**KINE 4780** - **EXERCISE SCIENCE RESEARCH (3 cr.)**

**Summer 2014**

(Revised 5.14.2014)

**Instructor:** Leah E. Robinson – ler0004@auburn.edu

**Class Meeting Time:** Monday, Wednesday, and Friday 4:00 – 5:15 PM

**Class Location:** MC 2216

**Ph.D. Senior Mentors:** Ryan Carrick (rzc0020); Maurice Godwin (mmg0025); Megan Irwin (jmi0002); Kara Palmer (kkp005),

Lorraine Smallwood (lls0017)

**Senior Mentors are present to help guide their assigned undergraduate research group through the course and to the successful completion of the final paper and presentation. Senior Mentors and Research Groups must meet at least 2x per week. Once in person and the second could be either in person or through the internet (Skype, Canvas Conference/Chat). HINT: since all students, PhD and Undergraduates, are free during the assigned class meeting time (MWF 4 – 5:15 PM) that is a great opportunity to meet.**

**Course Description**

Development of a research proposal in one of the exercise science sub-disciplines. The proposal will contain an introduction, review of literature, method, experimental design, and statistical analysis plan. This is the capstone experience in the Exercise Science major.

**Prerequisite**

KINE 4760 – *Introduction to Exercise Science Research.*

**Textbook**

Article: Choosing a Topic and the research proposal (Evans, 2007) available in canvas.

Baumgartner, T. A., & Hensley, L. D. (2013). *Conducting & reading research in kinesiology (5th Ed.)*. This is the new edition of the book that was used in KINE 4760. The previous edition will be fine.

**Course Objectives**

Upon completion of this course, students will have:

a. Written a group research proposal containing four sections: Introduction, Review of Literature, Method, and References);

b. Presented the research proposal using Microsoft PowerPoint poster format.

**Evaluation and Grading**

The final grade for this course is **Satisfactory** or **Unsatisfactory**. The final grade is determined by the

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| --- | --- | --- |
| 1. | Research proposal and group partnership | - 75% |
| 2. | Poster presentation of the research proposal | - 25% |

A **Satisfactory** grade is defined as greater than 75%. **Failure to meet any assignment deadline will result in the loss of ten (10) percentage points from the final grade. This means that missing three (3) deadlines will result in an unsatisfactory grade for this course.**

**Class Policy Statements**

The AU General Counsel now maintains a single website that serves as the collection of all University Policies: https://sites.auburn.edu/admin/universitypolicies/default.aspx. However, below are several policies that are specific to this class:

1. **Appropriate Effort** – Assignments are due by their posted deadlines, and evidence of activity should be obvious on a regular basis between deadlines. All assignments must reflect the group’s and each individual’s efforts in fulfilling the class requirements.

2. **Unannounced quizzes** - There are no unannounced quizzes in this course.

3. **Plagiarism Policy** – Proper credit and notation/citation must be given for all source materials.

4. **E-mail** - The University has requested that all students use their Auburn University e-mail accounts. This is the most efficient way for instructors to communicate with an entire class, and the University will occasionally send global notices that are important for all students. I request that you check your AU e-mail account regularly.

5. **Cell Phones** - As a courtesy to others, please turn off your cell phone during class. If you are expecting an emergency call, please let me know at the beginning of class. Also, please do not text–message or tweet during class, or use laptops for anything other than looking at lecture slides, taking notes, and working on the paper and poster.

6. **Extra Credit –** There are **no** extra credit opportunities for this class.

7. **Disability Accommodations** – Students who need accommodations are asked to arrange a meeting during office hours the first week of classes, or as soon as possible if accommodations are needed immediately. If you have a conflict with my office hours, an alternate time can be arranged. To set up this meeting, please contact me by e-mail. If

you have not established accommodations through the Office of Accessibility, but need accommodations, make an appointment with the Office of Accessibility, 1228 Haley Center, 844-2096 (V/TT).

