Washington State University
MAJOR CURRICULAR CHANGE FORM - - COURSE
(Submit original signed form and ten copies to the Registrar's Office, zip 1035)

Future Effective Date: 05/15/2013  [☐ New course  ☐ Temporary course  ☐ Drop service course
(effective date cannot be retroactive) ]
☐ There is a course fee associated with this course (see instructions)

☐ Variable credit ____________  ☐ Repeat credit (cumulative maximum ________ hours)
☐ Increase credit (former credit ________)
☐ Lecture-lab ratio (former ratio ____________)
☐ Number (former number ________)
☐ Prefix (former prefix ____________)
☐ Crosslisting (between WSU departments)
☐ Cooperative listing (UI prefix and number ____________)
(Must have both departmental signatures)  taught by: WSU ☐  UI ☐ jointly taught ☐
☐ Conjoint listing (400/500)
☐ S, F grading
☐ Request to meet Writing in the Major [M] requirement (Must have All-University Writing Committee Approval)
☐ Request to meet GER in ____________ (Must have GenEd Committee Approval)  ☐ Fulfills GER lab (L) requirement
☐ Professional course (Pharmacy & Vet Med only)  ☑ Graduate credit (professional programs only)
☐ Other (please list request) _________________________________

EdPsych
course prefix _________________________________  572
course no. _________________________________  Introduction to Systematic Literature Reviews and Meta-Analyses
title ________________________________________

3 3
credit lecture hrs lab hrs studio hrs prerequisite
per week per week per week

EdPsych 508 - Educational Statistics

Description (20 words or less) Hands-on course that introduces students to steps involved in conducting systematic reviews and meta-analyses.

Instructor: Olusola Adesope  Phone number: (509) 335-2771  Email: olusola.adesope@wsu.edu
Contact: Lynn Buckley  Phone number: (509) 335-9117  Email: buckleyl@wsu.edu
Campus Zip Code: 2136

- Please attach rationale for your request, a current and complete syllabus, and explain how this impacts other units in Pullman and other branches (if applicable).
- Secure all required signatures and provide 10 copies to the Registrar's Office.

Chair/Date
Dean/Date
General Education Com/Date

Chair (if crosslisted/interdisciplinary)*
Dean (if crosslisted/interdisciplinary)*
Graduate Studies Com/Date

All-University Writing Com/Date
Academic Affairs Com/Date
Senate/Date

*If the proposed change impacts or involves collaboration with other units, use the additional signature lines provided for each impacted unit and college.
Course Rationale

ED PSYCH 572: Introduction to Systematic Literature Reviews and Meta-Analyses

This new three credit course is added to our program of study to allow students in the College of Education to develop skills in systematic approach to conducting literature reviews, skills that may be foundational to their success in the graduate school. Considering that single research studies rarely provide definitive answers to important research and policy questions, researchers in education, medicine, and public health have advocated for the use of systematic reviews and meta-analyses. With the increasing role of systematic reviews and meta-analyses in providing evidence-based syntheses of educational research and provide directions for future research, there is a clear need for current graduate students to acquire and develop skills in conducting systematic reviews and meta-analyses.

Students will develop a rich understanding of individual steps involved in conducting systematic reviews and meta-analyses, including developing focused research questions, defining study selection criteria, identifying relevant literature databases, developing literature search strategies, performing a literature search, creating data abstraction form, developing data abstraction and management plans, and acquiring statistical skills for conducting a meta-analysis. The emphasis of the course is both on the conceptual understanding and practical use of systematic reviews and meta-analyses for educational purposes. It will consist of lectures, discussions, and practical exercises.
Adesope, O. O.  Systematic Reviews and Meta-Analyses (EDPSYC 572)  Fall 2013

WASHINGTON STATE UNIVERSITY
College of Education
Department of Educational Leadership and Counseling Psychology

EDPSYCH 572
INTRODUCTION TO SYSTEMATIC LITERATURE REVIEWS AND META-ANALYSES
Cleveland Hall 63
Class Meeting: TBA

Instructor:  Dr. Olusola O. Adesope
Office:  Cleveland Hall, Room 356
Phone:  (509) 335-2771
E-mail:  olusola.adesope@wsu.edu
Office hours:  TBA

Prerequisite
EdPsych 508 — Educational Statistics
This course is ideal for students who have basic knowledge of statistical methods (e.g., regression, analysis of variance, descriptive and inferential statistics).

Course Description
The perspective of this course is that research synthesis should be systematic and be a part of the scientific process that demands the same high standards of rigor that apply in all scientific work. Hence, research reviews must attend to the same details of problem formulation, data collection, data evaluation, data analysis, and interpretation that are addressed in the conduct of a primary research study. Students will develop a rich understanding of individual steps involved in conducting systematic reviews and meta-analyses, including developing a focused research question, designing a study protocol, defining study selection criteria, identifying relevant literature databases, developing literature search strategies, performing a literature search, creating data abstraction form, developing data abstraction and management plans, and acquiring statistical skills for meta-analysis.

