Mansfield University  
Academic Affairs Committee  
Application for Online Course Approval

Course Prefix/Number: **ELE4426**

Course Title:  **MATHEMATICS METHODS II: GRADES 2-4**

Date:  **August 27, 2013**  
Submitted by: **Jane Benjamin**

Sponsoring Department:  **Education and Special Education**

To request approval to offer a course online, complete and sign this form. Include:

1. The course syllabus, with student learning outcomes; the current or proposed catalog description; *(Course syllabus is provided following the narrative descriptions of #2 below)*

2. A narrative that describes: details of how you plan to deliver content in a manner appropriate to the online environment, course activities, learning assessments, and opportunities for student engagement. The narrative must address the following:
   a. Design features that support student learning in a format appropriate to the online environment
   b. Strategies for engaging students with meaningful, interactive activities
   c. Strategies for communicating with and among students
   d. Strategies for assessing student learning outcomes, including methods to ensure procedural integrity

This form and attached materials should be sent to the Chair of AAC in electronic form (a single file is preferred). Two copies of the form and attached materials (with Applicant and Department Chairperson signatures) should be submitted via campus mail to the Chair of AAC.

**Signatures:**

Department Chairperson: ___________________________  Date: ____________

Chairperson, AAC: _________________________________  Date: ____________

Dean of Record: ___________________________________  Date: ____________

The process for online approvals is via Department Chair, AAC, and Dean (this Expedited Approval process is consistent with the CBA). Online approvals should be submitted prior to the listing of a course in WebAdvisor. Once a course is approved for online, any qualified faculty may teach the course. Courses under special topics (or 2255/4455) should be submitted on a topic-by-topic basis.

Use this form to request online status for an existing course (one already approved through the regular curricular process). If you are proposing to create a new course for online delivery, the new course forms should accompany this form.

(Approved by Senate 12/08/2011)
Explanation of how ELE4426 course objectives will be met using distance education pedagogy:

a. **Design features that support student learning in a format appropriate to the online environment**

The course consists of a sequence of lessons, one that orients students to the Desire-2-Learn system, and the rest on different strategies of teaching grade 2 to 4 math.

The detailed tasks are listed below:

- Read assigned materials from the textbook.
- Visit recommended websites to read or obtain data.
- Complete activities designed to apply what you have learned or deepen your understanding.
- Participate in discussion board in D2L
- Complete on-line tests.
- Develop a lesson plan in group using the departmental designed template and rubric
- Develop a lesson plan and administer to a grade 2-4 student and write a reflection paper.
- Submit all work for that lesson as specified on the course website.

All of the assignments will be posted on or emailed through the Desire-2-Learn course management system. This system enables students to post messages for their classmates and instructor, send email to any course participant, and complete their assignments online.

b. **Strategies for engaging students with meaningful, interactive activities**

There will be several discussion topics posted on the discussion board. Students are required to post their answers/research findings, reply and critique peers’ postings, as well as review all postings. In addition, students are required to form a group for group lesson plan project. They will discuss their group project through discussion board and e-mails and submit their group project in Dropbox.

c. **Strategies for communicating with and among students**

As stated above, the discussion board will be used for communication and discussion. A “help each other conference” forum provides students opportunity to ask questions. Several topics related to the content covered in this course will be posted in the discussion board for students to discuss. E-mail will also be the main source of communication tool. Students will also be provided the instructor’s phone number for communication.

d. **Strategies for assessing student learning outcomes, including methods to ensure procedural integrity**
All evaluation of student learning outcome is done electronically.

