



**Northern Illinois
University**

Assessment Plan

College of Liberal Arts and Sciences
Department of Statistics and Actuarial Science

Bachelor of Science in Actuarial Science

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1. Introduction

This is a new degree program, which stems from the Bachelor of Science in Mathematics with emphasis in Actuarial Science. The goal of this program is to prepare students for professional actuarial careers.

2. Student Learning Outcomes (SLOs)

1. Formulation of actuarial problems: Students should be able to formulate real-world applications within the proper framework.
2. Essential skills for actuarial analysis: Students should be able to use data obtained from real world experiments to obtain the proper calculations and conclusions based on sound actuarial practice and theory.
3. Knowledge of data analysis: Students breadth of knowledge of statistical methodology should be broad enough so that they will be able to address a wide variety of statistical problems often encountered in actuarial applications.
4. Effective oral and written communication skills: Students should be able to effectively communicate their results to those within the actuarial profession, as well as to those who may only have very basic technical training.
5. Working knowledge of popular software: Students should be proficient in the most common types of programming languages and statistical software used in the actuarial industry.
6. Validation by Educational Experience: By graduation all students should have credit for all Validation by Educational Experience (VEE) requirements of the Society of Actuaries and the Casualty Actuarial Society.
7. Professional Exams: Students should be able to pass at least one professional actuarial exam.

3. Program-by-Baccalaureate Student Learning Outcomes Matrix

Program Student Learning Outcome	Baccalaureate Student Learning Outcomes							
	A. Global inter-connections and inter-dependencies	B. Intercultural competencies	C. Analyze human life and natural world inter-connections	D. Critical, creative, and independent thought	E. Communicate clearly and effectively	F. Collaborate with others	G. Quantitative and qualitative reasoning	H. Apply knowledge/skills creatively
1. Formulation of actuarial problems	M			S	M	M	S	S
2. Essential skills for actuarial analysis				S			S	S
3. Knowledge of data analysis				S		S	S	S
4. Effective oral and written communication skills	S	S			S	S		
5. Working knowledge of popular software						M	M	M
6. Validation by Educational Experience								
7. Professional Exams								
Overall	S	M		S	S	S	S	S
<i>Note.</i> Gauge whether each program outcome strongly supports (S), moderately supports (M), or doesn't support (leave blank) each baccalaureate learning outcome								

4. Curriculum Map

Course	Program Student Learning Outcomes						
	1. Formulation of actuarial problems	2. Essential skills for actuarial analysis	3. Knowledge of data analysis	4. Effective oral and written communication skills	5. Working knowledge of popular software	6. Validation by Educational Experience	7. Professional Exams
STAT 300	B	B	B	B	B		B
ACSC 350	D	D		B			P
ACSC 400				B			D

Course	Program Student Learning Outcomes							
	1. Formulation of actuarial problems	2. Essential skills for actuarial analysis	3. Knowledge of data analysis	4. Effective oral and written communication skills	5. Working knowledge of popular software	6. Validation by Educational Experience	7. Professional Exams	
ACSC 405	D	D		D			P	
STAT 410	D	D	D	D		P		
STAT 415		D	D	D	P			
ACSC 417	P	P	P	P	P			
ACSC 450	P	P		P			P	
MATH 229	D	D					D	
MATH 230	D	D					D	
MATH 232	D	D					D	
MATH 240	D	D					D	
CSCI 240					D			
ACCY 288		B				P		
ECON 260		B				P		
ECON 261		B				P		
FINA 320		B				P		
<i>Note.</i> Course supports the outcome at the B=beginning, D=developing, or P=proficient level.								

