MATHEMATICS MAJOR CHECKLIST

Course Number	Course Title	Suggested Year	Done
CORE (6 units)			
Course Number	Course Title	Suggested Year	Done
MATH 121	Calculus I	FR	
MATH 122	Calculus II	FR	
MATH 131	Discrete Mathematics	FR/SO	
MATH 201	Linear Algebra	SO	
MATH 491	Senior Capstone	SR	
CPSC 120	Programming	FR/SO	
STATISTICS COURSE (At least 1)			
STAT 210	Statistical Methods I	SO/JR	
STAT 220	Statistical Methods II	SO/JR	
200-LEVEL THEORETICAL COURSE (At least 1)			
MATH 268	Combinatorics and Graph Theory	SO/JR	
MATH 278	Foundations of Geometry	SO/JR	
MATH 288	Special Topics in Mathematics	SO/JR	
300-LEVEL APPLIED COURSE (At least 1)			
MATH 311	Operations Research	JR/SR	
MATH 321	Vector Calculus	JR/SR	
MATH 331	Differential Equations	JR/SR	
300-LEVEL THEORETICAL COURSE (At least 1)			
MATH 361	Abstract Algebra	JR/SR	
MATH 381	Real Analysis	JR/SR	
ELECTIVE COURSES (4 Units)			
Any 200-level or above Mathematics or Statistics course. Additional courses to those listed above:			
MATH 205	Research Experience (when combined with another 0.5 unit course)		
MATH 332	Applied Differential Equations		
MATH 342	Numerical Analysis		
MATH 371	Topology		
MATH 388	Topics in Mathematics		
MATH 406	Independent Study (or MATH 405 and MATH 407)		
MATH 416	Internship		
ACSI 301	Theory of Interest		
STAT 301	Mathematical Statistics		
STAT 303	Experimental Design		
STAT 304	Applied Regression Analysis		
STAT 406	Independent Study		
STAT 416	Internship		
At most one of:	CPSC 450, PHYS 330, PHYS 350, or PHYS 390		
	Total Units (At least 14*)		

* Students with competency for MATH 121 need only complete 13 units.

Note that this check sheet is intended as a guide; the Academic Catalog contains more details and nuances, and students are encouraged to check that book along with the academic advisors as needed.

See the following pages for additional information on Concentrations.

APPLIED MATHEMATICS CONCENTRATION

CORE (5 units)			
Course Number	Course Title	Suggested Year	Done
MATH 268	Combinatorics and Graph Theory	SO/JR	
MATH 311	Operations Research	JR/SR	
MATH 321	Vector Calculus	JR/SR	
MATH 331	Differential Equations	JR/SR	
MATH 332	Applied Differential Equations	JR/SR	
ELECTIVE COURSE (1 Unit)			
Any Mathematics course beyond MATH 201, or any Statistics course 200-level or above. Additional courses may be approved by the mathematics program coordinator.			
MATH 205	Research Experience (when combined with another 0.5 unit course)		
MATH 278	Foundations of Geometry		
MATH 288	Special Topics in Mathematics		
MATH 342	Numerical Analysis		
MATH 361	Abstract Algebra		
MATH 371	Topology		
MATH 381	Real Analysis		
MATH 406	Independent Study (or MATH 405 and MATH 407)		
MATH 416	Internship		
ACSI 301	Theory of Interest		
STAT 301	Mathematical Statistics		
STAT 303	Experimental Design		
STAT 304	Applied Regression Analysis		
STAT 406	Independent Study		
STAT 416	Internship		
STAT 210	Statistical Methods I		
STAT 220	Statistical Methods II		

Pre-requisite Courses			
The courses listed below are prerequisites for courses in the concentration.			
Course number	Course Title	Required For	
MATH 121	Calculus I	MATH 122	
MATH 122	Calculus II	MATH 321	
MATH 131	Discrete Mathematics	MATH 268	
MATH 201	Linear Algebra	MATH 331, MATH 311	

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THEORETICAL MATHEMATICS CONCENTRATION

