Time: Mondays, 1:00-3:50 pm

Location: Drachman Hall, Room A122

Instructors and Contact Information:
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Teaching Assistant:
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MS Student, GIDP Statistics
Email: sans@email.arizona.edu

Office Hours: By appointment.

Catalog Description: This modular course provides an opportunity for doctoral level students to advance their understanding and skills in public health research and evaluation methods. The course is structured to guide students through the development of their own research project following guidelines set by the National Institutes of Health. This course covers research design and evaluation, survey and measurement theory, qualitative and mixed methods approaches, and important considerations in the ethical conduct of human subjects research and logistics of grants management and budgeting. Significant class time will be spent on the application of research concepts, including power analysis, statistical design, grantsmanship, and peer review.

Course Description, Modules:
1. **Research Design and Evaluation:** This semester, students will learn psychometric theory (survey and measurement) to inform decisions about the measurement of proposed constructs. Students will be taught applied mixed methods research, including strategies for collecting qualitative data and integrating qualitative and quantitative data approaches. Students will be encouraged to apply this information to the design of their own research projects.

2. **Research Implementation:** In this module, the focus will be placed on important considerations in research project design and implementation, including principles of statistical design, power analysis, ethical issues in human subjects research, and research administration.

**Course Pre-requisites:** Enrollment in a doctoral program in health promotion sciences or consent of the instructor. All students must have taken or concurrently be enrolled in BIOS 576B Biostatistics for Research or equivalent courses.

**Course Objectives:**
During this course, students will:
1. Conceptualize a health and/or development project from the initial phase of project formulation incorporating:
   a. priority setting, significance and innovation
   b. a conceptual model
   c. a theoretical framework,
2. Develop skills in key components of project planning and evaluation with particular reference to:
   a. research design, statistical design
   b. survey and measurement
3. Apply descriptive and inferential methodologies according to the type of study design for answering a particular research question.
4. Apply ethical principles to research project planning, implementation, and evaluation
5. Demonstrate essential skills in communication including grant writing, scientific writing, peer review, and oral presentation
6. Identify key elements of the federal grants submission process, including writing a research grant budget with justification

**Learning Outcomes:**
Upon completion of this course students will be able to:
1. Articulate the importance for using multiple methodologies (that include qualitative and quantitative examples) in the study of a health behavior health promotion.
2. To express quantitative methods, appropriate for the analyses of multiple causal factors contributing to a health behavior health promotion outcome.
3. To identify active methods to engage stakeholders (e.g., within an under-served community or patients with a condition) to improve the development and/or delivery of health behavior health promotion programs.
4. To evaluate and integrate theories, frameworks, methods or paradigms to conduct health behavior health promotion research.
5. Use implementation science to promote use of evidence-based/informed practices.
6. Demonstrate the ability to communicate clearly through effective presentations and written scholarship about maternal child health populations, issues, and/or services.

**Required Text**

Required Other Reading


F31 Application instructions

F31 Page limits:

Other required reading assignments and course materials for each module will be made available on the course website at D2L. Because there are different instructors and multiple guest lecturers, it is vital to frequently check course announcements to ensure that you are prepared for class.

Course Requirement: Major Assignment

To learn principles and skills in research and methodology, students are to write the research portion of the NIH F31 Individual Predoctoral National Research Service Award (NRSA). The purpose of the NRSA is to enable predoctoral students to obtain mentored research training while conducting dissertation research in scientific health-related fields relevant to the mission of the participating NIH Institutes and Centers. Although not required, you are encouraged to work with your research mentor to assess whether this grant proposal could be a stepping stone to a final scholarly project or an actual NIH submission. A sample NIH Application Information is in D2L Content Tab, Grantsmanship submodule.

Throughout the semester of the course you will be graded on drafts of the following proposal documents that will undergo revision and review by multiple instructors. Instructors will be utilizing a grading rubric employed by NIH (1 = exceptional; 9 = poor). NIH Scoring Information is in D2L Content Tab, Grantsmanship submodule. By the end of the year-long course you will have completed the following pieces of the F31 proposal:

1) Specific Aims page (1 page)
2) Research Strategy (6 pages) following NRSA guidelines
3) Human Subjects section, including:
   a. Protection of Human Subjects
   b. Data Safety and Monitoring (for Clinical Trials)
   c. Inclusion of Women and Minorities
   d. PHS Inclusion Enrollment Report
   e. Inclusion of Children

Mentorship is a vital part of the grantwriting process. Therefore, 50 points are provided for assuring you have had a conversation with your mentor about your project idea and that s/he has read at least one draft of this project. Please upload an email in the relevant Assignment folder from your mentor showing comments or acknowledging that s/he has seen the draft. It is
highly recommended that you complete this assignment as early as possible in the semester so that your mentor can assist you with project ideas and focus. Please note that your instructors may be in direct communication with your mentor about your progress on this assignment.