5. Assessment Methods

EXPLANATION OF ASSESSMENT METHODS TABLE

Assessment Method	Explanation					
	Description	Student-Level Achievement ^a	Program-Level Target ^b	When Data Will be Collected	Person Responsible	SLOs
ACSC 350 assessment question	Students are assigned a question on the final exam in which they are to: (1) formulate a given real-world application within the proper actuarial framework; (2) use data given to obtain the proper calculations and conclusions; (3) write the conclusions appropriately.	A student will receive a score of Meets (3) or better on each of the three performance criteria on the rubric.	75% of all students will meet the student-level target (i.e., receive a score of Meets (3) or better on each of the three performance criteria on the rubric).	During the final exam for ACSC 350	Course instructor	1, 2, 4

Assessment Method	Explanation					
	Description	Student-Level Achievement ^a	Program-Level Target ^b	When Data Will be Collected	Person Responsible	SLOs
ACSC 450 assessment question	Students are assigned a question on the final exam in which they are to: (1) formulate a given real-world application within the proper actuarial framework; (2) choose the appropriate methodology for the particular problem; (3) use data given to obtain the proper calculations and conclusions; (4) use software to perform any necessary calculations, and/or interpret software output; (5) write the conclusions appropriately.	A student will receive a score of Meets (3) or better on each of the five performance criteria on the rubric.	85% of all students will meet the student-level target (i.e., receive a score of Meets (3) or better on each of the five performance criteria on the rubric).	During the final exam for ACSC 450	Course instructor	1, 2, 3, 4, 5
Completion of VEE credits	Each student record is reviewed to check the courses that satisfy the VEE requirements: STAT 410, ACCY 288, ECON 260, ECON 261, FINA 320.	A student will receive a score of Meets (3) if they have received a B- or better in each of the five courses.	95% of all students will meet the student-level target (i.e., receive a score of Meets (3)).	At the end of each student's last semester	Office Manager	6
Passing professional exams	The Society of Actuaries will be consulted to determine the passing rates on NIU students on the professional actuarial exams.	A student will receive a score of Meets (3) or better if they have passed at least one professional exam.	75% of all students will meet the student-level target (i.e., receive a score of Meets (3) or better).	At the end of the Spring semester	Office Manager	7

Assessment Method	Explanation					
	Description	Student-Level Achievement ^a	Program-Level Target ^b	When Data Will be Collected	Person Responsible	SLOs
Entry into graduate programs/ actuarial employment	Percentage of students obtaining admission into graduate programs or obtaining an actuarial related job	A student will receive a score of Meets (3) or better if they obtain admission into a graduate program or obtain an actuarial related job in the next six months following graduation	90% of all graduating students	Six months following the student's graduation	Office Manager	1, 2, 3, 4, 5
Graduation survey	Each student is encouraged to fill out an online survey on their experiences in the program. The survey specifically addresses the exposure of students to different topics in the program as well as their self-scored proficiency in each.	Each student will provide a self-evaluated proficiency score for each area in the survey.	75% of students surveyed will assign themselves a proficient score in each of the areas addressed by the survey.	The last week of the Spring semester	Office Manager	1, 2, 3, 4, 5

ASSESSMENT METHODS-BY-OUTCOMES MATRIX

Assessment Method	Program Student Learning Outcome						
	1. Formulation of actuarial problems	2. Essential skills for actuarial analysis	3. Knowledge of data analysis	4. Effective oral and written communication skills	5. Working knowledge of popular software	6. Validation by Educational Experience	7. Professional Exams
ACSC 350 assessment question	F, D	F, D		F, D			F, D

Assessment Method	Program Student Learning Outcome						
	1. Formulation of actuarial problems	2. Essential skills for actuarial analysis	3. Knowledge of data analysis	4. Effective oral and written communication skills	5. Working knowledge of popular software	6. Validation by Educational Experience	7. Professional Exams
ACSC 450 assessment question	S, D	S, D	S, D	S, D	S, D		
Completion of VEE credits						S, D	
Passing professional exams	S, D	S, D					S, D
Entry into graduate programs/ actuarial employment	S, I	S, I	S, I	S, I	S, I	S, I	S, I
Graduation survey	S, I	S, I	S, I	S, I	S, I		
<i>Note.</i> F=formative assessment, S=summative assessment, D=direct assessment, and I=indirect assessment.							