

**Tentative Syllabus**

EDUC 2000 K-12 Educator 2019 Externship Action Research  
1 Professional Development Credit  
Fall, 2019 [August 26 – December 13]

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**Important Notice**

The educator is responsible to make sure their school district accepts professional development credit from NDSU towards their licensure renewal.

**Registration Also Required for**

EDUC 2000 K-12 Educator Externship Action Research in Summer 2019 (2 credits)

**Course Description**

This course builds on the EDUC 2000 K-12 Educator Summer Externship course by engaging educators in an action research project. After completing this course, educators will have the knowledge to develop and implement student-centered learning activities that draw on STEM principles and develop 21<sup>st</sup> century skills.

**Course Textbook**

There is no required course textbook. Readings and resource materials will be distributed by the instructor as needed.

**Purpose**

This course gives educators the opportunity to implement classroom teaching that applies the understanding of design-based problem solving processes and 21<sup>st</sup> century competencies gained through practical work experience during the summer externship. Drawing on an increased understanding of how industry addresses a variety of technological challenges through engineering design, collaboration, communication, and other 21<sup>st</sup> century competencies, educators will help students improve their ability to undertake problem solving processes in a 21<sup>st</sup> century classroom. Participation in this course will strengthen the educator's ability to make curriculum content more relevant and applicable in the classroom. The educator will understand how lessons that target 21<sup>st</sup> century skills and engineering design process can increase student engagement, increase content relevance, and align with the goals of engineering and STEM education and/or state and national standards in other subject areas.

## **Course Objectives**

Through course participation, the educator will:

1. Develop an in-depth understanding and appreciation of how iterative problem-solving processes such as engineering design are collaboratively utilized in a technological corporate environment.
2. Understand the role of 21st century competencies and how these skills are integrated to prepare students for lifelong learning. These include, but are not limited to, critical thinking, effective communication, collaboration, creativity, problem solving, technological literacy, team diversity, leadership roles, and personal accountability.
3. Understand the importance of education-industry partnerships.
4. Understand the importance of reflective practice and its role in professional development
5. Develop and implement a lesson plan based on active learning strategies that incorporates an iterative design process for problem solving and infuses 21<sup>st</sup> century skills into learning activities.
6. Analyze and reflect on a lesson plan based on active learning strategies that incorporates an iterative design process for problem solving and infuses 21<sup>st</sup> century skills into learning activities.
7. Develop an increased awareness of career options for 21<sup>st</sup> century students.

## **National Board for Professional Teaching Standards**

The externship program is designed to provide professional development for educators to expand and enhance their knowledge and understanding of student learning in the classroom and therefore provides opportunities aligned with the National Board for Professional Teaching Standards.

### *Proposition 1: Teachers are Committed to Students and Learning*

- NBCTs are dedicated to making knowledge accessible to all students. They believe all students can learn.
- They treat students equitably. They recognize the individual differences that distinguish their students from one another and they take account for these differences in their practice.
- NBCTs understand how students develop and learn.
- They respect the cultural and family differences students bring to their classroom.
- They are concerned with their students' self-concept, their motivation and the effects of learning on peer relationships.
- NBCTs are also concerned with the development of character and civic responsibility.

### *Proposition 2: Teachers Know the Subjects They Teach and How to Teach Those Subjects to Students*

- NBCTs have mastery over the subject(s) they teach. They have a deep understanding of the history, structure and real-world applications of the subject.
- They have skill and experience in teaching it, and they are very familiar with the skills gaps and preconceptions students may bring to the subject.
- They are able to use diverse instructional strategies to teach for understanding.

### *Proposition 3: Teachers are Responsible for Managing and Monitoring Student Learning*

- NBCTs deliver effective instruction. They move fluently through a range of instructional techniques, keeping students motivated, engaged and focused.
- They know how to engage students to ensure a disciplined learning environment, and how to organize instruction to meet instructional goals.
- NBCTs know how to assess the progress of individual students as well as the class as a whole.
- They use multiple methods for measuring student growth and understanding, and they can clearly explain student performance to parents.