This hands-on course will cover topics such as understanding the key components of a systematic literature review, when meta-analysis may be useful, the challenge of making research results from different studies comparable in the form of effect size measures, methods for combining effect size measures across studies, choosing appropriate meta-analytical method including fixed and random effects, study quality assessment, exploration of heterogeneity, evaluation of potential sources of bias, and presentation of results. Students will apply skills learned in this course to conduct a systematic review or meta-analysis in their chosen scholarly area. Throughout the course, there will be a strong emphasis on collaborative and participatory learning.
Required Text (and assigned readings)


Recommended Book


PDF copy of this book can be downloaded free of charge from [http://books.google.com/books?id=G-PnRSMxdlwC&printsec=frontcover&dq=practical+meta-analysis&amp;hl=en&amp;ei=Sm5VQTqWeDurWiALnnoT5DA&amp;sa=X&amp;oi=book_result&amp;ct=result&amp;resnum=1&amp;ved=0CDsQ6AEwAA#v=onepage&amp;q&amp;f=false](http://books.google.com/books?id=G-PnRSMxdlwC&printsec=frontcover&dq=practical+meta-analysis&amp;hl=en&amp;ei=Sm5VQTqWeDurWiALnnoT5DA&amp;sa=X&amp;oi=book_result&amp;ct=result&amp;resnum=1&amp;ved=0CDsQ6AEwAA#v=onepage&amp;q&amp;f=false)

Course Objectives

Upon successful completion of the course, students will be able to:

1. Understand the key steps to conducting a successful systematic review
2. Critique a systematic review and meta-analysis
3. Conduct a systematic review and meta-analysis
   a. Formulate research questions
   b. Identify data sources and develop a search strategy
   c. Define criteria for including and excluding studies
   d. Develop means to assess methodological quality of studies to be included in the meta-analysis
   e. Design data abstraction form
   f. Select studies based on defined criteria
   g. Extract data from articles retrieved
   h. Choose appropriate statistical model(s) for the data
   i. Understand and use basic statistical concepts to conduct a meta-analysis
   j. Develop a report that evaluates and interprets the results
4. Explain the benefits and drawbacks of meta-analysis.
5. Develop graduate-level writing and oral presentation skills through course assignments.
Instructional Procedures and Course Experiences

Brief lectures, readings, discussions, group work, and applied projects will be used to help students meet the stated course objectives.

Course Requirements

I. Readings


Research articles relevant to the topic will be provided at least one week prior to class. Students will download research articles from Angel learning management system. A few items may be placed on reserve in hard copy form in the library. For the final project (conducting a systematic review/meta-analysis), students will locate and read articles relevant to their different areas of research. Approximately 50-75 pages of reading per week. Note: Students are expected to complete the assigned readings prior to each class meeting. At our first two classes, groups will be formed based on common research interests. Group members will work together to conduct a systematic reviews or meta-analysis. The professor will provide support throughout the duration of the project. The professor will also demonstrate Comprehensive Meta-Analysis™ software to students.

II. Participation and Attendance (10%)

Students will be graded on their prompt attendance as well as participation in classroom discussions. This is designed to foster development of critical thinking during class discussion. It is expected that students will prepare by contributing to class discussions and making significant connections between the readings and their projects. Attendance is considered very important and any absences may result in loss of two points. I understand that emergency situations may occur. Please inform the professor if you have an extenuating circumstance that prevents attendance and participation. Students are responsible for information missed during their absence.

III. Critique Paper (30%)

Students will critique a systematic review/meta-analysis. The professor will provide some published reviews/meta-analyses that students can critique. Alternatively, students can find a published meta-analysis in a refereed journal of their choice. Each student will e-mail the article she/he wants to
critique to me by the end of the fourth week of class for approval. Students will present their critiques to the class. The idea is to develop students' in-depth analysis of a published review, thereby helping them with the bigger project of conducting a rigorous meta-analysis. The critique paper should not be longer than 4 pages of single-spaced text (turn in both the critique paper and the copy of the published systematic review/meta-analysis on the due date). In critiquing a systematic review, students should consider the following checklist:

1. Research questions
   • Were original questions well formulated?

2. Study Identification
   • Was there a comprehensive search for data using appropriate sources? e.g. unpublished data and non-English language articles considered
   • Were unbiased explicit searching strategies appropriate to the research question used and are they reproducible?
   • Is there an estimation of the degree of potential publication bias?

3. Study selection
   • Were the inclusion/exclusion criteria used based on a theoretical framework?
   • Were selection criteria applied in a manner that limited bias, e.g. multiple reviewers?
   • Was there a rationale for excluding studies?