8. **Attendance** – This class will not meet on a regular basis. Thereafter, most of your work will be conducted by MEETING WITH YOUR GROUP MEMBERS AND PHD MENTORS ON A WEEKLY BASIS. Senior Mentors and Research Groups must meet at least 2x per week together. Once in person and the second could either be in person or through the internet (Skype, Canvas Conference/Chat). HINT: since all students, PhD and Undergraduate, are free during the assigned class meeting time (MWF 4 – 5:15 PM) that is a great opportunity to meet. I expect Research Groups to meet regularly (a minimum of 1x per week) outside of the required time stated above with their PhD Mentor. Research Groups should keep a log sheet of what occurred at each meeting, including the location of the meeting, length of the meeting, and names of members present and absent. The summary of what occurred at each meeting must be at least several sentences. These logs must be sent to me by email following the meeting.

**ATTENDANCE IS REQUIRED AT ALL SCHEDULED CLASS MEETINGS AND GROUP MEETINGS. IF YOU MISS MORE THAN 1 SCHEDULED** **CLASS OR MORE THAN 2 MEETINGS OF YOUR RESEARCH GROUP AND PHD STUDENT MENTORS, A GRADE OF “UNSATISFACTORY” WILL BE ASSIGNED.**

**The Research Proposal**

Preliminary pages (#1, #2) and three sections (#3, #4, #5) plus references (#6) and potential appendices (A):

1) Title page

2) Abstract 250-300 words

3) Introduction, 2-4 pages.

4) Review of Literature, 10-15 pages

5) Methods, 2-5 pages.

6) References - At least 20 primary

A) Appendices - Human subjects (IRB informed consent document only), or IACUC animal use forms, surveys, questionnaires, etc. on an as needed basis.)

***Additional comments about paper length***: Pages for the reference list and appendices are NOT included in the above page guidelines. In other words, the references are in addition to the above and are not counted in the page allocations. In general, references to websites will NOT be permitted. You must choose the reference style of a particular journal and use that format for citing references in the body of the paper as well as for typing your reference list.

***Paper formatting***: Paper formatting for the sections listed above will be based on peer-reviewed journal specifications. You will choose the journal, based on your particular research interest, and will follow that journal’s citation instructions. To help me grade your work y**ou will be required to provide a 1) copy of the journal instructions, 2) copy of one page of a current article from the journal that illustrates the method of citation within the body of the article, and 3) copy of a reference page from a current article.** Note that this formatting pertains **\*\*ONLY\*\*** to intext citations and the bibliography/reference list.

***Additional formatting comments***: All research proposals must

• be printed and include a title page

• e-mailed to me as a Microsoft Word document

• pages must be numbered in the upper right-side margin as part of a header

• must be **Times New Roman 12-point** font.

• Printed pages for the main text must be double-spaced with a one-inch margin on all sides.

• Note that for papers that are short in length and substance, “hard returns” between sections will be subtracted against the paper total and points taken off in the event that sections do not meet required length minimums.

• The outline of the paper and all draft copies for each section must be submitted as both hard copies and via attachment of a Microsoft Word document to an email.

**The PowerPoint Poster Presentation**
At the end of the semester, you will present your research proposal as a poster presentation. The posters will be mounted in a conspicuous place (to be determined and announced later), and faculty and students from outside the class will be encouraged to view them. Instructions on poster presentation format and construction will be provided later. Attendance at the presentations is mandatory and required for successful completion of this course. Prior to this poster presentation you will give a formal oral presentation of your research proposal in class. Both presentations will include an intro to the topic, discussion of research hypotheses, study design and methods. There will be no discussion of results. In other words, the aim of this class is to create a high quality research proposal.

**To Choose and Explore Your Topic**

Read sections of interest and relevance in textbooks, especially from your Exercise Science classes.

Search the literature. Review articles are a good place to start .

Preferred Reference Source:

Entrez PubMed (http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?DB=pubmed)

Additional Reference Sources:

Google Scholar

Web of Science (access through AU Libraries on the internet)

MEDLINE (access through AU Libraries on the internet)

PsycINFO (access through AU Libraries on the internet)

SPORTDiscus (access through AU Libraries on the internet)

You might also glance at Chapter 3, pages 46-66 of your KINE 4760 textbook.

Look in familiar scientific journals.

