Vision Statement
We develop educational leaders who create tomorrow's opportunities.

Mission Statement
Our mission is to prepare professionals to serve and lead education and human services organizations.

EDR 610
Introduction to Education Research Methods
Educational Leadership Department

General Information

37.5 Contact hrs. / 3 credit hrs.
Class: MTWTh 3.45 – 6.00 PM
Room: Eastburn 200
Professor: Dr. Ishmael I. Munene
Office: Eastburn 207K
Phone: (928) 523-3336;
Fax: (928) 523-1929
Email: Ishmael.Munene@nau.edu
Office Hours: Tuesdays 10.00am-12.00 pm & 2.00-4.00pm or by appointment.
Web Address: vista.nau.edu

Course Prerequisites

Admission to Graduate College / EDL Graduate Program

Catalog Description

General introduction to research in education; primary focus on use of research in education.

Course Description

This course provides an introduction to research, giving a foundation into the processes and applications of research in educational-based disciplines. Students will become familiar with research methods, research types, study designs, basic statistics and reporting techniques used in the behavioral sciences. Students should become proficient in the area of research by participating in critical reviews of peer reviewed journal articles, conduction of own research, and in production and report of own research results. The course, therefore, has three overall goals: (1) to increase your understanding of research concepts and procedures, (2) to develop your appreciation of the importance of research in education, and
(3) to develop your skill in preparing a research proposal for masters thesis or doctoral dissertation or research in your professional endeavors.

Research is an important tool for educational practitioners and policy makers. It provides them with tools for gathering, analyzing and interpreting data pertinent to their field of operation. In addition, it provides them with the ability to interpret research findings by other researchers, and, skills to make a determination as to the applicability of such findings to their own work. A successful research project has several stages: planning (such as thesis or dissertation proposal), pilot study and the development of measurement tools, data collection and analysis, and report writing (that is writing the thesis or dissertation). While a course such as this may introduce you to the basics of research, the skills of the craft are best attained through actual practice under the tutelage of a seasoned researcher. Central to this course, therefore, will be the production of a research proposal. A research proposal is the starting point in any research activity.

**Student Learning Expectations / Outcomes of the Course :**

Upon completion of this course, students should be able to develop skills in research that are integral to the overall standards articulated by the Educational Leadership Constituent Council (ELCC) especially standard 2. Specifically, upon completion of the course students will be able to:

1. State the nature, purposes and types of educational research (ELLC Standard 2.4)
2. Demonstrate an understanding of procedures for reviewing research literature including library database search and synthesis of pertinent literature (ELLC Standards 2.3 and 2.4)
3. Illustrate an understanding of sampling procedures (ELLC Standard 2.4)
4. Display knowledge of the procedures involved in selecting and administering tests and other measurement devices (ELLC Standards 2.2, 2.3)
5. Show a mastery of the concepts and procedures relating to: descriptive research, causal-comparative research, correlational research, experimental research, and R & D studies. (ELLC Standards 2.4)
6. Indicate a familiarity with the various statistical techniques appropriate for analyzing data from different research designs (ELLC Standards 2.1 and 2.4)
7. Prepare the various parts of an Action Research Proposal on a significant educational problem in a school (ELCC Standards 2.1, 2.2, and 2.3)

**Course Text / Materials:**

*Required*

*Recommended*

**Instructor Provided Materials**
Where necessary, the instructor will provide additional materials. This will be in form of research articles or reports that vividly illustrate the concept(s) under consideration or for in-class group activities.
Course structure / approach

The methods of instruction will include:
- Small-group activities
- Large-group activities
- Reading of required text, articles, outside readings
- Completion of in-class assignments
- Completion of projects and assignments
- Group discussions

Course Requirements

1. Regular attendance to all scheduled sessions unless valid reasons exist for absence. In such a case, the instructor will be notified ahead of class or immediately after.