- The individual project requires students to select a topic from grade 2 to grade 4 Math curricular, create a lesson plan and administer the lesson to one of the targeted grade students and write a reflection paper on the project.
- There is a group project in this course. Students will form a group in the discussion board in D2L. Students are required to work in the group to create a lesson plan based on the Department lesson plan template and rubric.
- Students are required to participate in the discussion board. The participation grade includes both Desire-2-Learn orientation assignment and a few forums posted in “discussion board issues” forum. Students will be assigned to different group for the assignment and discuss specific topics within the forum.
- Two progress tests will be posted in Desire2Learn “quizzes” for the designated 75 minutes. Feedback will be provided right after the deadline of each progress test.
- The final examination will consist of multiple choice questions, and will be based on all material covered in the course.

*Please note: The on-line test questions assess student’s higher level cognitive skills. Students must apply, analyze, or synthesize their knowledge learned in the textbook to answer the questions.
ELE4426 Course Syllabus:

A special note for the on-line course proposal: This course is temporarily approved by Dean Burke to offer in Fall 2013 as an on-line course to accommodate my physical disability. The on-line ELE4426 is intended to continue in Spring 2014. The following course syllabus is for the Fall 2013 and will not be changed much in Spring 2014.

ELE 4426 MATHEMATICS METHODS II: GRADES 2-4

Semester: Fall 2013
Credit Hour: 3

Professor: Dr. Jane Benjamin, Retan Center, Room 203A, Mansfield University
Tel: (570) 662-4797; ©: (607) 329-7897; (h): 607-936-2333;
E-Mail: jbenjami@mansfield.edu

Student Office Hours: By skype or phone conversation
- Wednesday, 6:30pm – 8:30pm
- Tuesday, Thursday, 9:00am – 11:00am,
Other times can be arranged through e-mail or phone

Special note: due to the medical reason, I will be teaching from home this Fall semester. All office hours are held at home through skype or phone conversation. However, special arrangement to meet in my campus office may be made for Wednesday office hours.

About the instructor:

Dr. Benjamin received her B.ED. from Taiwan Normal University, M.S. in Educational Psychology, and M.S. in Special Education from SUNY-Albany, and Ph.D. in Educational Psychology from UNC-Chapel Hill. Before coming to Mansfield in 1999, she worked as a statistical consultant, a college instructor, a public school teacher and private tutor for more than 10 years in Canada and USA.

Course Description:

Elementary mathematics instruction in grades two, three, and four. Featured topics include problem solving, teaching for conceptual understanding, uses of manipulatives, number and operations, early algebra and geometry, measurement, and data analysis and probability. Knowledge and application of national and state standards for the teaching of mathematics.

Course Content:

This course focuses on the strategies in teaching Mathematics in Grade 2 through grade 4. The content includes:
a) Understanding the influences and directions of teaching of Mathematics
b) Understanding the learning theory including various teaching approaches
c) Understanding the development of Children’s Mathematical thinking and program-solving ability
d) Understanding assessment methods
e) Understanding the development of various Mathematical concepts
f) Applying the learning theories to teaching Mathematics in each Mathematical topic

Goals of the Course:

1) To acquaint students with the basic knowledge concerning the logic and theory of teaching Math in the Grade 2 to 4 classroom
2) To familiarize students with the Grade 2 to 4 Math curricula
3) To familiarize students with National, State and Professional Organization Standards
4) To develop students’ skills in using different teaching strategies to teach Grade 2 to 4 Math in various Mathematical concepts
5) To help students develop general intellectual skills (acquiring and evaluating knowledge, producing and solving problems and communicating their ideas, both orally and in writing).

Course Objectives: Course Student Learning Outcomes (CSLOs)

The course objectives are built around the standards of accreditation agency and University theme.

"Mansfield University undergraduate teacher education" is accredited by the National Council for Accreditation of Teacher Education (NCATE). The complete NCATE elementary education standards can be found at www.ncate.org.

The teacher education program at Mansfield University is also approved by the Pennsylvania Department of Education (PDE). It is designed to prepare teachers for Pennsylvania teaching certification. Students in the program gain skills necessary to prepare elementary students to meet PDE standards. This course will address the PDE Competency of 1.4.