**Class Schedule and Assignments
Submission Deadlines: All Assignments are due via email by 8 PM.**

**Microsoft Word hard copy and electronic copies required for many deadlines unless otherwise specified below.**

**Note: 1: All group members and PhD Mentor must be Copied on ALL e-mails including the turning in of assignments.**

**2: Schedule subject to modification at instructor discretion.**

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| **Week** | **Date** | **In-Class Activities** | **Assignments that Students complete with Mentors**  | **Assignments Due to Dr. Robinson** |
|  | 5/16/2014 | **CLASS MEETING**Introduction and orientation to class; the scientific method/format, literature searches, and group dynamics/grading. Scientific writing; use of proper English; humans in research: Rules, regulations, standards, ethics. Search and gather research literature in quest of research topic (Mentors will also assist with this literature searches). | Reading and searching the literature to decide on a topic for the research proposal. | Establish research group members. |
| 1 | 5/19/2014 |  | Continue reading and searching the literature, focusing on a topic for research proposal. |  |
|  | 5/21/2014 |  | Continue reading and searching the literature, focusing on a topic for research proposal.Begin developing research questions and hypotheses |  |
|  | 5/23/2014 | **CLASS MEETING WITH INDIVIDUAL GROUPS– ONLINE VIA CANVAS CONFERENCE** | Continue reading and searching the literature, focusing on a topic for research proposal.Begin developing research questions and hypotheses | Contract of Deliverables signed and submitted (hard copy in mailbox).Submit 6 research journal references that align with the research topic. |
| 2 | 5/26/2014 – Memorial Day |  |  |  |
|  | 5/28/2014 |  | Develop review notes (mini abstracts) from references that align with research topic.Continue reading and searching the literature, focusing on a topic for research proposal.Begin developing research questions and hypotheses |  |
|  | 5/30/2014 |  | Review research literature, develop research question (purpose), and formulate outline for paper. | Submit the tentative title for your paper and review notes. |
| 3 | 6/2/2014 |  | Continue reading and searching the literature, focusing on a topic for research proposal.Begin developing research questions and hypotheses | Submit 10 primary references. All references should be typed in your chosen journal format. |
|  | 6/4/2014 |  | Begin writing Review of Literature (Chapter 2) | Submit 10 primary reference s. All references should be typed in your chosen journal format |
|  | 6/6/2014 | **CLASS MEETING****Literature Reviews** | Continue working on Review of Literature (Chapter 2) | Submit Outline  |
| 4 | 6/9/2014 |  | Continue working on Review of Literature (Chapter 2) | Submit statement of purpose, research question(s), hypothesis(es). |
|  | 6/11/2014 |  | Continue working on Review of Literature (Chapter 2) | Submit figures outlining study approach |
|  | 6/13/2014 |  | Continue working on Review of Literature (Chapter 2) | Submit sub-topic outline for Chapter 2 |
| 5 | 6/16/2014 | **CLASS MEETING**METHODS | Continue working on Review of Literature (Chapter 2) and Begin working on Methods (Chapter 3) |  |
|  | 6/18/2014 | **CLASS MEETING –** Groups present study design | Continue working on Review of Literature (Chapter 2) and Methods (Chapter 3) | Submit figures for the overall study design |
|  | 6/20/2014 – No Class - MS-I Exam Period |  | Continue working on Review of Literature (Chapter 2) and Methods (Chapter 3) |  |
| 6 | 6/23/2014 | **CLASS MEETING WITH INDIVIDUAL GROUPS– ONLINE VIA CANVAS CONFERENCE** | Continue working on Methods (Chapter 3) | Draft Copy of Review of Literature (Chapter 2) |
|  | 6/25/2014 |  | Continue working on Methods (Chapter 3) |  |
|  | 6/27/2014 | **CLASS MEETING –** Groups present Data Collection Procedures | Continue working on Methods (Chapter 3 | Submit figure(s) for data collection |
| 7 | 6/30/2014 | Students will receive Teacher Feedback on Literature Review (Chapter 2) | Continue working on Methods (Chapter 3 |  |
|  | 7/2/2014 | **CLASS MEETING WITH INDIVIDUAL GROUPS– ONLINE VIA CANVAS CONFERENCE** |  | Draft of Methods (Chapter 3) |
|  | 7/4/2014 – 4th of July |  |  |  |
| 8 | 7/7/2014 | Students will receive Feedback on Methods (Chapter 3) | Begin Working on Introduction (Chapter 1), Drafting Poster and Finalizing Paper |  |
|  | 7/9/2014 | **CLASS MEETING** Introduction | Continue working on Introduction (Chapter 1), Drafting Poster and Finalizing Paper |  |
|  | 7/11/2014 |  | Continue working on Introduction (Chapter 1), Drafting Poster and Finalizing Paper |  |
| 9 | 7/14/2014 | **CLASS MEETING** | Continue working on Introduction (Chapter 1), Drafting Poster and Finalizing Paper | Draft of Introduction (Chapter 1) |
|  | 7/16/2014 | **CLASS MEETING WITH INDIVIDUAL GROUPS– ONLINE VIA CANVAS CONFERENCE** | Continue working on Introduction (Chapter 1), Drafting Poster and Finalizing Paper |  |
|  | 7/18/2014 | Feedback on Introduction | Continue working on Introduction (Chapter 1), Drafting Poster and Finalizing Paper |  |
| 10 | 7/21/2014 | **CLASS MEETING** In Class Powerpoint Presentation and Feedback |  |  |
|  | 7/23/2014 | **CLASS MEETING** In Class Powerpoint Presentation and Feedback |  |  |
|  | 7/25/2014  | Formal Poster Presentation |  | Poster (hard copy) |
| Exam Week | 7/28/2014 |  |  | Final Senior Paper |
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**July 25, 2014 - Poster Presentation in School of Kinesiology**

