SCI 4800—INDEPENDENT RESEARCH (CRN XXXXX)

Spring Semester, 20XX 1–X Credits

Prerequisites: at least 3 upper-level GEO, PHYS, and/or CHEM classes and BIOL 3110

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<tr>
<th>INSTRUCTOR</th>
<th>Office</th>
<th>Phone</th>
<th>E-MAIL</th>
<th>Office Hours</th>
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<tbody>
<tr>
<td>Dr. Jerry Harris</td>
<td>SCI 104</td>
<td>652-7758</td>
<td><a href="mailto:jharris@dixie.edu">jharris@dixie.edu</a></td>
<td>MWF 8–10 AM, or by appt.</td>
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COURSE MEETS: as needed after mandatory introductory/organizational meeting at the beginning of the semester

COURSE TEXTBOOK: none; other literature as required per individual research projects

DSC PHYSICAL SCIENCE DEPARTMENT PROGRAM STANDARDS

- Students will be able to demonstrate knowledge of the skills required to make informed personal and social decisions about the issues that we will face locally as well as globally.
- Students will be able to demonstrate knowledge of basic fundamental laws, concepts, and theories in the physical sciences and be able to apply them to everyday life.
- Students will understand the process of science — how scientific knowledge is generated and validated — so that they can make independent, empirical inquiries about the natural world.
- Students will be able to demonstrate knowledge of the process of science by being able to interpret data in the form of tables, graphs, and charts and then communicate those findings in oral and written form.

COURSE OBJECTIVES & OUTCOMES

- Students will design and conduct an original, novel research project in one (or more) of the physical sciences (can incorporate other scientific disciplines at instructor/advisor’s discretion).
- Students will develop experience with descriptive and/or experimental techniques in the physical sciences.
- Students will develop skills and knowledge of how to find, access/obtain, read, and assess appropriate, peer-reviewed, scientific literature.
- Students will apply previously obtained skills in scientific writing to generate a research paper suitable for publication in an appropriate journal or other volume. Whenever possible, students will also participate in the peer-review process.
- Students will be able to present and discuss the research and topic with other physical scientists.

EXPECTATIONS

- Each student will develop (with guidance) a research project proposal that outlines the subject of the proposed project, the background that leads to a need for research on the subject, experimental strategy (if needed), and resources required from the department. The written proposal (including a preliminary list of appropriate references) is due no later than the Friday of the second week of classes. The proposed project must be able to be completed during the course of the semester; students are strongly encouraged to consult with their project advisors to ensure they do not get in over their heads!
  *In some instances, the proposed project may constitute a piece of a larger project that spans more than one semester, but the project must still result in some definite conclusions that can be written up and presented at the end of the semester.
- Students will take primary responsibility for conducting research and do so with professional attitudes and time commitments. Each student can expect to spend a substantial amount of time—typically 8–12 hours per week, and often more during some portions of the work—performing his/her research, including gathering data, reading references, and writing. Careful forethought, planning, and prioritizing of workload is, therefore, paramount.
- By the end of the semester, each student will produce a manuscript (with active feedback from the instructor and peers) that can be published entirely or in part in an appropriate, peer-reviewed research journal (students are advised to select a target publication venue at the outset of the project in order to begin preparing their final manuscript in that journal’s format). Each student will be the primary author on his/her manuscript and any publications resulting from it. Publishable manuscripts require many drafts, reviews, and revisions. If necessary, revision of a manuscript for submission to a journal can continue after the semester ends, but an essentially complete manuscript is due by the last
assigned class period of the semester or another date to be determined by the project advisor.

• Students will present their research and results to other independent study students during the normally scheduled final exam time for the class. These presentations are to be formatted and delivered as if they were at a formal scientific conference. Students are further strongly encouraged to give this presentation at an appropriate scientific conference (e.g., UCUR, NCUR, or meeting for a society in an appropriate discipline; DSC Research Day is acceptable, but a larger-scale presentation is preferable); such a meeting may be held after the end of the semester. The project advisor should assist the student in finding funding to attend such a conference.

• Students will be self-motivated and work independently. Individual advisors may set meeting times for progress reports and reviews; students always should be prepared for such meetings.

EVALUATION

Each student’s final course/project grade will be calculated at the end of the semester according to the following criteria:

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<th>Percentage</th>
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<tr>
<td>45%</td>
<td>Final manuscript (including, but not limited to, grammar, spelling, punctuation, formatting, phrasing, organization, content,)</td>
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<tr>
<td>40%</td>
<td>Effort, attitude, and time invested (including attention to detail, equipment use, safety, etc.)</td>
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<tr>
<td>10%</td>
<td>Familiarity with relevant research literature</td>
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<tr>
<td>5%</td>
<td>Originality of project topic</td>
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BOILERPLATE

STUDENT SUPPORT SERVICES—For information on the following resources available to you at Dixie State College, please visit the following web sites:

Library and Library Services  Writing Center  Tutoring Center
Computer Lab  Testing Center  Student Support Services

Important Dates (full calendar available here)

- Jan. 16: Martin Luther King Day—NO CLASSES!
- Jan. 17: $10 drop fee begins for classes dropped on or after this date
- Jan. 24: $50 late registration fee begins for classes added on or after this date
- Jan. 30: Graduation Application deadline
- Jan. 31: Pell Grant census and last day for refund

- Feb. 20: President’s Day—NO CLASSES!
- Mar. 2: Last day to drop classes
- Mar. 12–16: Spring Break—NO CLASSES!
- Apr. 6: last day for a complete withdrawal (withdrawal policy here)
- Apr. 26: Last day of classes

ACADEMIC INTEGRITY AND DISCIPLINE—The faculty and administration of Dixie State College are opposed to cheating and plagiarism in any form, and in a course that results in a written project, plagiarism will especially not be tolerated. Any student found cheating or plagiarizing should expect to receive a failing grade for the class and be removed from the class. Expulsion from the college may also result. For the purposes of this policy, plagiarism includes any portion of an assignment copied from someone else's work, including fellow students, authors of books, magazines, or journals from a library or the World-Wide Web, even if you provide attribution (internal citation credit)!!! If you are unclear what constitutes plagiarism, consult your project advisor. The full DSC policy can be read here—don’t say we didn’t warn you!

ADA ACCOMMODATIONS—If you are a student with a medical, psychological or a learning difference and requesting reasonable academic accommodations due to this disability, you must provide an official request of accommodation to your professor(s) from the Disability Resource Center (DRC) within the first two weeks of the beginning of classes. Students are to contact the DRC on the main campus to follow through with, and receive assistance in the documentation process to determine the appropriate accommodations related to their disability. You may call (435) 652-7516 for an appointment and further information regarding the Americans with Disabilities Act (ADA) of 1990 per Section 504 of the Rehabilitation Act of 1973. We are happy to work with anyone with special needs; we just need to have the letter of accommodation that the DRC provides.