2016-17 Student Learning Assessment Report, Academic

Program: Actuarial Science	Degree: Major		Department John ONeill	Head:	Submitted By: John ONeill	Date Submitted: 06/07/2017	
Mission: The Actuarial Science program and the Risk Management Certificates were approved by the Siena College BOI and NYS Education Department over the Spring and Summer of 2008 for offering in the 2009-2010 academic year. These programs were designed to be a interdisciplinary programs jointly housed in the School of Business and School of Science to meet the standards set forth by the Society of Actuaries and Casualty Actuary Society encapsulating educational background central to the needs of aspiring actuaries. First and foremost, students in these programs need to have strong mathematical backgrounds stemmed in classical treatment of mathematics. Students also need working knowledge of the types of problems encountered in business by actuaries particularly in the areas of Economics and Finance. They also need a firm understanding of the mathematical principles that govern those disciplines. Due to the interdisciplinary nature of the program, most assessment will take place by compiling the results of component courses that contribute towards other majors; thus the development of the assessment plan for actuarial science is highly dependent on the progress of the individual departments (Mathematics, Economics and Finance) in their own assessment plans.							
 Major/Program Student Learning Outcomes Students will be able to 	2. Phase	3. Assessment I (Planning/ det	Procedures ermining)	4. Assessment Results (Collecting/ ana lyzing)	5. Use of Results (Discussing/ using results)	6. Determining if changes impacted student learning	
 Solve basic and advanced mathematical problems. Criteria: (How do you know students are achieving learning outcome?) At least 80% of students score 60% or greater on each skill. 	Planning Collecting Discussing	Method: (ex. tests, pr research paper) Test performance Using a Sample of Si No If yes, describe your	resentations, tudents? sample.	Calculus 1 (Fall 2015): Criteria was met for 2 of 8 skills assessed. Calculus 2 (Spring 2016): Criteria was met for 0 of 4 skills assessed. Learning Outcome Met?	Remediation will continue in MATh 371 through the use of just-in-time methodology and reinforcing skills level knowledge.		

		When does assessment occur? MATH 1110 and MATH 120 How often does assessment occur? Once	No		
 2. Apply methods learned in the solutions of those problems to those encountered in actuarial science. Criteria: (How do you know students are achieving learning outcome?) At least 80% of students score 70% or higher for each concept 	Collecting Discussing	Method: (ex. tests, presentations, research paper) Final exam performance Using a Sample of Students? Yes If yes, describe your sample. ACSC students from CRN 40185 When does assessment occur? MATH 371 How often does assessment occur? Annually	On 5 of the 9 problems assessed, at least 80% of the actuarial students scored above 70%. (Counting, Bayes Theorem, Discrete distributions, Normal distributions, Normal distribution, Deductible Calculation) Of the remaining 4 problems assessed, at least 80% scored above 60 (Relationship between Poisson and exponential, Multivariate Descriptions) The remaining two problems were failures: Inverse function theorem and Min/Max Density Learning Outcome Met? (Based on Criteria) Yes	It should be noted that a full week of class time was lost to inclement weather; an anomaly.	

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imancial roceasting, pricing and investment. PriM EXAM Pri	problems in fields such as insurance.	Discussing	research paper)	aggregate of over	rewritten to disclude Financial	
investment. Using a Sample of Students? topics, Payoff using as the treatment of financial Diagrams (b) clipit and is no lipit and lipit and exact lipit and exact lipit and lip	financial forecasting, pricing and	5	Final Exam	70% overall on 8	derivatives and include interest rate	
Criteria: (How do you know students) Using a Sample of Students? Diagrams for Financial Derivatives, Profit Financial Derivatives, Profit For Financial Derivatives, Profit For Financial Derivatives, Profit Pervatives,	investment.			topics; Payoff	swaps as the treatment of financial	
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Criteria (How do you know students are achieving demingo uctome?) At least 50% of students meet or exceed a score of 70%. When does assessment occur? MATH/QBUS480 How often does assessment occur? How often does assessment occ			Using a Sample of Students?	Financial	longer required by the SOA/CAS for	
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			Yes	
 4. Describe fundamental practice in business from the viewpoint of economics and finance. Criteria: (How do you know students 	Not Done	Method: (ex. tests, presentations, research paper)	Learning Outcome Met? (Based on Criteria)	
are achieving learning outcome?) At least 80% of students meet or exceed a score of 70%		Using a Sample of Students?		
		If yes, describe your sample.		
		When does assessment occur?		
		How often does assessment occur?		
5. Effectively communicate quantitative results in oral and written presentation, including the construction of elementary proofs	Planning2+ Collecting	Method: (ex. tests, presentations, research paper) Oral: Presentation Written: Paper	Oral communication in MATH 470 was not assessed in Fall 2016.	
Criteria: (How do you know students are achieving learning outcome?) Writing: Use of written School of		Using a Sample of Students? Yes	Written communication will be assessed in Fall 2017 via	
Business rubric applied to ACSC students in ECON 430. 80% will score over 70% on the rubric. Oral: Team Presentations in Math 470		If yes, describe your sample. Actuarial students in ECON 430 Fall 2017	econometrics analysis in ECON 430.	
		When does assessment occur? ECON 430 and MATH 470, respectively	Learning Outcome Met? (Based on Criteria) Yes	
		How often does assessment occur? Each year		

 6. Effectively utilize technology in the organization of data and solving problems. Criteria: (How do you know students are achieving learning outcome?) Use of a rubric utilized by the school of business; 80% will score over 75% on the assignment 	Planning2+ Not Done	Method: (ex. tests, presentations, research paper) Microsoft Excel Project Using a Sample of Students? Yes If yes, describe your sample. ACSC students in MATH 470 When does assessment occur? Fall 2017 How often does assessment occur? Once every two years	Learning Outcome Met? (Based on Criteria)	
7. Be employable in actuarial fields. Criteria: (How do you know students are achieving learning outcome?) 80% will be employed as an actuary or related field or seeking graduate degrees.	Collecting	Method: (ex. tests, presentations, research paper) Student Self-Report Using a Sample of Students? If yes, describe your sample. When does assessment occur? Prior to graduation How often does assessment occur? Annually	Of the 10 students graduating AY 2016-2017 5 are employed as actuaries at Mercer, Willis- Towers-Watson, the Department of Financial Services and Farm Family Insurance. 2 others are employed in finance analysis. One is a foreign national who will be returning to romania. 2 others are still seeking employment. They have not passed Exam P or exam FM at this point.	

	Learning Outcome Met?	
	(Based on Criteria) Yes	