Final group poster presentation to the School of Kinesiology - tentatively scheduled for 7/25 (Friday) from 9:00-11:00 in the NEW Kinesiology Building atrium . I will keep the hard copy of the posters from the poster presentations.

**July 28, 2014 - Final Senior Paper and Powerpoint presentation (1:00 PM;1 electronic copy; 1 hard copy. They must be identical).** Each group member needs to submit the final Senior Paper to the TK20 system. This process is part of the College of Ed Assessment and is vitally important to evaluating success within Kinesiology.

**CONTRACT OF DELIVERABLES**

As members of Group \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, we understand that our senior paper research project for KINE 4780 will consist of both a senior paper (Introduction, Review of Literature, Methods, and References) and a poster presentation. The final product will reflect both our individual efforts and those of our colleagues within the group. The senior paper will be submitted both as an electronic copy and as a hard paper copy. The poster will be submitted according to the guidelines provided. Each of us understands that he/she is required to attend the poster presentation.

Signatures: Date

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**Organizational Plan (Briefly describe tasks to be completed by each group member, use additional sheets as needed):**

**HELPFUL TIPS ….**

1. USE YOU PHD MENTORS … THEY ARE HERE TO HELP YOUR GROUP SUCCESSFUL COMPLETE YOUR PROPOSAL.
2. All bulleted points listed on subsequent pages are mandatory items which must be included for successful completion of this course. Papers/paper sections submitted without all bulleted items will be returned ungraded.
3. Do not turn in “drafts” of papers/paper sections. All materials submitted throughout the semester should be an attempt at the final completed project such that the version \*could\* serve as a final passing version if needed. Incomplete “drafts” will be returned with the expectation that they will be graded only when complete. If it is perceived that a group has turned in a “draft” of the paper or paper section in hopes that Dr. Robinson will “proof” the paper, the paper/section will be returned ungraded.
4. **NO ASSIGNMENT SHOULD NOT BE SUBMITTED IF IT HAS FOR BEEN REVISED, EDITED, CHECKED AND APPROVED BY YOUR PHD MENTOR.**
5. Do not start sentences with “It…” or “This…” (neutral or demonstrative pronouns). Paper/paper sections found to have sentences beginning with “It” or “This” will be returned ungraded.
6. Non-specific language: undergraduate writers frequently write using non-specific language (eg., “…it ***can be seen*** from the Smith et al study that…” vs “The Smith et al findings illustrate for the first time that…”).
7. Non-scientific language: another frequent writing problem to be avoided is non-scientific language (eg., “**we *will*** *see* if treatment x ***improves*** conditions in our subjects” vs “The proposed study design will investigate whether the application of treatment X in XYZ conditions results in significant increases in variable X as compared to untreated controls”).
8. Passive language: undergraduate writers often resort to passive language, a practice which should be avoided (eg., “Previous findings ***have shown*** that…” vs “Previous findings demonstrate…”).
9. Turn in both hard copy and e-copy versions as periodically required and specified on the Contract of Deliverables document. Students are responsible for adhering to these requirements. Half credit will be given in instances where only one of two formats is provided.
10. Preliminary versions of the Intro, Methods, and Literature Review must include in text citations and a corresponding References section. Paper sections submitted without in text references and/or a References section will be returned ungraded.
11. Appendices: failure to include appendices with preliminary or final versions of the paper/paper section will be returned ungraded.
12. Title page: A carefully worded title conveys scope of study in as few words as possible. Include group members names, date and class information.
13. Section must include: Words which address purpose & key dependent variable(s)