In addition to the grant proposal, other assignments are provided to help you learn the module-based content material. Fifty points are provided for attendance at a 30-minute tutoring session, Aspects of Research workshop, or graduate student writing group at the Writing Skills Improvement program (WSIP; http://wsip.arizona.edu). You may substitute this requirement at attendance at a Responsible Conduct of Research (RCR) workshop conducted by the Human Subjects Protection Program (http://rgw.arizona.edu/research-compliance/rcr/workshops). Other substitutions are allowed with the advance permission of Dr. Haynes. The purpose of this assignment is to foster your awareness of available UA research training resources outside of the classroom environment. Please document your attendance at these activities by uploading a photo of the workshop with the appropriate description or providing a tutor signature.

**Grading Scale/Student Evaluation and Policies**

Grades on your assignments are provided by the instructors based on specific assignments.

A word document format to the D2L dropbox is due by 1:00pm on the due date. It is your responsibility to ensure that the instructor receives your assignments by the due date. Problems with technology will not be accepted as sufficient reason for late or non-submission of required assignments.

<table>
<thead>
<tr>
<th>Instructor / Grading</th>
<th>Due Date</th>
<th>Assignment</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haynes</td>
<td>2/4/19</td>
<td>Psychometric description of primary outcome (1 page max)</td>
<td>50</td>
</tr>
<tr>
<td>Gerald</td>
<td>2/4/19</td>
<td>In-class quiz related to NIH grant requirements</td>
<td>50</td>
</tr>
<tr>
<td>Haynes</td>
<td>2/11/19</td>
<td>Construct table</td>
<td>50</td>
</tr>
<tr>
<td>Gerald</td>
<td>2/25/19</td>
<td>Research Strategy Draft 1*</td>
<td>75</td>
</tr>
<tr>
<td>Gerald, Sans-Fuentes</td>
<td>3/11/19</td>
<td>Feedback to Peer</td>
<td>50</td>
</tr>
<tr>
<td>Gerald &amp; Haynes</td>
<td>3/18/19</td>
<td>Complete Research Strategy Draft 2</td>
<td>100</td>
</tr>
<tr>
<td>Haynes</td>
<td>3/18/19</td>
<td>CITI SBS Training Certificate</td>
<td>50</td>
</tr>
<tr>
<td>Gerald</td>
<td>3/25/19</td>
<td>Human Subjects Draft 1</td>
<td>75</td>
</tr>
<tr>
<td>Haynes, Sans-Fuentes, Carvajal</td>
<td>4/1/19</td>
<td>Class Presentation (assigned members of Group 1)</td>
<td>100</td>
</tr>
<tr>
<td>Haynes, Sans-Fuentes, Carvajal</td>
<td>4/8/19</td>
<td>Class Presentation (assigned members of Group 2)</td>
<td></td>
</tr>
<tr>
<td>Gerald &amp; Haynes</td>
<td>4/8/19</td>
<td>Human Subjects Draft 2</td>
<td>100</td>
</tr>
<tr>
<td>Haynes (Study Section Score)</td>
<td>4/16/19</td>
<td>Final Submission Aims, Research Strategy, Human Subjects</td>
<td>150</td>
</tr>
</tbody>
</table>
| Haynes               | 4/29/19  | - Last day to turn-in mentor acknowledgement  
- Last day to turn-in WSIP or RCR attendance | 50     |
|                      |          |            | 50     |
Reflections on Project Process and Mock Study Section

TOTAL 1000

Note that the Specific Aims and Significance Sections should be provided at every submission given that these assignments are cumulative and inter-dependent. It is expected that these sections will require feedback and continue to evolve as other sections of your proposal change. *It is recognized that number of participants will be an estimate only at this stage.

Together, the assignments sum to 1000 points. Your course grade will be based on the following grading scale: A = 1000-900 points, B = 899-800, C = 799-700, D = 699-600, E = 599-0

Policy on Late Assignments: The main assignment is designed to give you experience writing a NIH grant proposal you may submit for funding. NIH does not accept grants that are late, regardless of the reason. It essential that assignments are submitted by the time and date specified since so much time in-class is spent working with your drafts. As such, a 10% point reduction will occur each day the assignment is late.

Incompletes and Withdrawals: Requests for incompletes (I) and withdrawal (W) must be made in accordance with University policies. University policy regarding grades and grading systems is available at: http://catalog.arizona.edu/policy-type/grade-policies

Class Attendance: Attendance and active class participation are necessary to learn and master the proposal skills in this doctoral-level course. This course meets only once per week. It is recommended that you minimize absences and plan carefully. It is highly recommended that you notify the appropriate instructor (CC: Dr. Haynes) of any absence in advance. Any student who does not attend the first two classes and does not contact the instructor may be automatically dropped from the course.