PDE Competency: 1.4 “Subject Matter Pedagogy Content - Early math foundations - develop, implement, assess and modify curriculum and lessons as evidenced by the ability to teach students.” The topics include: Number and Operations; Algebraic Foundations; Geometry; Measurement; and Data Analysis and Probability.

The knowledge base of the teacher education program at Mansfield University is developed around the components of professional practice as described in the ASCD Enhancing Professional practice: A Framework for Teaching document authored by Charlotte Danielson. In addition, the program is also developed based on the standards of professional organization such as ACEI and NCTM. A list of program student learning outcomes (PSLO) can be found
at department website. The ELE4426 course will address the following program student learning outcomes: *(PSLO)* (Please note that *A matrix* that contains the course assessment methods in relation to course student learning outcomes, program student learning outcomes, framework, and PDE competences is provided in *Appendix A*).

1. Developmental Approach to Curriculum Planning:
   Candidates will demonstrate an understanding of the needs, characteristics, and influences that contribute to the developmental needs of young children in the following areas: social, emotional, physical, language and cognition *(NCTM#1, PDE#1.4, ACEI #2.3)*

2. Instructional Planning and Implementation:
   Candidates will demonstrate the ability to develop and implement curriculum goals by planning and using developmentally, culturally, and linguistically appropriate instructional practices *(NCTM#1 through 11, 14, 15, PDE#1.4, ACEI#2.3)*

The following course student learning outcomes *(CSLOs)* are referenced with this framework.

The Mansfield University theme for teacher education is *"Teacher as Reflective Decision-Makers."* The goal of “reflective decision-making” is the guiding concept in the framework of the Mansfield University Teacher Education Program (see graphic below). As reflective decision-makers, graduates of our program will be able to provide effective instruction to their students and use their skills in assessment, reflection, and self-evaluation to make positive changes in their own teaching and curricula. To become reflective decision-makers, students must develop and engage thinking skills and positive dispositions, the two central elements that form the core of the conceptual framework. These elements also serve to strengthen four essential functions in teaching, as presented by Charlotte Danielson (2007; 2009): Planning and Preparation, Classroom Environment, Instruction, and Professionalism. The materials used to create this framework are developmentally appropriate teaching and learning, diversity, and technology. The use of these materials ensures that students are the focus, that their current needs, strengths, and differences are being considered, and that their future success is the intended outcome as the faculty plan how best to prepare them. Teacher candidates gain knowledge and skills relevant to each domain as they progress through the program, with each course and field experience designed to cultivate their thinking skills and positive dispositions in the larger context of reflective decision-making. Advanced teacher education programs continue the focus on reflective decision-making to prepare graduates with the knowledge, skills, and dispositions to be effective teachers and dynamic leaders. The graduate programs are guided by state, national, and international standards. Through coursework, reflection, fieldwork, and internships or practicums, advanced teacher education graduates successfully demonstrate the competencies and standards identified by various professional associations.
It is expected that after completing requirements for this course, students will be able to:

1. Relate characteristics of elementary school students to lesson planning and teaching that will result in successful, meaningful mathematics learning (Framework #1a-f, #3a-e, #4a & b) (PSLO#1,2)
2. Explain national and state standards for elementary mathematics (Framework #1a, d & f) (PSLO#2)
3. Explain strategies and techniques for meeting the needs of exceptional students, especially the learning disabled, the physically disabled, and gifted and talented students (Framework #1a to f, #3a to e, #4a, b) (PSLO#2)
4. Explain and demonstrate a constructivist approach to teaching and learning in elementary mathematics classrooms (Framework #1a to f, #3a to e, #4a, b) (PSLO#2)
5. Describe ways to use technology in teaching school mathematics (Framework #1a to f, #3a to e, #4a, b) (PSLO#2)
6. Identify and demonstrate teacher practices that contribute to a well-managed classroom (Framework #1a~#1e, #2d and e, #3a to e, #4a)
7. Develop lesson plans and teach a mathematics lesson (Framework #1a~#1e, #2d and e, #3a to e, #4a) (PSLO#1,2)
8. Distinguish among various forms of alternative assessment and compare them to traditional assessment practices (Framework #1a~#1e, and #3a to e) (PSLO#2)
9. Name professional organizations and journals associated with teaching elementary mathematics (Framework #4e)
10. List and understand the topics in Grade 2 through 4 Math curriculum (Framework #1a-#1e) (PSLO#2)