**Abstract**

Within 250-300 words (note that some journal formats may have specifications on abstract construction, word limits, sub-sections denoted in bold text, etc.). The abstract should include a purpose statement, and maybe a background sentence or two as a lead in to the proposed work. A working hypothesis (if not specific hypothesis) should be included. Essential methodological details should be included. Details include subjects (specific characteristics as appropriate), tests performed (including all key dependent variables), and maybe a statement about data analysis.

I recommend that you write abstract last.

Section must include:

• Intro/problem statement

• Approach statement

• Hypothesis statement (probably broad/working hypothesis)

• Methods (subjects, tests, key dependent measures)

• Conclusion statement (prospective)

• Note: because this is a proposal only, do not include results or discussion

**Introduction**

Within the 2-4+ page introduction, you should have a succinct background that quickly brings the reader up to the purpose of your study. This intro will be a cliffs notes version of the background information provided in the extensive Lit Review which follows. There should be a linear progression of information which transitions from broad information to specific information. Once sufficiently specific, you should include a problem or purpose statement which is then followed by a broad/working hypothesis (examples to be given in class).

1. Your study approach should be summarized within a Figure that is included in the Introduction section. All figures within this document should have: 1) a callout within the text directing the reader to the figure, 2) a figure title and legend which is of sufficient detail that the reader could understand the figure without the benefit of the Introduction text, 3) the figure should conceptualize for the reader a) the study problem/purpose, b) the approach, 3) the working hypothesis (note that in some instances, specific hypotheses can be included).
2. Should be concluded with hypothesis section. This hypothesis should include the working hypothesis described previously, in addition to specific research hypotheses for each key dependent variable.
3. Section must include:

• Brief background, broad to specific, supporting rationale/approach

• Problem statement

• Working/broad hypothesis statement

• Working hypothesis figure (includes “Figure X” callout in text and stand-alone text)

• Language must refined to meet study approach.

Specific hypotheses (for each key dependent variable, include corresponding null hypothesis).

**Literature Review**

1. Contained within 10-15 page is the background information which underpins the study impetus. The information should begin broadly with the fundamental question/problem for proposing your study. From there it should progress logically and rapidly to the area of focus. In this process, you should be leading the reader in such a way that your proposed study is the most obvious next step in understanding for your chosen topic.
2. For this class it goes without saying that the literature review should follow a coherent outline, but students frequently fail in this regard. A common error when organizing the lit review is a paper in which individual supporting studies are structured as individual paragraphs. I call this the “lego” writing approach in that ‘pieces’ of information are mashed together in ways that may or may not fit. I recognize that you may have been instructed to do this in the past, but it is no longer acceptable at the Senior Paper level. Your literature review should be a comprehensive review which includes a well digested integration of the information, and may include interpretation at times. This integration should begin during the construction of the outline. We will discuss in class that only 20% of the outlines I receive are adequately detailed and integrated.
3. Additional comments include the fact that I do not want BS, filler, extraneous detail, etc. What I do require is a linear explanation leading me to understand who/what you proposed to measure and how you are going to do it – including which dependent measures you have selected (and maybe a rationale for which one’s you’ve avoided if your approach is counter to common logic). Note that complicated or volumous information can be easily conveyed by diagrams and figures in addition to tables. While the busy senior university student often perceives these aids to the reader as time consuming, I can promise you that they will most likely make the process easier than if you confuse me with too much information.
4. While more will be stated about this later, do note that I will be keeping an eye on referencing. I generally expect to see multiple references within each paragraph of the paper. I’m also good at noticing when students are BSing the references, so don’t do

