August 2015: To get a **Master's degree in Probability and Statistics at SIU**, the following theoretical and applied courses should be taken or have been taken as an undergraduate. SIU may form a 2 year 30 hour tuition paying nonthesis "M.S. Program in Statistics."

Theory: 1) Math 480 (probability)

2) Math 452 or Math 501 (first and second course in real analysis)

3) Math 483 and Math 580 (statistical inference, Math 483 for **actuarial exam P**)

4) Math 584 Linear Models

Computer language: 5) ECE 222 (FORTRAN or C) or CS 202 (JAVA)

Applied:

6) Math 484 or QUAN 507 and 508 (multiple linear regression and experimental design, might be used for **actuarial VEE** credit) (design is taught in QUAN 508, ANS 500, ENGR 540 and PSYCH 522)

7) Math 585: multivariate statistical analysis (QUAN 580c, Psych 524, BA 575, sometimes offered as Math 583)

8) 2 or more of Math 583 (advanced topics) or Math 586: Statistical Computing and Learning

Use the following **Electives** if you have met all MATH MS requirements:

Math 485 (sampling and categorical data analysis or nonparametric statistics)

Math 481 (or EE 551 stochastic processes)

Math 473 (or MFGS 540 reliability and survival methods, helpful for **actuarial exams M and C**)

Math 474 (time series)

Econ 567ABC and 575AB (econometric theory)

Math 575 as a substitute for the theory of linear models

IT 475, IT 470ab or MFGS 510 (quality control)

QUAN 533, EAHE 585 or MCMA 532 (survey research methodology)

CS 586, ECE 568 (pattern recognition)

GEOG 510 has regression and multivariate methods

ZOOL = PLB 557 (biostatistics, SAS)

ZOOL = PLB 558 (advanced biostatistics, SAS)

Advanced topics: Math 583, QUAN 580, sometimes POLS 501 and 502.

Actuarial mathematics: Math 400 Interest Theory and Financial Derivatives

Math 401 Life Contingencies I, Math 402 Life Contingencies II

Math 403 Loss Models I, Math 404 Loss Models II

The MS requirements of the Math Department also include:

A) 30 hours of graduate credit, at least 15 at 500 level and at least 21 offered by the Math Department.

B) a) Math 452 and Math 419

b) At least one 400–500 level class from two of the following three areas:
1) algebra and analysis (Math 421 or Math 519, excluding Math 452 and Math 419),
2) geometry and topology (Math 430 or Math 530),
and 3) probability and statistics.

So to get a MS in probability and statistics, you also need to take one course in at least 1 of the first 2 areas.