Course Format:
This is an online course and you will not meet in a traditional classroom. You will complete your lessons and communicate with your instructor and classmates using email and an interactive website.

The course consists of a sequence of lessons, one that orients you to the Desire2Learn system, and the rest on different areas of assessment. To complete these lessons you will read from a textbook, visit and learn from recommended websites, prepare short essays on assigned topics, answer questions in discussion board, take on-line tests, and complete group projects.

All students must be competent users of email, word processing software and an internet browser. If you do not have these skills then you are not ready for online study.

**Software / Computer Skills:**

This course has an expectation that all students will have access to a web-connected computer running Windows 2010 (or greater), Internet Explorer, and Microsoft Word. Students must understand the use of these software tools to be successful in this course. You will use Internet Explorer to access the course website and submit online assignments. In addition, your papers must be submitted as **Microsoft Word files**. It is up to you to acquire the skills and software to meet this requirement. Tutoring and assistance with questions can be obtained by going to the Information Desk at the North Hall Library of Mansfield University or calling 570-662-4671. Assistance is also available at the Learning Center, Mansfield University or contact your university for assistance.

**Responsibilities of Online Learners:**

As an online learner, you will be responsible for determining the pace and schedule of your work. You can complete the readings and activities at any times that are convenient to you as long as they are submitted before the assignment deadline.

Although you might be completing your work hundreds of miles from Mansfield University, you should expect to have frequent contact with your instructor and classmates via e-mail, electronic document exchange and the online discussion board. All of your assignments will be submitted using these tools and an interactive website. You can also use the online discussion board to ask questions, offer comments, and obtain advice from both your instructor and your fellow students.

**Lesson Format:**

For each lesson, you will visit the course website to obtain your instructions. You will then complete your work by doing some or all of the tasks listed below.

- Read assigned materials from the textbook.
- Visit recommended websites to read or obtain data.
- Complete activities designed to apply what you have learned or deepen your understanding.
- Participate in discussion board in D2L
- Complete on-line tests.
- Develop a lesson plan in group using the departmental designed template and rubric
- Develop a lesson plan and administer to a grade 2-4 student and write a reflection paper.
- Submit all work for that lesson as specified on the course website.
- Your instructor will respond to your work a few days after the lesson due date.

Lesson Availability and Due Dates:

All lessons will be posted at the beginning of the semester/session in Desire2Learn and you may begin working on a lesson at your own pace. A list of the lessons and the scheduled due dates are shown in the table below.

Input:
The main sources of information are readings, discussions and lecture outlines. Discussions will focus on current grade 2 to 4 Math curriculum. The lecture outlines in a PowerPoint form can be found in the content area of D2L. The PowerPoint provides students key points in the chapter. Students should read the textbook and focus on the PowerPoint slides and participate in the discussion board.

Output:
The extent to which students attain the goals of the course will be assessed from their performance on written examinations, participation in the discussion board, individual lesson plan, implementation of the lesson and a reflection paper as well as a group project of a lesson plan.

