Suggestions for creating an exemplary shipboard community

V. Chapter 5:

- a. Belize and Gales Point
 - i. Cultural Understanding of the community
 - ii. History of Gales Point
- b. Select a problem
 - i. Explanation of the problem
 - ii. Action Plan
 - iii. Sustainability Initiatives
- c. What did you learn in Belize?
- d. How can we utilize this leaning in our professional and personal lives?
- e. How can we use this information on our home campuses?
- f. Addressing the UN Millennium Development Goals: How are we addressing the Millennium goals in Gales Point?

VI. Chapter 6:

- a. The Panama Canal
 - i. Research Assignment
- b. Lessons Learned

VII. Chapter 7:

- a. Reflection on the course
 - i. Final Reflection
 - 1. What have you learned?
 - 2. How will you use this learning in our professional and personal lives?
 - 3. How will you take this experience back to your home campus and your community there?
 - ii. Reflection from each project
 - iii. Reflection for Each class

VIII. Chapter 8:

- a. A Project
 - i. Statement of Problem
 - ii. Plan of Action to Address Problem
 - iii. Results
 - iv. Suggestions for Sustainability

XI. : Grade Justification Report

- A. **Portfolio Summary**
 - a. **Peer Review Report**
 - b. **Personal Portfolio Review**
 - c. **Group Participation Report**
 - c. **Peer Evaluations**
 - d. **Personal Evaluation**
- B. **Class and Group Leadership**
- C. **The \$100 Solution™ Program Participation**
- D. **Title and Description of A Project**
- E. **Three most important Lessons learned**

Portfolio Evaluation Form

I) Professional Appearance

The letter to the reviewer clearly explains the content of the portfolio and provides a guide for locating essential information. 1 2 3 4 5 6 7 8

Table of contents is provided; all sections are tabbed and labeled. 1 2 3 4 5 6 7 8

All class and group reflections are included. 1 2 3 4 5 6 7 8

The document has a professional appearance. 1 2 3 4 5 6 7 8

II) Mechanics

☐ All major elements are word-processed 1 2 3 4 5 6 7 8

☐ Class notes are word-processed 1 2 3 4 5 6 7 8

☐ Appropriate use of English and spelling 1 2 3 4 5 6 7 8

☐ Few mechanical errors in text 1 2 3 4 5 6 7 8

III) Content

☐ Each chapter has an introduction explaining how the content of the chapter contributes to the goals of the course.

☐ Evidence of the use of scholarly research is presented in each chapter.

☐ Each chapter contains evidence of best known practices.

☐ In each chapter a list of lessons learned are presented.

IV) Summary

☐ Areas of strength for this portfolio

☐ Areas for improvement for this portfolio

Grade _____

Student Reviewer _____

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V) Grade _____

Instructor _____