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## ACE 10 Assessment in Actuarial Science

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# ACE 10 Assessment in Actuarial Science

## Actuarial Science 475/875: Actuarial Applications in Practice

*A capstone course designed to bridge the gap between actuarial coursework and actuarial practice*

Instructors: Warren Luckner, FSA, CFA and Sue Vagts, FSA



### ACTS 475/875 Student Learning Objectives

1. To have students satisfy ACE student learning outcome 10: Generate a creative or scholarly product that requires broad knowledge, appropriate technical proficiency, information collection, synthesis, interpretation, presentation, and reflection.
2. To develop an understanding of the practical application of actuarial concepts as described in the readings.
3. To introduce students to actuarial software programs currently used by actuaries.
4. To introduce students to how personal and professional ethics are incorporated in actuarial practice.
5. To help develop writing skills, particularly in the communication of the results of actuarial analysis
6. To help develop the ability to work cooperatively with others.
7. To develop a better understanding of each student’s ability to understand and apply actuarial concepts.

### Sample of Projects Assigned to Students

1. Ethics and Professionalism: INDIVIDUAL report on “Resources Supporting Ethical Conduct in the Actuarial Profession”.
2. Casualty Actuarial Case Study: GROUP project where students calculate and recommend a loss reserve for a company’s block of auto policies, given historical auto accident data provided by a company in the industry.
3. Term Insurance Pricing: GROUP project where students calculate the premiums to be charged for a term life insurance policy, calculations are done both in Excel and in various actuarial modeling software packages.
4. Health Care Pricing: INDIVIDUAL report, students price premiums for health insurance on both a Pre-Reform and Post-Reform basis given historical data provided by a company in the industry.
5. Asset Adequacy Analysis: GROUP oral and written report “peer reviewing” the “Statement of Actuarial Opinion” written by a Valuation Actuary on the adequacy of the company reserves in light of the assets backing those reserves and the performance of both under various economic scenarios.

### ACE 10 Assessment: Current Status

So far...

All we have done is collect random samples of student work over the last 5 years.

### ACE 10 Assessment: Plan

We will have the scholarship committee of our external advisory board review the sample of projects collected and evaluate the course using the Rubric below. After they have completed their review, we will engage in a couple hours of conversation regarding the course and the level to which each ACE 10 objective is being met. We will then brainstorm suggested improvements to the course.

	4 Exemplary	3 Good	2 Average	1 Below Average
Broad Knowledge	Uses a variety of in-depth information from relevant sources representing various points of view/approaches.	Uses in-depth information from relevant sources representing various points of view/approaches.	Uses information from relevant sources representing limited points of view/approaches.	Uses information from irrelevant or inappropriate sources.
Technical Proficiency	All elements of the methodology or theoretical framework are appropriate and skillfully developed.	Elements of the methodology or theoretical framework are appropriate; however, more subtle elements are ignored or unaccounted for.	Elements of the methodology or theoretical framework are missing, incorrectly developed, or unfocused.	Key elements of the methodology or theoretical framework are misunderstood.
Information Collection & Synthesis	Collects and synthesizes information to reveal significant insights, themes, or ideas.	Collect and synthesizes information to reveal some significant insights, themes, or ideas.	Collects and synthesizes information but does not effectively reveal insights, themes, or ideas.	Does not collect and/or synthesize information in appropriate or useful way.
Interpretation	Accurate and insightful explanation of skills, abilities, theories, or methodologies to solve problems or explore complex issues.	Accurate and adequate explanation of skills, abilities, theories, or methodologies to solve problems or explore complex issues.	Somewhat inadequate or partially inaccurate explanation of skills, abilities, theories, or methodologies to solve problems or explore complex issues.	Implausible or inaccurate understanding of skills, abilities, theories, or methodologies to solve problems or explore complex issues.
Presentation	Includes variety of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) that make appropriate reference to information or analysis that significantly supports the presentation and establishes the presenter’s authority on the topic.	Includes materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) that make appropriate reference to information or analysis that generally supports the presentation and establishes the presenter’s authority on the topic.	Includes some materials that appropriately reference information or analysis that partially supports the presentation and somewhat establishes the presenter’s authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) that reference information or analysis that minimally supports the presentation and does not establish the presenter’s authority on the topic.

### Quotes from Former Students

I just wanted to say, first of all, that ACTS 475 has already proven to be helpful, as I am using MG-ALFA for most of my work here, so learning a few of the basics in that class is already making a difference in my initial learning curve. Also, I really wanted to thank you and everyone at UNL for ensuring that the graduates of the Actuarial Science program are prepared for the real world. Not only am I ahead of many of my fellow students here on exams, but I feel prepared and comfortable on a professional level for the workplace that I have entered. That is definitely a reflection of my experience in the program and the level of quality of the instruction that I received from the Actuarial Science Staff at UNL.

I didn’t think that I would have a shot at this job, but they were really impressed with the projects that I did and the software I learned in the ACTS 475 class. I didn’t have any internship experience so I simply put the projects that I did in that class on my resume. Thank you for providing UNL students with such a great and useful class. I will start my new job next week!