*Proposition 4: Teachers Think Systematically about Their Practice and Learn from Experience*

- NBCTs model what it means to be an educated person – they read, they question, they create and they are willing to try new things.
- They are familiar with learning theories and instructional strategies and stay abreast of current issues in American education.
- They critically examine their practice on a regular basis to deepen knowledge, expand their repertoire of skills, and incorporate new findings into their practice.

*Proposition 5: Teachers are Members of Learning Communities*

- NBCTs collaborate with others to improve student learning.
- They are leaders and actively know how to seek and build partnerships with community groups and businesses.
- They work with other professionals on instructional policy, curriculum development and staff development. They can evaluate school progress and the allocation of resources in order to meet state and local education objectives.
- They know how to work collaboratively with parents to engage them productively in the work of the school.

**Engineering Design Process**

This course will use the concepts of the engineering design process to offer a comprehensive experience for educator professional development. The engineering design process that defines the conceptual framework of the educator internship experience is described below.

**Define the Problem:** Clearly defining the problem is the key step of the design process. This includes the problem itself, along with the criteria and constraints under which the solution needs to be developed.

**Research the Problem:** Understanding appropriate research methods is critical to gaining the background information needed to approach the problem in a practical manner.

**Brainstorm Possible Solutions:** Every opportunity solutions should be explored through open-ended discussion without limiting the usefulness of each option.

**Choose the Best Solution:** Formally critiquing which components of each solution are viable based on parameters and criteria discovered through problem definition and research

**Build a Prototype:** Creating a visual model of the solution so the feasibility of the solution can be monitored and adjusted as needed.

**Test Your Solution:** Exposing the solution to the parameters of the problem through an iterative process to gain knowledge about the solutions performance.

**Communicate Your Solution:** Clearly documenting and presenting all results discovered during the designing and testing of the solution. This component of the design process is critical so this information is disseminated accurately and effectively to the design team and others having a stakehold in the outcome.

**Redesign as Needed:** Closing the loop of the design process is a critical component to developing optimal solutions. This step allows for multiple iterations of the design process which will create the opportunity for the best possible solution.

### **Special Needs**

Any student with disabilities or other special needs who needs accommodation in this course is encouraged to speak with the instructor as soon as possible to make appropriate arrangements for these accommodations.

### **Academic Dishonesty or Misconduct**

All work in this course must be completed in a manner consistent with NDSU Senate Policy, Section 335: Code of Academic Responsibility and Conduct which states:

*The academic community is operated on the basis of honesty, integrity, and fair play.*

*Occasionally, this trust is violated when cheating occurs, either inadvertently or deliberately.*

*Faculty members may fail the student for the particular assignment, test, or course involved, or they may recommend that the student drop the course in question, or these penalties may be varied with the gravity of the offense and the circumstances of the particular case.*

\*Please see <http://www.ndsu.nodak.edu/policy/335.htm>

### **Professional Conduct**

Educators who are participating in a professional development program need to exhibit the behaviors and dispositions that are consistent with those required by practitioners. Specifically, this means conducting yourself in a professional manner by fulfilling course requirements, turning in work on time, and treating all individuals respectfully. If for some reason an assignment will not be completed on time, prior approval for submitting late work needs to be approved by the instructor.

### **Course Assessment**

The final grade for this course will be determined from the following assignments:

- |  |                |
|--|----------------|
| 1. Readings & written reflections          | 6 hours        |
| 2. On-line discussions & blogs             | 6 hours        |
| 3. Lesson plan portfolio reflection report | <u>6 hours</u> |
|  | 18 hours       |

<u>Assignments</u>	<u>Points Possible</u>
Reflection Papers (2 @ 20 points)	40
Lesson Plan Portfolio and Report	160
Total	200

Grading Scale: A = 90% – 100%    B = 80%– 89%    C = 70% – 79%    D = 60% – 69%    F < 60

Note: The professor of record has the right to revised or modify any of these assignments and dates based on current circumstances of the externship experience.

### **Assignment Descriptions**

#### ***1. Reflections Papers***

The purpose of these reflection papers is for educators to reflect on course readings in relationship to their externship experience in relationship and their classroom work as educators. Focus questions will be provided in conjunction with assigned readings, which we be available on Blackboard. The target length for reflection papers is approximately 3 pages, though papers will be graded based on substance rather than length.

