Mathematics Statistics Department, TCNJ
Learning Outcomes Map

Course #	Course Title	General Learning Outcomes				Applied Math Program Learning Outcomes					Liberal Arts Math Program Learning Outcomes					Statistics Program Learning Outcomes						Mathematics Secondary Education Program Learning Outcomes									
		Students should develop the ability to understand and write proofs.	Students should be able to effectively communicate mathematical and/or statistical ideas to diverse audiences, both orally and in writing.	Students should be effective problem solvers, using technology and connections between different areas of disciplinary knowledge as appropriate.	Students should demonstrate engagement in their discipline.	Master theoretical foundations based on mathematical rigor through proofs.	Apply mathematical theory to model and solve problems dealing with physical, natural and societal problems.	Use technology to solve computational problems, including simulation and visualization of mathematical models.	Provide clear and effective written and oral communication to diverse audiences.	Develop content knowledge in a related discipline.	The ability to understand and write mathematical proofs at the advanced undergraduate level.	The ability to bring together concepts from various areas of mathematics to solve mathematical problems.	The ability to effectively communicate mathematical ideas to their peers, both orally and in writing.	The ability to use technology appropriately to investigate mathematical problems.	Engagement in mathematics as a discipline.	Understanding Basic Principles.	Understanding Theoretical Underpinnings.	Familiarity with Statistical Techniques.	Proficiency with Technology.	Ability to Communicate.	Post Graduation Success and Feedback.	Understanding Mathematics Content Knowledge.	Making Connections.	Effective Utilization of Problem Solving.	Ability to Communicate Clearly.	Understand and Implement Standards and Recommendations for Teaching.	Utilize Research to Inform Classroom Practice	Effectively Utilize Technology in the Teaching and Learning of Mathematics.	Appropriate Implementation of Activities and Instructional Strategies.	Motivate and Energize the Learning of Mathematics.	Understand Principles and Implementation of Assessment.
Core Courses																															
MAT 127	Calculus A				x												x					x									
MAT 128	Calculus B				x												x					x									
MAT 200	Proof Writing through Discrete Math	x			x	x					x				x		x					x									
MAT 205	Linear Algebra: Theory and Applications	x		x	x	x	x	x			x			x	x		x		x			x						x			
MAT 229	Multivariable Calculus				x										x		x					x									
Major Requirements (for specific programs)																															
MAT 255	Perspectives on the Development of Math				x																										
STA 215	Statistical Inference				x											x	x	x	x		x	x						x			
MAT 301	Number Theory	x		x	x						x				x							x									
MAT 305	Abstract Algebra	x		x	x						x				x							x									
MAT 310	Real Analysis	x		x	x	x					x				x																
MAT 316	Probability	x		x	x	x									x							x									
MAT 326	Differential Equations	x		x	x	x	x	x	x	x	x			x	x																
MAT 351	Geometry	x		x	x						x				x							x						x			
MTT 380	Methods of Teaching Mathematics I		x		x																		x	x	x	x	x	x	x	x	x
MTT 390	Methods of Teaching Mathematics II		x		x																		x	x	x	x	x	x	x	x	x
STA 305	Regression Analysis			x	x											x	x	x	x		x										
MAT 498	Capstone in Mathematics		x	x	x	x	x	x	x	x	x	x	x	x	x																
MTT 490	Student Teaching		x		x																			x	x	x	x	x	x	x	x
STA 410	Mathematical Statistics			x	x											x	x	x													
STA 498	Capstone in Statistics		x	x	x											x	x	x	x	x	x										
Major Options																															
MAT 315	Topics in Linear Algebra			x	x	x	x	x		x	x			x	x																
MAT 317	Linear Programming			x	x	x	x	x		x	x			x	x																
MAT 320	Complex analysis			x	x	x	x	x			x			x	x																
MAT 331	Numerical Methods			x	x	x	x	x		x	x			x	x																

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MAT 370	Topics in Mathematics			x	x	x	x			x	x				x																
STA 303	Design of Experiments			x	x											x	x	x	x		x										
STA 304	Sampling and Nonparametirc Statistics			x	x											x	x	x	x		x										
STA 306	Applied Multivariate Analysis			x	x											x	x	x	x		x										
STA 307	Data Mining and Predictive Modeling			x	x											x	x	x	x		x										
STA 314	Statistical Quality Control			x	x											x	x	x	x		x										
STA 318	Operations Research			x	x											x	x	x	x		x										
MAT 403	Advanced Calculus			x	x						x				x																
MAT 405	Topology			x	x						x				x																
MAT 407	Projective Geometry			x	x						x				x																
MAT 440	Mathematical Logic			x	x						x				x																
MAT 451	Seminar in Algebra			x	x						x				x																
MAT 452	Seminar in Geometry and Topology			x	x						x				x																
MAT 453	Seminar in Analysis			x	x	x	x				x				x																
MAT 454	Seminar in Applied Mathematics			x	x	x	x	x		x	x				x																