REGISTRATION PACKET FOR ACTUARIAL SCIENCE MAJORS
(Interdisciplinary Math/Stat Actuarial Science 7AA)

For students who enter the School of Science June 1, 2005 or after (including new, transfer, and students changing degree options, except for students who entered as freshmen in Fall 2006.)

PLEASE READ CAREFULLY!

This packet contains the following:

1. General comments and suggestions.

2. Requirements for the Interdisciplinary Actuarial Science Major for students entering 6/04 or after. While the academic advisors are more than happy to help both with course selections and interpreting the regulations, **it is your responsibility to see to it that you fulfill all requirements.**

3. Sample plans of study for the Interdisciplinary Actuarial Science Major

INTERDISCIPLINARY MATH/STAT ACTUARIAL SCIENCE (7AA)

The interdisciplinary actuarial science major, administered jointly by the Department of Statistics and the Department of Mathematics, provides the broad quantitative background in mathematics, statistics, finance, economics and business necessary for success in the actuarial profession. Career information is available on our web page (www.math.purdue.edu/actuary).

To become an "Actuary," you must become an Associate, and ultimately a Fellow, of one of the professional societies (Society of Actuaries or Casualty Actuarial Society). This requires passing eight or nine actuarial exams. Our program provides preparation for the first four actuarial exams, FM, P, M, and C. **To be competitive in the job market, it is almost essential to pass both the P and FM exams before interviewing in the fall of the senior year. It is also crucially important to get good grades**; many employers have a grade cutoff of 3.0 or higher. The P exam is a computer based exam currently administered nationally four times a year by Thompson Prometric. (In Lafayette, the test site is the Sylvan Learning Ctr, 4050 Britt Farm Drive.) Check www.soa.org for the test schedule and application deadlines. The other exams are given in November and May with respective application deadlines of around mid September and April 1. Information and application materials for the exams are available on the Actuarial Society's web page (www.soa.org) or from Julie Morris in MATH 820. Specifically, the relation between class work and exams is:

Exam FM (Mathematical Finance): MA 373 (370) (spring semester only).

Exam P (Probability): MATH/STAT 416. The prep class MATH/STAT 250 (spring semester only) is recommended.

Exam M (Actuarial Models) : STAT 472-473

Exam C (Actuarial Models) : STAT 472 and STAT 417-490C. (STAT 473 may help as well.) STAT 490C is required only in the Honors Program, but is open to other strong students.

Besides exams, the SOA also requires "validated by educational experience" (VEE) of three topics. Individuals may apply for this credit after completion of the required course work with at least a B and **after passing two SOA/CAS actuarial exams.**

Economics: ECON 251 (or ECON 340) and ECON 251 (or ECON 352) .

Corporate Finance: MGMT 310 and MGMT 411.

Applied Statistics: STAT 512 and STAT 490T (Time Series).

Many actuarial students have summer internships. Interviews for internships (as well as permanent jobs) are coordinated by the Purdue Actuary Club (web.ics.purdue.edu/~actuary/).

REQUIREMENTS

for the

ACTUARIAL SCIENCE MAJOR

(Interdisciplinary Math/Stat Actuarial Science 7AA)

English Composition (ENGL):
   Complete with a grade of "**C**" or better ENG 106 + an additional English class. See your academic advisor for allowed choices.

Foreign Language (LANG):
   Pass a fourth semester course in a foreign language.