4. Appraisal of studies
   • Was the validity of individual studies addressed in a reliable manner?
   • Were important parameters that could affect study results addressed?

5. Data Collection
   • Were missing information regarding outcomes and other variables considered key to interpretation of results?

6. Data synthesis
   • Was an assessment for statistical heterogeneity performed?
   • Was a sensitivity analysis performed? e.g. Were results sensitive to changes in the way the analysis was performed (including or excluding unpublished data, or data from studies of lesser methodological quality).
   • Comments on the appropriateness of the analyses and findings

7. Results and Implications
   • Were the interpretations of results appropriate?
   • Were the implications realistic based on the limitations of the review?

Use handouts, Powerpoint, overheads, or whatever you like to present the outline of your presentation. The use of visual aid is highly recommended.
IV. Conduct and Report a Meta-Analysis (50%)

You may form groups of 2 or 3 people to conduct an original meta-analysis. The domain/topic chosen should be one which has generated at least 10 experimental, quasi-experimental, or correlational studies that are conceptually coherent and could be aggregated. Since conducting a meta-analysis is relatively demanding and suitable for students that have statistical background, few studies are required for this assignment so it is manageable in the short time we have in this course. Declare your group and topic to me by the end of the fourth week of class. Students need to:

a) find original sources,
b) code study characteristics,
c) compute interrater reliability,
d) test for moderators (that is, test for associations between effect size and at least five study characteristics).
e) Write a paper to report your meta-analysis.

Although the final paper is the only part that will be graded, there are several parts to writing a good meta-analytical report, so students should be working on the paper and seeking the assistance of the professor throughout the course. The paper should be typed and not more than 5,000 words double-spaced, excluding references, tables and figures. The paper should be suitable for submission to a journal or at least an academic conference in education (e.g., American Educational Research Association, European Association for Research on Learning and Instruction, etc.). Font size should be 12 point with page margins of 1.0 inch. The paper must follow APA format (6th edition). Points will be deducted for failure to adhere to the conventions of writing (e.g., consistent grammatical and/or spelling errors, frequent misuse of words or phrases, failure to organize writing in an effective manner). A deduction of five points per day or partial day will be assessed for a late paper. Although this is a group project, each team member will rate the contribution of other team members on the project and the ratings will be used as one measure of allocating each member’s score on the project.

IV. Presentation (10%)

During one of the last two class periods, teams will present their projects in a style similar to academic conference presentation. Each team project will be allotted maximum 45 minutes, 30 minutes to present the content and 15 minutes for questions and discussion. You are encouraged to practice the presentation to help you adhere to the time limit. Each team member is required to present different sections of the project and will be graded independently.
Grade Scale

<table>
<thead>
<tr>
<th>Percent</th>
<th>Grade</th>
<th>Descriptor</th>
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<tbody>
<tr>
<td>95 - 100%</td>
<td>A</td>
<td>Excellent</td>
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<tr>
<td>90 - 94%</td>
<td>A-</td>
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<tr>
<td>85 - 89%</td>
<td>B+</td>
<td>Good</td>
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<tr>
<td>80 - 84%</td>
<td>B</td>
<td>Acceptable</td>
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<tr>
<td>75 - 79%</td>
<td>B-</td>
<td>Unsatisfactory</td>
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<td>70 - 74%</td>
<td>C+</td>
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<td>65 - 69%</td>
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<tr>
<td>50 - 64%</td>
<td>C-</td>
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<td>55 - 59%</td>
<td>D+</td>
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<td>50 - 54%</td>
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<tr>
<td>Less than 50%</td>
<td>F</td>
<td>Failing</td>
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Cell Phones/Beepers/PDAs

Any student carrying a cell phone/beeper or other Personal Digital Assistant (PDA) should turn it off or set it to vibrate during class. In the event that students must remain “on-call” during class, they should keep the phone on vibrate and plan to sit where they can easily leave the room without disturbing others. If the cell phone rings during class, the owner will be required to bring treats (cookies, etc.) to the next class for all students.

Academic Dishonesty

Academic dishonesty, including all forms of cheating, plagiarism, and fabrication, is prohibited. Knowingly facilitating academic dishonesty is also prohibited. The expectation of the University is that all students will accept these standards and conduct themselves as responsible members of the academic community. Please complete your work independently unless I instruct you to do otherwise (e.g., the group assignment). Students should properly reference writings or ideas of others. If you are not sure how to do this, it is your responsibility to learn how by consulting APA 6th edition guidelines or me. Instances of academic dishonesty will result in at least a failing grade on the given assignment for all involved students. More severe cases will result in a failing grade for the course. Furthermore, cases of academic dishonesty will be referred to the Dean of Students.