that. I’ll also be looking for sentences that start with “It”, “This” etc. Be aware of the less rigorous writing techniques that other professors have allowed will not be permitted in this class. Phrasing of this sort is a poor mechanism of communication and will not be allowed. Also be aware of a tendency for non-specific language where author intent is not adequately and accurately conveyed by the words used. As a final note, paper sections written by different students should be edited so that sub-parts do not read with different ‘voices’.

1. Section must include:

• Brief intro statement detailing study purpose for the reader

• Illustrative figures for concepts, methods, foundational findings, illustrative purpose of various types (must include callout and stand alone text)

• Flow must be linear

• Must detail rationale for approach and methods based on previous work and existing gaps in understanding.

• Conclude intro with statement of study purpose (should be couched such that given the existing literature review and the need to understand X, the next logical step is to…)

**Methods**

1. Within the methods you should have all the detailed study design and data collection information. The first information presented should be the first tasks to be performed. This usually means human/animal subjects information, IRB/IACUC (note that you must include the informed consent or animal use form as an appendix – more later). Be linear about the presenting subsequent items such that recruitment of subjects, initial testing, etc are listed next. If subjects are going to be divided into multiple treatment groups, you should seriously consider adding a figure to detail this visually. Again, all figures should have a callout, legend, stand-alone text, and be inserted close to the text they are meant to accompany.
2. You should include a study design figure within the methods. The study design figure is the next step in logic from the study approach figure presented in the Intro. As such, this figure will detail the subjects (#, gender, etc), group assignment (randomized, etc), time course for the study, trials to be performed, etc. In these figures, time is often plotted on an x-axis of sorts. I will show you examples of this in class to help you along. Within the study design figure individual days/sessions of data collection are often listed. These individual data collection days should be further detailed in additional figures. For examples, a Pre-Post test study design may have identical tests to be performed before and after a treatment. The test regimen should be detailed to the point that all key dependent measures are contained within the figure. If Pre and Post measures are identical, then they can be displayed once for efficiency.
3. The methods section should conclude with the final tests to be performed. The final section of the methods should be a brief section about data handling including statistical methods to be used. Take cues for this section from published papers with similar study

designs to what you propose. That said, I will also help you with these sentences, as many of you are not yet fully trained in stats.

1. Section must include:

• Brief recapitulation of study purpose and design/approach

• Mention of AU IRB or IACUC approval directing the reader to the corresponding Appendix. The appendices must include a callout in text.

• Over all study design figure (includes callout and text)

• Data collection figure (includes callout and text) – broadly overviews the data collection process

• Testing figure(s) (includes callout and text) – eg., if a battery of pre and post tests (repeated measures) are to be performed the specifics of the tests should be detailed

• The methodological approach to each key dependent variable and supporting variables should be described and referenced.

• Any forms (diet surveys, RPE charts, etc.) must also be included as appendices. The reader should be directed to the corresponding appendices within the text.

• Statistical methods approach

**References**

1. You should have at least 20 primary references. A primary reference is an original science study (intro-methods-results-discussion). You are welcome to use review papers, but they can only be used to emphasize a broader topic (“for additional information please see Smith et al 2010 review”) summarization is available elsewhere. That is, cite review papers only for the most well-known information and as a courtesy to the reader. Stated differently, citing review papers is not as a courtesy or convenience to you the authors.
2. The references should be formatted (as should the in text citations described above) according to the journal format you have chosen. Elsewhere in the course materials, there is information requiring you to send me e-copy and hard copy information regarding these specifics. You will find this information on the journal website, usually under a link which says “Information for Authors” or something similar. On rare occasion the information for authors does not include referencing/citation information. In this instance you should choose a different journal.
3. Section must include:

• Formatted in text and in the references section exactly as detailed in the information for authors section you submit as your chosen journal format. You are also required to submit a sample paper from the chosen journal as a help in grading. I recommend that you compare between your paper and that of the chosen journal format

• Note: I do not want the paper cosmetics to look like/mimic a published journal article as they may appear in final published form. Formatting requirements for this class are limited to in text citations and the corresponding accumulated references.