CORE (5 units)			
Course Number	Course Title	Suggested Year	Done
MATH 268	Combinatorics and Graph Theory	SO/JR	
MATH 278	Foundations of Geometry	SO/JR	
MATH 321	Vector Calculus	JR/SR	
MATH 361	Abstract Algebra	JR/SR	
MATH 381	Real Analysis	JR/SR	
ELECTIVE COURSE (1 Unit)			
Any Mathematics course beyond MATH 201, or any Statistics course 200-level or above. Additional courses may be approved by the mathematics program coordinator.			
MATH 205	Research Experience (when combined with another 0.5 unit course)		
MATH 288	Special Topics in Mathematics		
MATH 311	Operations Research		
MATH 331	Differential Equations		
MATH 332	Applied Differential Equations		
MATH 342	Numerical Analysis		
MATH 406	Independent Study (or MATH 405 and MATH 407)		
MATH 416	Internship		
ACSI 301	Theory of Interest		
STAT 210	Statistical Methods I		
STAT 220	Statistical Methods II		
STAT 301	Mathematical Statistics		
STAT 303	Experimental Design		
STAT 304	Applied Regression Analysis		
STAT 406	Independent Study		
STAT 416	Internship		

Pre-requisite Courses		
The courses listed below are prerequisites for courses in the concentration.		
Course number	Course Title	Required For
MATH 121	Calculus I	MATH 122
MATH 122	Calculus II	MATH 321
MATH 131	Discrete Mathematics	MATH 268
MATH 201	Linear Algebra	MATH 361

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ACTUARIAL MATHEMATICS CONCENTRATION

REQUIRED COURSES (6 units)			
Course Number	Course Title	Suggested Year	Done
STAT 210	Statistical Methods I	SO/JR	
STAT 220	Statistical Methods II	SO/JR	
STAT 301	Mathematical Statistics	JR/SR	
ACSI 201	Fundamental Techniques in Accounting and Risk	SO/JR	
ACSI 301	Theory of Interest	SO/JR	
ECON 348	Introduction to Econometrics	JR/SR	

Pre-requisite Courses			
The courses listed below are prerequisites for courses in the concentration.			
Course number	Course Title	Required For	
MATH 121	Calculus I	MATH 122, ACSI 301	
MATH 122	Calculus II	STAT 301	
ECON 121 or **122**	Microeconomics or Macroeconomics	ECON 321 or 322	
ECON 321 or **322**	Intermediate Theory: Microeconomics or Macroeconomics	ECON 348	

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MATHEMATICAL DATA SCIENCE CONCENTRATION

REQUIRED COURSES (4 units)			
Course Number	Course Title	Suggested Year	Done
STAT 210	Statistical Methods I	SO/JR	
STAT 220	Statistical Methods II	SO/JR	
STAT 304	Applied Regression Analysis	JR/SR	
DATA 248	Data Visualization	SO/JR	
INTRODUCTORY DATA ANALYSIS COURSE (1 unit)			
CPSC 170	Fundamentals of Computer Science	FR/SO	
DATA 170	Exploring Data	FR/SO	
ADDITIONAL DATA ANALYSIS COURSE (1 Units)			
CPSC 350	Database Systems		
DATA 350	Databases for Data Science		
CPSC 370	Data Mining		

Pre-requisite Courses			
The courses listed below are prerequisites for courses in the concentration.			
Course number	Course Title	Required For	
CPSC 120	Programming	CPSC 170, DATA 170	

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STATISTICS CONCENTRATION

INTRODUCTORY COURSE (1 unit)			
Course Number	Course Title	Suggested Year	Done
INQ 240	Statistical Reasoning	SO/JR	
HNRS 240	Statistical Reasoning	SO/JR	
STAT 210	Statistical Methods I	JR/SR	
REQUIRED COURSE (1 unit)			
STAT 220	Statistical Methods II	SO/JR	
ELECTIVE COURSES (3 Units)			
STAT 301	Mathematical Statistics		
STAT 303	Experimental Design		
STAT 304	Applied Regression Analysis		
STAT 406	Independent Study (or STAT 405 and 407)		
STAT 416	Internship		
MATH 388	Topics in Mathematics		
ECON 348	Introduction to Econometrics		
One elective unit may be a Quantitative Methods course from another discipline with program coordinator's approval.			

Pre-requisite Courses		
The courses listed below are prerequisites for courses in the concentration.		
Course number	Course Title	Required For
MATH 121	Calculus I	MATH 122
MATH 122	Calculus II	STAT 301
ECON 121 or **122**	Microeconomics or Macroeconomics	ECON 321 or 322
ECON 321 or **322**	Intermediate Theory: Microeconomics or Macroeconomics	ECON 348

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