• The UA policy regarding absences for any sincerely held religious belief, observance or practice will be accommodated where reasonable, http://policy.arizona.edu/human-resources/religious-accommodation-policy.
• Absences pre-approved by the UA Dean of Students (or Dean Designee) will be honored, http://deanofstudents.arizona.edu/

Communications: You are responsible for reading emails sent to your UA account from your instructor and the announcements that are placed on the course web site. Information about readings, news events, your grades, assignments and other course related topics will be communicated to you with these electronic methods. The official policy can be found at: https://www.registrar.arizona.edu/personal-information/official-student-email-policy-use-email-official-correspondence-students

UA Smoking and Tobacco Policy: The purpose of this Policy is to establish the University of Arizona’s (University) commitment to protect the health of University faculty, staff, students, and visitors on its campuses and in its vehicles. The official policy can be found at: http://policy.arizona.edu/ethics-and-conduct/smoking-and-tobacco-policy
University Course Policies: (please see the following URL):
https://academicaffairs.arizona.edu/syllabus-policies

Classroom Behavior: Students are encouraged to engage in a respectful exchange of ideas and communicate in a manner that maintains a positive learning environment.

- This class is intended to be inclusive of all gender identities and expressions. Students may share their preferred name and pronoun with instructors and fellow students, as desired.
- Students are encouraged to speak with the instructors if they have concerns or feedback about potential objectionable content material.
- Please turn off your cell phone during class and use your computer for classroom activities only.
- Students are expected to be familiar with the UA Policy on Disruptive Student Behavior in an Instructional Setting found at: http://policy.arizona.edu/education-and-student-affairs/disruptive-behavior-instructional-setting
# Course Schedule

Reading

*Note.* This schedule is subject to revision as necessary. Be sure to be aware of announcements made in class and on D2L. Readings will be assigned during class.

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Class Topic</th>
<th>Assignment Due</th>
<th>Other Assignment Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1: Jan 14</td>
<td>Haynes</td>
<td>Course Introduction and Expectations, Syllabus, D2L; Survey and Measurement 1</td>
<td></td>
</tr>
<tr>
<td>Week 2: Jan 21</td>
<td>MLK Day, No Class</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 3: Jan 28</td>
<td>Haynes</td>
<td>Survey and Measurement 2</td>
<td></td>
</tr>
<tr>
<td>Week 4: Feb 4</td>
<td>Gerald</td>
<td>Grantsmanship: Writing the Approach</td>
<td>Description of primary outcome</td>
</tr>
<tr>
<td>Week 5: Feb 11</td>
<td>Bell/Sans-Fuentes</td>
<td>Writing the SAP</td>
<td>Construct table (Haynes)</td>
</tr>
<tr>
<td>Week 6: Feb 18</td>
<td>Carvajal</td>
<td>Applied Qualitative Methods</td>
<td></td>
</tr>
<tr>
<td>Week 7: Feb 25</td>
<td>Carvajal</td>
<td>Mixed Methods Analysis Plan</td>
<td>Research Strategy Draft 1 (Gerald, Peers); <em>Power Analysis &amp; SAP not required</em></td>
</tr>
<tr>
<td>Week 8: Mar 4</td>
<td>Spring Break no class</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 9: Mar 11</td>
<td>Gerald, Haynes, Carvajal, Sans-Fuentes</td>
<td>Individual Meetings re: Approach Individual Meetings re: SAP, Qualitative Analysis Plan</td>
<td>Peer Feedback (Gerald)</td>
</tr>
<tr>
<td>Week 10: Mar 18</td>
<td>Haynes, Guest Lecture: TBD (HSPP)</td>
<td>Ethical Conduct of Research -- Common issues in SBS research</td>
<td>Complete Research Strategy Draft 2 (Gerald &amp; Haynes) CIIT SBS Training Certificate (Haynes)</td>
</tr>
</tbody>
</table>
| Week 11: Mar 25 | Gerald/Haynes  
Guest Lecture: Jamie Goodwin (Interim Assistant VP for Research Compliance; Research, Development, & Innovation) | Grantsmanship: Writing the Human Subjects Section | Human Subjects Draft 1 (Gerald) |
| Week 11: Apr 1 | Haynes, Sans-Fuentes, Carvajal | Class Presentations | Class Presentation |
| Week 12: Apr 8 | Haynes, Sans-Fuentes, Carvajal | Class Presentations | Human Subjects Draft 2 (Gerald & Haynes) |
| Week 13: Apr 15 | Haynes, Sans-Fuentes | In-Class Peer Feedback / Consultation | Final Draft for Distribution to Study Section (4/16@9AM, Haynes) |
| Week 14: Apr 22 | Haynes  
Guest Lecture: Angie Valencia (AHSC Research) | Budgeting; F31 Grant application components and process |  |
| Week 15: Apr 29 | Gerald/Haynes/Carvajal 
& Reviewing Faculty | Mock NIH Study Section | Last day to turn in mentor acknowledgement and WSIP /RCR documentation (Haynes) |
| Finals Week: May 6 @ 3PM |  | No In-Class Meeting | Reflections: Final Project and Mock Study Section (Haynes) |

More information on each assignment and points is provided under ‘Course Grades’ above.