2. Critical reading of all assigned texts and articles.

3. Prompt submission of all assignment on the date they are due.

4. Active participation in class discussion and any assigned group work.

Assignments and Grading Procedures

Assessment Method
Grades will be based on the percentage of possible points accumulated by the student in four categories: Exams, article reviews, research proposal, attendance and class participation. Grades will be assigned on the following basis:

A = 302 + Points
B = 268 - 301 Points
C = 234 – 267 Points
F = Below 234

Note: “A” starts at 90%; “B” at 80%; “C” at 70%

The activities to be assessed and points to be awarded include:

Tests (Mid-term & Final @100 each) 200
Proposal (Group Project) 100
Article Reviews (3 @25 each. Will pick best) 25
Class Participation 10
Total Points: 335

Graded activities are designed to facilitate students' understanding and application of course content. Activities may be provided to the student during class or assigned as additional homework. Activities will include work in:
a) research, b) critical discussion groups, c) presentations, and d) assessments. The course schedule serves as a tentative plan of what will be assigned throughout the course. However, to provide flexibility, activities may be added, substituted or deleted as needed.

1. **Mid-term and Final Exams:** Tests will randomly include information that is provided in class lectures as well as assigned reading. Each test will include multiple choice items as well as short answer questions that are designed to assess understanding of basic facts in the material. Students are encouraged to be diligent in their reading of the class text so that academic success is achieved on each test.

2. **Article Reviews:** Students will be asked to acquire specified journal articles from Cline Library. Each article will require that you critically identify and review key elements in research designs. These elements include are included in the review rubric in Appendix A of this syllabus.

3. **Research Proposal:** As part of this course, you will progressively develop a research proposal on a topic of your choice. To hone your thought processes about the project, you may be required to discuss your ideas with the class at several points in your project's development. This is a semester long project and you will develop each section of your proposal once that section has been covered in class. In other words you apply what has been learned in class to the development of your proposal. The detailed format/structure of your proposal is provided in Appendix B.

**Groups and Group Contract:**
A course of this nature necessarily involves group work. Groups are critical in helping sustain a sense of a community of learners. Through groups we are able to work collaboratively, generate ideas, and assist one another where difficulties arise. It goes without saying that the instructor has no monopoly of knowledge.

In the pursuit of these advantages, the class will be divided into small groups each with approximately 4 members. Members in a group shall maintain a high level of interaction so as to be effective in group presentations and projects. Once groups are constituted, members will meet and establish a **Code of Conduct** which will constitute the **Group Contract**. The Code of Conduct will provide the following information:

- Group role and responsibilities — Who will be the leader? Who will be designated to submit the final group project (proposal)? How will a member’s absence from group meetings (due to illness, travel and other contingencies) be handled?
- Incase of meetings, how many sessions will your group have in a week? Do you have a preferred meeting place? Will you use on-line resources for group meetings (Discussion boards and Chat rooms)?
- How will potential intra-group conflicts be resolved? These include problems in communication, differences in opinion, and other areas of conflict. Generate an agreed-upon plan for identifying and attempting to resolve such conflicts. Note: Consider the instructor as a “court of appeal”, ready, willing and available to step in and help with any conflict resolution but ONLY as a last resort.

**Course Policies:**
1. **Attendance is required.** During class there will be many opportunities to participate in activities, which are factored into the course grade. In addition, homework will be assigned and explained during class. As per the Student Handbook, only Institutional Excuses will be considered as "excused." All other absences (regardless of cause) will count against the student in the following manner: To calculate attendance, I will use this formula:
One absence = 10 points deducted  
Two absences = 20 additional points deducted  
Three absences = 40 additional points deducted  
For each additional absence = 20 additional points deducted from final grade

It is the responsibility of the students to make sure that they sign-in at the end of each period. Students are expected to notify me of their intent to be absent from class prior to missing class. Three types of notification will be accepted, 1) voicemail, 2) email, and 3) written notes. Verbal notification of an absence before, during, or after class will not suffice.

2. **Academic Dishonesty** will not be tolerated and the University policy will be adhered to in all cases. Students are encouraged to read and understand the University policy. Plagiarism is grounds for dismissal from the educational program at NAU. Note that working cooperatively with your peers or the instructor in non-specified independent work is not considered cheating and is in fact encouraged for the article reviews and studying for the tests.

