_____SOUTH SEATTLE COMMUNITY COLLEGE_____
Academic Programs

COURSE OUTLINE
Patience Browne, November 2010

DEPARTMENT: Academic Programs

CURRICULUM: The Natural World

COURSE TITLE: Independent Research in the Sciences

COURSE NUMBER: UGR 294

TYPE OF COURSE: Elective
Special Requirement Met: None

AREA(S) OF KNOWLEDGE: The Living World

COURSE LENGTH: 1 quarter

CREDIT HOURS: 1 - 5

LECTURE HOURS: variable

CLASS SIZE: 16

PREREQUISITES: Completion of UGR 214 or permission

COURSE DESCRIPTION:

By working collaboratively with peers and faculty, students will design, complete and publically present their own research projects.

STUDENT LEARNING OUTCOMES ADDRESSED

Upon successful completion of the course the student will be able to:

1. **Communication:** Read technical documents and listen actively to learn and communicate.
2. **Computation:** Apply quantitative skills related to research.
3. **Human Relations:** Use social interactive skills to work in groups effectively. Learn to work in teams with others to achieve goals in the laboratory.
4. **Critical Thinking:** Think critically in evaluating technical information, solving problems and making decisions
5. **Technology:** Select and use appropriate technological tools related to scientific research.
6. **Personal Responsibility:** Be motivated and able to continue learning and adapt to change. Be aware of environmental issues
7. **Information Literacy:** Access and evaluate information from a variety of sources and contexts, including technology.

GENERAL COURSE OBJECTIVES- ***At the end of the class the student should be able to:***

1. Describe the scientific process, including the scientific method, hypothesis testing, the various ways science is done, and the limits of different types of scientific study.
2. Understand what is involved in designing and executing scientific research.
3. Think critically, leading to the generation of a research question and testable hypothesis.
4. Execute, troubleshoot, and analyze independent research.
5. Present scientific publications to peers.
6. Communicate original research following a scientific format.
7. Present scientific information in a discipline-specific format (orally, in writing, or scientific poster).

TOPICAL OUTLINE: (e.g. 4-credit class		APPROX. HOURS
I.	Scientific Proposal Writing	8
II.	Initial Data Collection	10
III.	Study Design	12
IV.	Adequacy of Controls	5
V.	Sample Methodology	5
VI.	Data Analysis	12
VII.	Presentation of Results	12
VIII.	Communication of Scientific Findings	12
IX.	Synthesis, Critique, Interpretation of Projects	12
Total		88

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DATE: November 2010

SLO #	Included in Course Objective Number	SSCC Student Learning Outcomes
SLO 1.1	1, 2, 3, 4, 5, 6, 7	Communication - Read and listen actively
SLO 1.2	8	Communication - Speak and write effectively
SLO 2.1		Computation - Use mathematical operations
SLO 2.2	7	Computation - Apply quantitative skills
SLO 2.3		Computation - Identify, interpret, and utilize higher level mathematical and cognitive skills
SLO 3.1	8, 9	Human Relations - Use social interactive skills to work in groups effectively
SLO 3.2	6	Human Relations - Recognize the diversity of cultural influences and values
SLO 4.1	1, 2, 3, 4, 5, 6, 7	Critical Thinking and Problem Solving -
SLO 5.1	9	Technology - Select and use appropriate technological tools
SLO 6.1	1 - 9	Personal Responsibility - Be motivated and able to continue learning and adapt to change
SLO 6.2		Personal Responsibility - Value one's own skills, abilities, ideas and art
SLO 6.3		Personal Responsibility - Take pride in one's work
SLO 6.4		Personal Responsibility - Manage personal health and safety
SLO 6.5	1, 5, 8	Personal Responsibility - Be aware of civic and environmental issues
SLO 7.1		Information Literacy - Access and evaluate information
SLO 7.2	1, 6, 7	Information Literacy - Use information to achieve personal, academic, and career goals, as well as to participate in a democratic society

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