Required textbook:

- LiveText CD software: Maybe purchased at the bookstore

Bibliography


Evaluation Scheme

Progress tests 20% (CSLO #1, #2, #3, #4, #5, #8, #9, PSLO #1,#2)  
Individual Project 20% (CSLO #1, #2, #4, #5, #7, PSLO #1,#2)  
Group Project 20% (CSLO #1, #2, #4, #5, #7, PSLO #1,#2)  
Attendance/Discussion board 25% (CSLO #6, #10, PSLO #2)  
Final Exam 15% (CSLO #1, #2, #3, #4, #5, #8, #9, PSLO #1,#2)  

Two progress tests are scheduled for the dates shown in the course calendar below. It consists of multiple choice questions. It will be posted in Desire2Learn “quizzes” for the designated 75 minutes in the course calendar. Should any technical problems occur during the testing time, students must inform the instructor immediately via e-mail or phone.

The individual project requires students to select a topic from grade 2 to grade 4 Math curricular, create a lesson plan and administer the lesson to one of the targeted grade students and write a reflection paper on the project. The guideline for this assignment is detailed in a separate file and located in the content area of D2L. The grading criteria will be based on the applications of the theories learned from the textbook, the clarity of the lesson plan and implementation, the organization of the content, and the writing skills. The project should be typed, double spaced, font 12, in English. In terms of grading, a brief and concise argument rather than a long paper is desired. The due date for this assignment is shown in the course schedule below. Late submission will not be accepted for credit.

There is a group project in this course. Students will form a group in the discussion board in D2L. Please watch for the announcement in D2L once class starts. Students are required to work in the group to create a lesson plan. Guideline for this project is also detailed in a separate file and located in the content area of D2L. Students are responsible for submitting their assignment on time. Late submission of any assignment will not be accepted. All of the projects / assignment need to be typed, double spaced, font 12, in English.

Students are required to participate in the discussion board. The participation grade includes both Desire-2-Learn orientation assignment and a few forums posted in “discussion board issues” forum. The 3 tasks of the orientation assignment are located in the content area of D2L under the module of “Desire 2 Learn orientation assignment”. There will also be a few forums posted in discussion board. Students will be assigned to different group for the assignment and discuss specific topics within the forum. Students must check the course regularly so that they do not miss any discussions in the discussion board. Students are also encouraged to post their comments and suggestions in the discussion board “course feedback forum”.

The final examination will consist of multiple choice questions, and will be based on all material covered in the course. Please note that there will be NO supplemental examination in this course.
Important notes for the course:

1. Please note: **Late submission of any assignment will not be accepted for credit. All of the assignments need to be typed.**
2. Please note that the **group lesson plan project** in this course may be used as an artifact in your professional portfolio in the education program.
3. Please also note that you must have “clearance” completed in order to access the public school classroom for your individual project should you choose to administer the test in the classroom setting (although it is not required). For information regarding “clearance” please visit department home page – field experience.

MU policy states: “Students with documented learning disabilities, physical challenges, or other significant medical conditions that may affect their learning in this course should meet with the University’s Disability Advisor in the Department of Academic and Human Development (141 South Hall, Phone: 662-4436) as soon as possible. The Disability Advisor will arrange to provide your professors with an appropriate letter so that we may serve your particular needs more effectively. If you have a disability that requires classroom or testing accommodations, the advisor will also clarify appropriate arrangements.”

Letter grades and their percentage equivalents are as follows:

- A 95%-100%
- A- 90%-94%
- B+ 87%-89%
- B 84%-86%
- B- 80%-83%
- C+ 77%-79%
- C 74%-76%
- C- 70%-73%
- D+ 67%-69%
- D 64%-66%
- D- 60%-63%
- F 59% and below
## Planned Schedule for Course Topics