3. The **Quality of Work** produced is expected to reflect the students' best attempt. Written work is expected to be free of mechanical errors and if specified, word-processed. If **minimum standards** are not met, work will be returned ungraded. Finally, your work is to reflect your professionalism, not your "craftiness." Craft products such as magic markers and construction paper are NOT to be used on assignments.

4. **Assignments** are expected to be turned in on the date due, when the work is called for in class. **Late Work** will only be accepted if I have been notified **2 days prior** to the assignment's due date. Work that is turned in late, without proper prior notification will be returned ungraded.

5. **Make-Up Tests** will be given in only cases where the student has properly notified me prior to missing the test. Make-Up Tests must be taken within three days of the regularly schedule test time. Tests may not be re-taken under any circumstances. **Extra credit** is exactly as the name indicates; it is work that is extra, beyond the regular requirements of the class. Course assignments, on the other hand, have been developed to meet the course objectives and are standardized for all students. The completion of extra credit work does not meet course objectives and cannot be standardized for all students. Therefore, extra credit will only be allowed if the student has successfully completed all other course requirements and assignments. Opportunity for extra credit will only be granted if the student wishes to extend his or her learning and is not to be used as a method of improving a grade, or in lieu of completing other required coursework.
<table>
<thead>
<tr>
<th>Date</th>
<th>Assigned Reading</th>
<th>Content</th>
<th>Assignments Due / Remarks</th>
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</table>
|      | Syllabus         | • Introduction to the Course  
• Student Self Introduction  
• Next Class Assignment |             |
| Text Chpt 1 | • Introduction to Research in Education  
  o Sources of knowledge  
  o Scientific Inquiry  
  o Research Types & Research Article Format | Group Contracts Due |
| Text Chpt 2 | • Research Problems, Variables & Hypo.  
  o Features in Quantitative & Qualitative Res. |             |
| Text Chpt 3 & 4 | • Reviewing the Literature  
  o Collecting Library & Internet References  
  o Critiquing quality of Literature | In Cline Library Rm 298.  
Meet at Library Reference Desk at 3.45 pm |
| Text Chpt 5 | • Sampling Techniques  
  o Sampling in Quantitative Research  
  o Sampling in Qualitative Research  
  o Population Validity |             |
| Text Chpt 6 | • Foundations of Educational Measurement  
  o Levels of Measurement  
  o Basic principles of Descriptive Statistics  
  o Validity & Reliability |             |
| Text Chpt 7 | • Types of Educational Measures  
  o Norm & Criterion-Referenced  
  o Tests and Self-reports  
  o Questionnaires  
  o Observations guides |             |
| None | Mid-Term Exam | Success |             |
| Text Chpt 8 | • Quantitative Designs—Non Experimental  
  o Descriptive Studies  
  o Comparative Studies  
  o Causal-Comparative / Ex-Post Facto Studies  
  o Using Surveys |             |
| Text Chpt 9 | • Experimental Designs  
  o Experimental Validity  
  o Types of Experimental Designs |             |
| Text Chpt 10 | • Statistical Inferences  
  o Inferential Statistics  
  o Tests of Statistical Significance  
  o Beyond Significance Testing |             |
<table>
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<th>Assigned Reading</th>
<th>Content</th>
<th>Assignments Due / Remarks</th>
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| Text Chpt 11 | • Qualitative Research Designs  
  o Features of Qualitative Designs  
  o Types of Qualitative Studies  
    • Ethnographic Studies  
    • Case Studies  
    • Phenomenological Studies | Review Article 1 Due  
Jacobson, Reutzel & Hollingsworth  
"Reading Instruction: Perceptions...." |
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<th>Text Chpt. 12</th>
<th>Grounded Theory Studies</th>
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| **Mixed-Methods** | o Advantages  
|                | o Mixed Methods Designs |
| **Action Research** | o Characteristics of Action Research  
|                | o Benefits  
|                | o Designing and Conducting Action Research |
| **Discussions & Conclusions** | o Purpose & Nature of Discussion  
|                | o Interpretation of Results  
|                | o Conclusions |
| Final Exam | |
| Group Research Proposal Due | |
APPENDIX A