**Appendices**

1. At the minimum, the informed consent document or animal use form should be included as an appendix to your paper. Additional appendices may include any protocols that are too lengthy to include in the main text, tables of information that are pertinent to the topic, questionnaires, forms, etc.
2. Section must include:

• Informed consent document (human participant studies) based on the template available on the Auburn University of the Office of the Vice President of Research web page. Alternately, animal based study proposals must include a completed IACUC animal use approval form using the template available on the Auburn University of the Office of the Vice President of Research web page.

• Appendices must be included with the any preliminary versions of paper sections that are submitted.

**Outline for Research Project Proposal**

When writing, please use section headings to indicate *where* the information can be found. Subheadings need not be used, though in long sections they may facilitate organization.

**1. Introduction**
Explain the issue you are examining and why it is significant.

 Describe the general area to be studied

 Explain why this area is important to the general area under study *(e.g., psychology of language, second language acquisition, teaching methods*)

**2. Background/Review of the Literature**

A description of what has already known about this area and short discussion of why the background studies are not sufficient.

 Summarize what is already known about the field. Include a summary of the basic background information on the topic gleaned from your literature review (you can include information from the book and class, but the bulk should be outside sources)

 Discuss several critical studies that have already been done in this area(cite according to APA style).

 Point out why these background studies are insufficient. In other words, what question(s) do they leave unresolved that you would like to study?

 Choose (at least) one of these questions you might like to pursue yourself. (Make sure you do not choose too many questions)

**3. Rationale**

A description of the questions you are examining and an exploration of the claims.

* List the **specific** question(s) that you are exploring.
	+ Explain how these research questions are related to the larger issues raised in the introduction.
	+ Describe what specific claim, hypothesis, and/or model of psycholinguistics you will evaluate with these questions.
* Explain what it will show about the psychology of language if your hypothesis is confirmed.
* Explain what it will suggest about the psychology of language if your hypothesis is disconfirmed.

**4. Method and Design**

A description of how you would go about collecting data and test the questions your are examining. You are not required to come up with a new or original method (though you can try!). Look journal articles to determine what methods are standardly used to assess knowledge of language in your chosen area and adapt one of these for your needs.

Method: How would you collect the data and why?

 Describe the general methodology you choose for your study, in order to test your hypothesis(es).

 Explain why this method is the best for your purposes.

 Participants: Who would you test and why?

 Describe the sample you would test and explain why you have chosen this sample. Include age, and language background and socio-economic information, if relevant to the design.

 Are there any participants you would exclude? Why, why not?

Design: What would the stimuli look like and why?

 Describe what kinds of manipulations/variations you would make or test for in order to test your hypothesis(es).

 Describe the factors you would vary if you were presenting a person with stimulus sentences.

 Explain how varying these factors would allow you to confirm or disconfirm your hypotheses.

 Explain what significant differences you would need to find to confirm or disconfirm your hypothesis(es). In particular, how could your hypothesis(es) be disconfirmed by your data?

 Controls: What kinds of factors would you need to control for in your study?

 Describe what types of effects would be likely to occur which would make your results appear to confirm, or to disconfirm your hypothesis(es).

 Describe how you can by your design rule out or control for apparent effects.

Procedure

 How are you going to present the stimuli?

 What is the participant in the experiment going to do?

Analysis

 How will you analyze the results?

 What kind of results would *confirm* your hypothesis?

 What kind of results would *disconfirm* your hypothesis

**5. Significance and Conclusion**
Discuss, in general, how your proposed research would lead to a significant improvement over the original studies, and how it would benefit the field. (In other words, why should someone care? If you were applying for money to do this, why would someone fund you? If you wanted to publish your results, why would they be interesting?)