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Chapter</th>
<th>Due Date/time (submit all assignment in D2L)</th>
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</thead>
<tbody>
<tr>
<td>08/26 to 09/01</td>
<td>Desire2Learn orientation /Introduction</td>
<td>1</td>
<td>Desire2Learn orientation assignment due: 08/29 at 11:59pm</td>
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<tr>
<td></td>
<td>Teaching Mathematics: Influences and Directions</td>
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<td></td>
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<tr>
<td>09/2 to 09/08</td>
<td>Learning and Teaching Mathematics</td>
<td>2</td>
<td></td>
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<tr>
<td></td>
<td>Developing Mathematical Thinking and Problem-Solving Ability</td>
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<tr>
<td>09/09 to 09/15</td>
<td>Assessing Mathematics Understanding</td>
<td>4</td>
<td>Discussion board assignment #1 due: 9/15 at 11:59pm (create testing questions for each topic)</td>
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<td>09/16 to 09/22</td>
<td>Developing Number Concepts</td>
<td>5</td>
<td>Discussion board assignment #2 due: 9/22 at 11:59pm</td>
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<td></td>
<td>Developing Understanding of Numeration</td>
<td>6</td>
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<td></td>
<td>Developing Whole-Number Operations</td>
<td>7</td>
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<td>1 to 7</td>
<td>Progress test #1 (1-7) on-line in D2L (due 9/29 at 11:59pm)</td>
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<td>09/30 to 10/06</td>
<td>Whole Number Operations: Basic Facts</td>
<td>8</td>
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<td>10/07 to 10/13</td>
<td>Estimation and Computational Procedures for Whole Numbers</td>
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<td>10/14 to 10/20</td>
<td>Developing Fraction Concepts</td>
<td>10</td>
<td>Individual project due: 10/20 at 11:59pm</td>
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<td>10/21 to 10/27</td>
<td>Developing Fraction Computation</td>
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<td>Developing Decimal Concepts and Computation</td>
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<td>10/28 to 11/03</td>
<td>Understanding Ratio, Proportion, and Percent</td>
<td>13</td>
<td>Discussion board assignment #3 due: 11/03 at 11:59pm</td>
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<td>11/04 to 11/10</td>
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<td>8 to 13</td>
<td>Progress test #2 (8-13) on-line in D2L (due 11/10 at 11:59pm)</td>
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<td>11/11 to 11/17</td>
<td>Developing Geometric Thinking and Spatial Sense</td>
<td>14</td>
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<td>11/18 to 11/24</td>
<td>Developing Measurement Concepts and Skills</td>
<td>15</td>
<td>Group lesson plan project due: 11/24 at 11:59pm</td>
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<td>11/25 to 12/01</td>
<td>Collecting, Organizing, and Interpreting Data</td>
<td>16</td>
<td>Discussion board assignment #4 due: 12/01 at 11:59pm</td>
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<td>12/02 to 12/06</td>
<td>Developing Algebraic Thinking</td>
<td>17</td>
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Final Exam due: 12/09 at 11:59pm (Available 12/07 at 12:00am)

Appendix A: Course Assessment and the Student Learning Outcomes Matrix

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Course SLO</th>
<th>Program SLO</th>
<th>PDE competence</th>
<th>Framework</th>
<th>ACEI/NCTM</th>
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<td>#1, #2, #4, #5, #7</td>
<td>#1, #2</td>
<td>#1.4</td>
<td>#1a-f, #3a-e, #4a, 4b</td>
<td>#2.3/ #1 -11</td>
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<td>#1, #2, #3, #4, #5, #8, #9</td>
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<td>#1.4</td>
<td>#1a-f, #3a-e, #4a, 4b and 4e</td>
<td>#2.3/ #1 -11</td>
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<td>#1, #2</td>
<td>#1.4</td>
<td>#1a-f, #3a-e, #4a, 4b</td>
<td>#2.3/ #1 -11, 14 -15</td>
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<td>#1.4</td>
<td>#1a-#1e, #2d and e, #3a to e, #4a</td>
<td>#2.3/ #1 -11, 14 -15</td>
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<tr>
<td>Final Exam</td>
<td>#1, #2, #3, #4, #5, #8, #9</td>
<td>#1, #2</td>
<td>#1.4</td>
<td>#1a-f, #3a-e, #4a, 4b and 4e</td>
<td>#2.3/ #1 -11</td>
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