Article Review Rubric: Students will be asked to acquire specified journal articles from Cline Library electronic reserves. Each article will require critically identifying and reviewing key elements in research designs. These elements include (when appropriate):

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<tr>
<td>Full Citation of the Article</td>
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<td>Identify the theory upon which study is based (Note: may be stated in article or you have to generate a relevant one based on the study and your research)</td>
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<td>What is used to show the relationship between variables? Identify them/it (Could be Research hypothesis, Research Questions or Research Objectives)</td>
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<tr>
<td>Identify the Variables in the study</td>
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<td>What is the Research Design? What evidence do you have for this?</td>
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<td>Is Statistics Used? If so which one: Descriptive – which type and for what purpose? Inferential – which type and for what purpose?</td>
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<td>Identify the sampling method. How appropriate is it and why?</td>
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<td>Describe the research with respect to the following attributes: (a) Validity—Is it mentioned? If so is it appropriate? If not which would you recommend and why? (b) Reliability-- Is it mentioned? If so is it appropriate? If not which would you recommend and why?</td>
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<td>Discuss the Generalizability of the study</td>
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APPENDIX B

Signature Assignment

GUIDELINES FOR A QUANTITATIVE OR QUALITATIVE ACTION RESEARCH PROPOSAL (GROUP)

This Action Research Proposal project meets ELCC Standard 2 and its subsections, 2.1, 2.2, 2.3, & 2.4.

**Note:** Though the proposal guidelines are in a list form, you are expected to write the proposal in a continuous form (except in listing the research questions, objectives or hypothesis). The listing here is to ensure you do not miss out on any particular section. As a rule of thumb, write out your proposal in the same format as the sample proposal given.

1. PURPOSE OF THE STUDY

A. Identify a practical problem that can be systematically investigated. Then, one sentence tell us what your research problem is: “The purpose of this study is to__________________(One sentence only)

B. What the study or literature review is your study most directly based on? (Give citation)

C. How does your study build on previous research (No more than 4 sentences)

D. How will your study contribute to knowledge about the educational problem you are investigating (No more than 5 sentences)

2. RESEARCH QUESTIONS, HYPOTHESES, OR OBJECTIVES

A. In what form are you stating your research purposes? (Use one only)

- Questions
- Hypothesis
- Objectives

B. List your research questions/hypothesis/objectives

C. Does your study relate to a particular theoretical framework? If it does, describe the framework, and indicate how your research questions, hypotheses, or objectives relate to it. If the study is qualitative in nature, indicate whether you plan to use a grounded theory approach.

3. LITERATURE SEARCH

A. State the descriptors that you will use initially in your literature search

B. Select at 6 to 10 good studies from your search which are very relevant to your study and undertake a brief literature review (should not exceed one page).
4. RESEARCH DESIGN

A. Describe the research design that you selected for your study: descriptive, causal-comparative, correlational, experimental, case study, or a particular qualitative research

B. If the study is quantitative in nature, what are the threats to the internal validity of your study research design? What will you do to minimize or avoid these threats?

C. If your study is quantitative in nature, what are the limitations to the generalizability (i.e., external validity) of the findings that will result from your research design? What will you do to maximize the generalizability of your findings?

D. If your study is qualitative in nature, what types of validity and generalizability criteria do you consider to be relevant to your research design?

5. SAMPLING

A. If your study is quantitative in nature, describe the characteristics of the population that you will study. If your study is qualitative in nature, describe the phenomenon you wish to study and the cases that comprise instances of the phenomenon.