*Grading Criteria for Reflection Papers:*

- (a) Responds to the focus questions.
- (b) Demonstrates reflective thinking by making connections between reading, externship placement, and work as an educator.
- (c) Develops ideas to a sufficient level of specificity given a target length of 3 pages of text.
- (d) Writing Conventions Requirements:
  - Organization: The text is cohesively organized, flows logically, and makes effective use transitions as appropriate.
  - Clarity: Sentences or other syntactical structures are clear and comprehensible. Very few, if any, misspellings, grammar errors, or punctuation errors.

*Scoring Rubric for Reflection Papers:*

Score Earned	Criterion #1 Responds to focus questions	Criterion #2 Evidence of reflection	Criterion #3 Sufficient development & specificity	Writing Conventions Requirements
20/20	Exceeds in all 3 criteria			Meets or Exceeds
18/20	Combination of Meets and Exceeds			
16/20	Meets clearly in all 3 criteria			
14/20	Meets minimally in 1 or more criteria			
Not Yet*	Does not meet 1 or more criteria and/or writing conventions			

\*A reflection that is scored as “Not Yet” can be revised and resubmitted for up to 1 week after receiving instructor feedback. Beyond that, the score will be entered as zero.

**2. Lesson Plan Portfolio and Report**

This assignment involves detailed planning, documentation, implementation, revision and reflection for a lesson plan portfolio based on the EDUC 2000 – K-12 Educator Summer Externship. Once the original lesson plan activities have been implemented and documented, the educator will revise the activities based on personal, professional, or student feedback of the experience. Through reflective practice, the educator will explain connections between classroom practice and the summer externship experience, and comment on how to improve the activities for future use. The changes should be made to the portfolio documents as well as explained in a reflective report.

**What to Submit:**

1. **Evidence of Implementation** of the lesson plan can include any of the following:
  - a. Examples or images of student work
  - b. Note verifying observation by an administrator or internship coordinator
  - c. Other documentation that captures the activity implementation experience

2. **Reflective Report** that describes (a) connections between the summer externship placement and the lesson (b) planned future improvements to the lesson plan. Target length: 3 double-spaced pages.
3. **Revised Portfolio Documents** (a) Revised lesson plan in template format, and (b) Associated instructional materials such as student worksheets, assessment rubrics, PowerPoint slides, etc. Though a formal APA references list is not required, please be sure to acknowledge sources as necessary.

*Scoring Rubric for Lesson Plan Portfolio and Report*

<b>Grade Earned</b>	<b>Portfolio Items</b> Weight: 20% of points	<b>Clarity &amp; Detail of Lesson Plan</b> Weight: 20% of points	<b>Target Learning Outcomes</b> Weight: 30% of points	<b>Reflective Practice</b> Weight: 30% of points
<b>A</b> 144-160 pts	A significant number of additional items are included.	Lesson plan can be fully implemented as submitted. Exceptional level of detail is documented.	Portfolio demonstrates that the target learning outcomes for this EDUC 2000 course have been surpassed.	Reflective report demonstrates deep reflective thinking by extensively describing: (a) externship-to-classroom connections, and (b) changes to the lesson plan after instruction.
<b>B</b> 128-143 pts	Items that clearly address all 3 categories above are included.	Lesson plan can be fully implemented as submitted. A clear description of how to implement the lesson plan is provided.	Portfolio clearly demonstrates that the target learning outcomes for this EDUC 2000 course have been achieved.	Reflective report clearly demonstrates reflective thinking by describing: (a) externship-to-classroom connections, and (b) changes to the lesson plan after instruction.
<b>C</b> 112-127 pts	Items for 1 or more categories are minimally documented or require minor additions.	Lesson plan can be implemented as submitted, but minor revisions are needed to increase clarity.	Portfolio leaves questions about the extent to which target learning outcomes for this EDUC 2000 course have been achieved.	Reflective report requires revision to further develop or increase clarity about (a) externship-to-classroom connections, and/or (b) changes to the lesson plan after instruction.
<b>D</b> 96-111 pts	Items for 1 or more categories require major changes or are missing.	Lesson plan cannot be implemented as submitted. Substantial revisions are necessary.	Portfolio does not demonstrate basic learning outcomes for this EDUC 2000 course.	Reflective report requires substantial revisions.
<b>F</b> <96 pts	Minimal or no work submitted			