MACEWAN

Bachelor of Science - Mathematical Sciences Major

2011/2012 academic year

Total credits required for major = 42 senior-level credits (non-duplicative coursework)

Important Notes:

1) **TWO** of Computer Science, Mathematics and Statistics must be chosen as the primary disciplines at the senior level
2) A minor is not required.
3) If the third discipline is chosen as a minor, all senior credits in that discipline will count only towards the minor.

Prerequisite Junior Courses (9 credits):

- [ ] MATH 113 or 114: Elementary Calculus I
- [ ] MATH 115: Elementary Calculus II
- [ ] MATH 120 or 125: Basic Linear Algebra I

Note: These courses may be used to satisfy part of the Science Degree junior core requirements.Additional prerequisites may be required for other courses in this minor. Please consult the course descriptions in the MacEwan calendar.

Senior-level Courses Satisfying Major Requirement (42 credits)

42 credits from the following (choose TWO disciplines)

Notes: 18 senior level credits must be completed in each primary discipline declared.
A minimum of 12 credits must be completed at the 300 or 400 level in the primary disciplines with at least 3 credits from each primary discipline.
An additional 6 credits must be completed in senior level Mathematical Science courses.

Mathematics Courses

- [ ] MATH 200: Fundamental Concepts of Mathematics
- [ ] MATH 214: Intermediate Calculus I
- [ ] MATH 215: Intermediate Calculus II
- [ ] MATH 222: Discrete Mathematics
- [ ] MATH 225: Linear Algebra II
- [ ] MATH 241: Geometry
- [ ] MATH 310: Real Analysis
- [ ] MATH 311: Complex Variables
- [ ] MATH 312 (STAT 312): Probability Theory**

**cannot receive credit for both MATH 312 and STAT 312

- [ ] MATH 320: Number Theory
- [ ] MATH 321: Introduction to Ring Theory (formerly MATH 228)
- [ ] MATH 330: Ordinary Differential Equations
- [ ] MATH 341: Axiomatics of Geometry
- [ ] MATH 350: Introduction to Graph Theory
- [ ] MATH 361: History of Mathematics
- [ ] MATH 410: Analysis and Topology
- [ ] MATH 420: Algebra II
- [ ] MATH 436: Partial Differential Equations
- [ ] MATH 495: Special Topics in Mathematics and Statistics

Statistics Courses

- [ ] STAT 252: Applied Statistics II
- [ ] STAT 265: Probability and Stats Theory
- [ ] STAT 312 (MATH 312): Probability Theory**
- [ ] STAT 314: Mathematical Statistics
- [ ] STAT 350: Sampling Theory and Application
- [ ] STAT 353: Design/Analysis of Experiments

- [ ] STAT 370: Applied Time Series Analysis
- [ ] STAT 371: Categorical Data Analysis
- [ ] STAT 372: Applied Multivariate Analysis
- [ ] STAT 378: Applied Regression Analysis
- [ ] STAT 412: Stochastic Processes
- [ ] STAT 470: Time Series Analysis

Computer Science Courses

- [ ] CMPT 200: Data Structures and Their Algorithms
- [ ] CMPT 201: Programming Methodology
- [ ] CMPT 204: Algorithms I
- [ ] CMPT 220: Unix, Scripting and Other Tools
- [ ] CMPT 229: Computer Organization and Structure
- [ ] CMPT 230: Introduction to Computer Games
- [ ] CMPT 250: Human Computer Interaction I
- [ ] CMPT 272: Formal Systems and Logic
- [ ] CMPT 291: File and Database Management
- [ ] CMPT 305: Object-Oriented Programming
- [ ] CMPT 306: Non-Procedural Programming
- [ ] CMPT 315: Web-centric Computing and eCommerce
- [ ] CMPT 330: Introduction to Real Time Gaming

- [ ] CMPT 340: Numerical Methods
- [ ] CMPT 350: Human-Computer Interaction II
- [ ] CMPT 355: Introduction to Artificial Intelligence
- [ ] CMPT 360: Operating Systems and Net Centric Computing I
- [ ] CMPT 362: Operating Systems II
- [ ] CMPT 364: Net Centric Computing II
- [ ] CMPT 370: Introduction to 3D Computer Graphics
- [ ] CMPT 385: Introduction to Database Concepts
- [ ] CMPT 395: Introduction to Software Engineering
- [ ] CMPT 496: Individual Project
- [ ] CMPT 498: Team Project
- [ ] CMPT 399: Special Topics
- [ ] CMPT 499: Special Topics

Note: Not all courses are offered each year.

This planning sheet is to be used as a guide for registration purposes only and should be used in combination with the Four-Year Program Planning sheet. Course offerings may be subject to change.

2/9/2011