Tentative Course Outline and Schedule
ALS 4932: Mentoring the Scientific Process
Fall 2014 - SECTION 1H86 (2 credits)
Wednesdays 4:20 to 6 PM at Westwood Middle School

INSTRUCTORS:
Bobbi Langkamp-Henken, Ph.D.
Food Science and Human Nutrition Department
FSHN Building, Room 309
Phone: 352-392-1991 ext. 205
Email: henken@ufl.edu

Office Hours: Tuesdays noon to 1:30 p.m. (walk-in) and Thursdays 2 p.m. to 3:30 p.m. (by appt. – call or email Mindy at (352-392-1991 ext. 220; mindye@ufl.edu to schedule)

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Sara M. Charbonnet, M.Ed., N.B.C.T, Guest lecturer and contact for middle-school experiences
School Board of Alachua County
at Westwood Middle School
3215 NW 15th Avenue
Gainesville, FL  32605
Email: charbosm@gmsbac.edu
Phone: 352-955-6718 ext. 264

COURSE DESCRIPTION:
The purpose of this course is to expose students, who have a background in science, to the research process. Students will demonstrate their understanding of the research process by designing and completing an individual science research project and mentoring underserved middle-school students who are working on a science fair project.

Prerequisites: 1 year of biology, 1 year of general chemistry, and a signed student participation contract.

COURSE OBJECTIVES - At the conclusion of this course, the student will be able to:
1. Apply knowledge of the research process to design, complete, present and critique research projects.
2. Demonstrate the skills to reach out to underserved middle-school students and interest them in science.

TEXT AND MATERIALS:

STUDENT EVALUATION AND ATTENDANCE:
Students will be evaluated on assignments, presentations, class participation, and community service hours/log. Attendance is required for all classes and consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

ONLINE COURSE EVALUATION PROCESS
Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at https://evaluations.ufl.edu. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results.

ASSIGNMENTS: In-class and out-of class work will be assigned and graded. Activities include designing, completing and presenting an individual scientific study. As part of the course requirements, students will also be asked to apply what they have learned in class to help middle-school science students with a science fair project. All students will be asked to maintain time/activity logs for this community service activity. Students will be asked to complete a minimum of 20 hours of course-related community service. These activities will be done at Westwood Middle School located at 3215 NW 15th Ave. This school is on the corner of NW 34th Street and 1 block south of NW 16th Avenue.
**GRADING:**

Mentor (i.e., undergrad) Research Project

- Project Design Presentation 20
- Completed Science Fair Project Forms 20
- Written report - Follow directions in the Westwood Science Fair Project Guide; however only a 1-page review of literature and 3 references in bibliography are required for your project. 30
- Log Book 10
- Completed Project Presentation 20

Meet My Mentee (i.e., 6th grader) Presentation - email to your TA the day prior 20

My Presentation of My Mentee’s Poster- email to your TA the day prior 20

Community Service Learning Time/ Activity Logs (20 hour minimum) 200

Final Reflection Essay 20

Class Attendance 140

A= 450-500; B+= 425-449; B= 400-424; C+= 375-399; C= 350-374; D+=325-349; D= 300-324; E=<275

For information on current UF policies for assigning grade points, see https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

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**DATE** | **TOPIC**
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Aug. 27 | Discuss syllabus and course objectives (Dr. H.)

*4:20PM-8 PM*

- The mentoring process (Ms. C.)
- Volunteer forms (TA’s)
- Schedule forms (TA’s)
- Carpooling discussion (TA’s)
- Class pictures (TA’s)
- Assign TA groups (TA’s)
- View example poster boards (TA’s)
- How to complete a science project successfully (Ms. C.)
- Discuss PowerPoint presentation of project designs for research projects (Dr. H)
- Discuss science fair forms and rules (Ms. C.)
- Tour of Westwood Middle School and scavenger hunt (TA’s)
- Discuss cultural differences (Ms. C.)
- Dinner provided by instructors

Sept. 3 | Mentoring middle-school science students - survival skills (Ms. Charbonnet)

*4:20PM-6PM*

- Icebreakers for mentor/mentees
- Group presentations on ideas for science fair topic areas (i.e. botany, engineering, computers, earth and space, zoology, medicine and health, mathematics, behavioral science, physics, chemistry, biochemistry, microbiology, environmental science)

**Assignments:**

1. Review science fair rules and be prepared to discuss at the next class
2. Plan a research project (at the 6th grade level, see Westwood Science Fair Project Guide)
3. Complete the science fair rules tutorial for your project by next class
4. Create PowerPoint presentation of project design to be presented September 10th.

Sept. 10 | Using MacBooks – Science Fair Rules Wizard and Easy Bib (Ms. Charbonnet)

- What science fair forms are needed for this project? TA’s present case scenarios.
- Presentation of project design for research project to TA group
- Presentations of individual project designs to class
- If you have presented your study to the class, you may begin your experiment.
  - Keep a log book.
- Make sure your science fair forms are completed before you start your project.