Students with Disabilities

Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, please visit the Access Center. All accommodations MUST be approved through the Access Center (Washington Building, Room 217). Please stop by or call 509-335-3417 to make an appointment with a disability specialist http://accesscenter.wsu.edu
**Campus Safety Information**

The campus safety plan, which can be found at [http://safetyplan.wsu.edu](http://safetyplan.wsu.edu), contains a comprehensive listing of university policies, procedures, statistics, and information relating to campus safety, emergency management, and the health and welfare of the campus community. The University emergency management website is [http://oem.wsu.edu/emergencies](http://oem.wsu.edu/emergencies). WSU ALERT ([http://alert.wsu.edu](http://alert.wsu.edu)) posts information about emergencies, other issues affecting WSU, and communication resources WSU will use to provide warning and notification during emergencies. Please update your emergency contact information for the Crisis Communication System (CCS) by going to myWSU portal at [http://my.wsu.edu](http://my.wsu.edu) and entering your network ID and password and click on Register under the Emergency Notification box.

**Course Calendar**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading</th>
<th>Assignment Due</th>
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<tbody>
<tr>
<td>Week 1</td>
<td>Course Overview – Introduction, assignments, group work, etc.</td>
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<tr>
<td>Week 2</td>
<td>Systematic Review I</td>
<td>Abrami et al. (2011); Gouch, Oliver and Thomas (2012, Chapters 1 &amp; 5)</td>
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<td></td>
<td>- The Process</td>
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<td>- Searching the Literature</td>
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<td>Week 3</td>
<td>Systematic Review II</td>
<td>Gouch, Oliver and Thomas (2012, Chapters 6 &amp; 7)</td>
<td>DUE: Determining a research topic</td>
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<td></td>
<td>- Developing the Argument</td>
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<td>- Surveying the Literature</td>
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<td>Week 4</td>
<td>Systematic Review III</td>
<td>Gouch, Oliver and Thomas (2012, Chapters 9, 10 &amp; 11)</td>
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<td></td>
<td>- Synthesis</td>
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<td></td>
<td>- Writing the Review</td>
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<td>Week 5</td>
<td>Introduction to Meta-Analysis</td>
<td>Borenstein et al. (2009, Chapters 1-2)</td>
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<td>Week 6</td>
<td>Data Collection/Data Evaluation</td>
<td>Lipsey and Wilson (2001, Chapter 2)</td>
<td>DUE: Complete literature search</td>
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<td></td>
<td>- Determining a Research Topic</td>
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<td>- Developing Inclusion/Exclusion Criteria</td>
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<tr>
<td></td>
<td>- Identifying, Locating and Retrieving Studies</td>
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<td>Week 7</td>
<td>Extracting/Combining Effect Sizes</td>
<td>Borenstein et al. (2009, Chapters 3-8);</td>
<td>DUE: Selection of studies for</td>
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<tr>
<td>Week</td>
<td>Topic</td>
<td>References</td>
<td>Due:</td>
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<td>Week 8</td>
<td>Data Management / Comprehensive Meta-Analysis™ software/Fixed- vs. Random-Effects Model</td>
<td>Borenstein et al. (2009, Chapters 11-13); Lipsey and Wilson (2001, Chapter 5)</td>
<td><strong>Critique Paper</strong></td>
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<td>Week 9</td>
<td>Heterogeneity and Moderator Analyses / Comprehensive Meta-Analysis™ software</td>
<td>Borenstein et al. (2009, Chapters 15-16); Higgins and Thompson (2002); Higgins, Thompson, Deeks and Altman (2003); Huedo-Medina, Sánchez-Meca, Martín-Martínez, and Botella (2006)</td>
<td><strong>DUE: Calculate/code effect sizes</strong></td>
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<td>Week 11</td>
<td>Diagnostic Procedures and Reporting in Meta-Analysis</td>
<td>Harwell and Maeda (2008); Borenstein et al. (2009, Chapter 41);</td>
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<td>Week 12</td>
<td>Benefits and Drawbacks of Meta-Analysis</td>
<td>Borenstein et al. (2009, Chapter 43); Cooper and Dorr (1995); Graham (1995); Rosenthal and DiMatteo (2001); Walker, Hernandez and Kattan (2008)</td>
<td><strong>DUE: Analyze the effect sizes</strong></td>
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<tr>
<td>Week 13</td>
<td>Open Topics</td>
<td>Appropriate readings will be assigned depending on students interests</td>
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<td>Week 14</td>
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<td>Thanksgiving Break - NO CLASS</td>
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<td>Week 15</td>
<td>Presentations</td>
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<td>Week 16</td>
<td>Presentations</td>
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<td>Meta-Analysis Paper Due</td>
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<tr>
<td>Week 17</td>
<td>Finals Week (carry over presentations)</td>
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**LIST OF ARTICLES TO BE READ WITH THE TEXTBOOKS**

*Additional readings may be assigned as needed.


**LIST OF ARTICLES FOR CRITIQUE PAPER**