B. Identify your sampling procedure (e.g., individual students or a class of students)

C. Indicate the sampling unit (e.g., individual students or a class of students)

D. Indicate size of your sample, and explain why that sample size is sufficient

E. Indicate whether the sample will be formed into subgroups, and if so, describe the characteristics of the subgroups

6. VARIABLES

A. If your study is quantitative in nature, list the variables you will study. For each variable, indicate whether it is an independent variable, dependent variable etc etc. If the study is qualitative in nature, describe the aspect of the cases on which data collection and analysis will focus

7. METHODS OF DATA COLLECTION

A. List the measures that you will select or develop for your study

B. If your study is quantitative in nature, indicate the variables that each measure will assess. For each measure, indicate which types of validity and reliability are relevant and how you will check them

C. If your study is qualitative in nature, indicate the themes and patterns that it possibly will explore. Also, indicate whether your data collection will focus on etic or emic perspectives, or both. Explain whether and how you will collect data on context in which the research participants function. Explain, too, your role in the data collection process.
8. DATA ANALYSIS PROCEDURES

A. What statistics, if any, will you use to analyze your data? If your study is qualitative, indicate whether you will use an interpretational, structural, or reflective method of analysis.

9. ETHICS AND HUMAN RELATIONS

A. What threats, if any, does your study pose for your research participants? What steps will you take to minimize these threats?

B. How will you gain entry into the setting in which you will collect data?

C. How will you gain the cooperation of your research participants?
## Rubric for Action Research Proposal Signature Assignment

<table>
<thead>
<tr>
<th>Standard (ELLC)</th>
<th>Exceeds Requirements 90-100 points</th>
<th>Meets Requirements 80–89 points</th>
<th>Approaches 79–Below points</th>
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<tr>
<td><strong>2.1: Promote a Positive District Culture</strong>&lt;br&gt;Students know and can identify a unique educational problem that requires data-driven solution. The problem threatens a school’s positive culture encompassing student achievement, administration and management as well as socio-economic and cultural diversity.</td>
<td>The research problem is well conceptualized and concrete rationale provided. The problem focuses on a significant school problem and has an excellent link to existing literature.</td>
<td>The research problem is identified and linked to a prevailing school challenge. Rationale provided but not specific enough. Link to literature is fairly good.</td>
<td>The research problem is poorly conceptualized and not linked to a concrete educational problem. Rationale for the study is unclear and link to literature is weak or missing.</td>
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<td><strong>2.2: Provide Effective Instructional Programs within District &amp; 2.3: Apply Best Practices to Student Learning</strong>&lt;br&gt;Study rationale and literature review demonstrate students knowledge of effective school practices including managerial and organizational that promote effective and efficient learning environments</td>
<td>Very good literature review that is closely linked to the study rationale. The literature is current, very relevant, sourced through academic databases, well synthesized and meshes well with the problem under investigation, focusing on an aspect of significance in education.</td>
<td>Literature review is evident and linked to the study rationale. Some is current, though not all is relevant to the study. There is evidence of use of academic databases while the synthesis shows some weaknesses. This weakness in synthesis makes it difficult to link the literature well to the problem under investigation.</td>
<td>Literature review is poorly done. It has a weak link to the study rationale, not relevant to the study and is wholly sourced through non-academic databases. The synthesis is poorly done which makes it lack link with the research problem.</td>
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<tr>
<td><strong>2.4: Design Comprehensive Professional Growth Plans</strong>&lt;br&gt;Students' proposal demonstrates knowledge and competence in research design, sampling, data collection strategies along with data analysis on a specific educational problem.</td>
<td>The research design is an excellent fit for the problem. The sampling technique, data collection procedures, the data analysis technique are an excellent fit for the research design and the research problem.</td>
<td>A research design is presented. It represents one of the possible designs but is not the best. Sampling technique, data collection procedures are identified though there are some gaps in the description. Data analysis procedure shows some weakness(s).</td>
<td>The research design is omitted or totally inappropriate for the study. Sampling and data collection procedures do not align with the design and / or have major loopholes. Data analysis procedures are inappropriate for the data or are omitted altogether.</td>
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Related University Policies

1. **Safe Environment Policy:** The Safe Working and Learning Environment Policy of NAU seeks to prohibit discrimination and promote the safety of all individuals within the university. The goal of this policy is to prevent the occurrence of discrimination on the basis of sex, race, color, age, national origin, religion, sexual orientation, disability or veteran status, and to prevent harassment and sexual assault. You may obtain a copy of this policy from the Area Chair of your academic area. If you have any concerns related to this policy, it is important that you contact your Area Chair, or call the Office of Student Life at 523-5181, the Academic Ombudsperson at 523-9368, or the University Office of Affirmative Action at 523-3312. You may also obtain a copy from the NAU's Affirmative Action website: [http://www4.nau.edu/diversity/swale.htm](http://www4.nau.edu/diversity/swale.htm).