Mentee assignments (Ms. C.)
Sept. 17  Presentations of individual project designs to class

Sept. 24  Presentations of project designs to class
Using MacBooks to make graphs, prepare a bibliography (bring your references to make your own project bibliography)

Assignments:
Complete project report. See Westwood Science Fair Project Guide. Note: you only need a 1-page review of literature and 3 references. Due October 15th
Create a small science fair display board poster of completed project Due October 29th

Oct. 1  Mentors’ science fair forms due to TA – please check over as a group.
Discuss mentee presentations
Assignments:
Prepare mentee presentation

Oct. 8  Review judging criteria
Mentee presentations

Oct. 15  Mentee presentations
Mentee progress check
Correct science fair forms from 6th grade classes
Note:  The public schools are not in session on October 17th

Oct. 22  Mentee progress check by appointment

Oct. 29  Judging of mentors’ science fair projects

Nov. 5  TBA

Nov. 12  Class discussion on issues related to mentee and projects.
Assignments:
Help mentee finish display board
Class reflection essay (see handout) Due December 3rd
Note:  The public schools are not in session on November 11th

Nov. 19  Presentation of mentee’s project and display board
Class reflection essay due

Nov. 26  NO CLASS – UF OFF FOR THANKSGIVING HOLIDAY
Note:  The public schools are not in session the week of November 24th through 28th

Dec. 3  Final Class:
Mentee Project and Display Board Presentations
Potluck dinner

Dec. 10  Set-up for Westwood Science Fair and/or participate in the science fair as a judge
Complete course evaluations

Westwood Science Fair: Dec. 11th
Alachua Region Science Fair: TBA
<table>
<thead>
<tr>
<th>Due Date</th>
<th>Topic</th>
<th>Title and Purpose</th>
<th>References/Bibliography</th>
<th>Review of Literature</th>
<th>Hypothesis</th>
<th>Materials and Procedure</th>
<th>Experiment / Logbook</th>
<th>Table, Chart, or Graph</th>
<th>Analysis and Conclusion</th>
<th>Abstract</th>
<th>Final Bibliography</th>
<th>Rough Draft of Project Notebook</th>
<th>Final Draft of Project Notebook</th>
<th>Display Board</th>
<th>Westwood Middle School Science Fair</th>
<th>Alachua Region Science Fair at Santa Fe College</th>
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<tr>
<td>Sept. 4</td>
<td>Behavioral, Biochemistry, Botany, Chemistry, Computers, Earth &amp; Planetary, Engineering&lt;br&gt;Environmental, Mathematics, Medicine &amp; Health, Microbiology, Physics &amp; Astronomy, Zoology</td>
<td>Title: In the form of a question (How does X affect Y?) Submit for approval.&lt;br&gt;Purpose: What will you learn and why is this topic relevant to the scientific community?</td>
<td>Five sources of information about your project. List them using the correct bibliographic format.&lt;br&gt;Include at least one book and one Internet source.</td>
<td>An original, three-page summary of all you have learned from the sources of information above.&lt;br&gt;This paper must be written in your own words.</td>
<td>A possible answer or solution to your question, based on your research above.&lt;br&gt;Should be written in an &quot;If…then…because…&quot; form.</td>
<td>Materials: A list of the items necessary for you to perform your experiment.&lt;br&gt;Procedures: A step by step description of your experiment from beginning to end.&lt;br&gt;Include a list of your independent variable, dependent variable, constants, and control.</td>
<td>Begin collecting preliminary results. Bring Logbook to class for the next 4 weeks.</td>
<td>Assemble all data into appropriate tables, charts, and/or graphs.</td>
<td>Submit a one-page summary of the entire experiment. Answer the following questions: Was the original hypothesis supported or rejected? Why or why not? Was your purpose achieved? Why or why not? Is additional research needed?</td>
<td>A brief summary of your entire project. It should be no more than 250 words long.</td>
<td>A complete list of all informational resources used in this project.</td>
<td>Assemble all of the above steps, with a title page, table of contents, etc. and submit for editing.</td>
<td>Assemble all steps in final form.</td>
<td>Display boards should be neat and organized, with all steps placed in the proper location.&lt;br&gt;They will be presented in class.</td>
<td>Parent judges and volunteers needed!!!</td>
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Grades and Grade Points: For information on current UF policies for assigning grade points, see https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Absences and Make-Up Work: Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

Academic Honesty: As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: http://www.dso.ufl.edu/scr/process/student-conduct-honor-code.

Software Use: All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Campus Helping Resources: Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university’s counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu/cwc/
  - Counseling Services
  - Groups and Workshops
  - Outreach and Consultation
  - Self-Help Library
  - Wellness Coaching
- Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/

Services for Students with Disabilities: The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.