2. **Institutional Review Board Policy:** Any study involving observation or interaction with human subjects which originates at NAU or includes NAU employees as a group, including a thesis, dissertation, class project, report, etc. must be reviewed and approved by the Institutional Review Board (IRB) for the Protection of Human Subjects in Research and Research-Related Activities prior to any contact with the subjects. IRB approval requires a formal application process and may take several weeks to secure. If you are conducting a study involving human participants, you should consult the instructor advisor as early as possible to determine if you need to complete an IRB application. A copy of the IRB Policy and Procedures Manual is available in each department’s administrative office and each college dean’s office or on their website: [http://www4.nau.edu/ovp/regulatorycompliance/irb/index.htm](http://www4.nau.edu/ovp/regulatorycompliance/irb/index.htm). If you have questions, contact Melanie Birck, Office of Grant and Contract Services, at 928-523-8288.

3. **Policy for Students with Disabilities:** If you have a temporary or permanent disability, you are encouraged to make arrangements through the NAU Counseling and Testing Center for class assignments and/or exams so your academic performance will not be hindered due to the disability. If you have any questions on special provisions (such as special testing procedures) for students with disabilities, contact the Counseling and Test Center, 423-9559. This is your responsibility and application for services should be made at least eight weeks prior to the start of the semester. Your course instructor does not make these decisions. If the Counseling and Testing Center verifies that you are eligible to receive special services, you should inform your instructor early in the semester.

   Additional concerns or questions regarding disability related accommodations can be brought to the attention of DSS or the Affirmative Action Office. For more information, visit the DSS website at [http://www2.nau.edu/dss/](http://www2.nau.edu/dss/).

4. **Academic Integrity:** The University takes an extremely serious view of violations of academic integrity. As members of the academic community, the administration, faculty, staff, and students of NAU are dedicated to promoting an atmosphere of honesty and are committed to maintaining the academic integrity essential to the educational process. Inherent in this commitment is the belief that academic dishonesty in all forms violates the basic principles of integrity and thus impedes learning. It is the responsibility of the individual faculty member to identify instances of academic dishonesty and recommend penalties to the Area Chair and/or Executive Director in keeping with the severity of the violation. Penalties may range from a discussion about the incident and its potential consequences with the faculty member and others to a failing grade in the course. The complete policy on academic integrity is in Appendix G of the current NAU Student Handbook which can be downloaded at: [http://www4.nau.edu/stulife/handbookdishonesty.htm](http://www4.nau.edu/stulife/handbookdishonesty.htm).

5. **Classroom Management Statement:** Membership in the academic community places a special obligation on all members to preserve an atmosphere conducive to a safe and positive learning environment. Part of that
obligation implies the responsibility of each member of the NAU community to maintain an environment in which the behavior of any individual is not disruptive. It is the responsibility of each student to behave in a manner that does not interrupt or disrupt the delivery of education by faculty members or receipt of education by students, within or outside the classroom. The determination of whether such interruption or disruption has occurred has to be made by the faculty member at the time the behavior occurs. It becomes the responsibility of the individual faculty member to maintain and enforce the standards of behavior acceptable to preserving an atmosphere for teaching and learning in accordance with University regulations and the course syllabus. At a minimum, students will be warned if their behavior is evaluated by the faculty member as disruptive. Serious disruptions, as determined by the faculty member, may result in immediate removal of the student from the instructional environment. Significant and/or continued violations may result in an administrative withdrawal from the class. Additional responses by the faculty member to disruptive behavior may include a range of actions from discussing the disruptive behavior with the student to referral to the appropriate academic unit and/or the Office of Student Life for administrative review, with a view to implement corrective action up to and including suspension or expulsion.