Humanities, Behavioral, and Social Sciences (GEN ED):
   Detailed descriptions of the School of Science GEN ED requirement may be obtained at http://www.science.purdue.edu/Students/Undergraduates/degrees.html

Laboratory Science (LAB SCI):
   Detailed descriptions of the School of Science GEN ED requirement may be obtained at http://www.science.purdue.edu/Students/Undergraduates/degrees.html

Mathematics (MA):
   Calculus: one of the sequences terminating in MA 174, 182, 261, or 271
   Linear Algebra: MA 351
   Differential Equations: MA 366
   Mathematical Theory of Interest: MA 373 (370)

Statistics (STAT):
   Statistical Inference: STAT 417
   Applied Regression: STAT 512
   Actuarial Models I and II: STAT 472 and 473
   Time Series: STAT 490T

Jointly listed Mathematics and Statistics Classes (MA/STAT):
   Basic Probability: MA/STAT 416

Management (MGMT, ECON):
   Introductory Accounting and Management Accounting: MGMT 200 and 201
   Microeconomics and Macroeconomics: ECON 251 and 252
   Financial Management: MGMT 310

You may **not** take any of the above requirements Pass/No Pass, with the exception of Humanities, Social, and Behavioral Science Courses which are 500 level. Classes not used to fulfill the above requirements are "free electives." Contact your academic advisor for enrolment options for such classes.

A minimum of 124 hours are required for graduation.

Minimum GPA: 2.5 (in courses required for major, excluding MA 161, 162, 261 or equivalent)

HONORS PROGRAM

(Honors Interdisciplinary Math/Stat Actuarial Science 7AH)

To graduate with Honors in Actuarial Science, the candidate must:

(A) Obtain a GPA of at least 3.3 over all.

(B) Obtain at least a "B" in each of the following classes: ECON 251 (or ECON 340) , 252 (or ECON 352), MGMT 310, 411.

(C) Take STAT 490C (Honors Loss Models).

(D) Obtain at least an average GPA of 3.5 in the following set of classes: STAT 417, 490C , 472, 473.

(E) Obtain grades of "A" or "B" in all of the mathematics and statistics classes required for the actuarial science degree. (Exceptions may be granted on a case-by-case basis.)

(F) Provide documentation to the Director of the Actuarial Science Program or his/her designate prior to the end of classes in the semester of graduation of having received passing scores on two of the Society of Actuaries (SOA) or Casualty Actuarial Society (CAS) actuarial exams.

Students interested in pursuing the honors degree should inform their academic advisor. There are no formal prerequisites for entering the program. This program is separate from the College of Science Freshman Honors Program and the University Honors Program. Graduation with Honors in Actuarial Science will be indicated by the words "Actuarial Science Honors" appearing on the transcript.

DOUBLE MAJOR IN BOTH ACTUARIAL SCIENCE AND STATISTICS

Taking STAT 350, in addition to all of the required courses, fulfills all of the requirements for the Statistics Major, and you are encouraged to declare Statistics as a second major. STAT 350 can also be used as a substitute for MGMT 305 in meeting the requirements for a Management Minor (see below).

MANAGEMENT MINOR

Actuarial Science Majors can qualify for a Management Minor by taking (in addition to the required courses) CS158/159/177, COM 114, either MGMT 305 or STAT 350, and either MGMT 411, ECON 340 or ECON 352. The sequence MGMT 310-411 also fulfils the finance requirement for the Associate of the Actuarial Society designation.

RECOMMENDED COURSES

School of Science:
> CS 177, (or CS 158 or CS 180) *Counts as a Lab Science class*
> Introduction to Actuarial Science: MA/STAT 170
> Problem solving for Actuarial Course I Exam: MA/STAT 250 (prerequisites MA 261, or equivalent, and MA/STAT 416 (STAT 516))
> Introduction to Statistics: STAT 350   *The only additional class required for the Stat. Degree.*

School of Management:
> Investment Management: MGMT 411 (prerequisite MGMT 310). *Required for the SOA "Corporate Finance Validation."* Legal Background For Business I: MGMT 455

School of Technology:
> Data Base Application Development (Programming Microsoft Access): CPT 172
> Visual Programming (Visual Basic Programming): CPT 175
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> *Warning: CPT 172 does not count for credit in the College of Science. CPT 175 counts as a free elective for* **Actuarial Science Majors only**. *It does not count for credit toward the Statistics Degree.*

Interdisciplinary Mathematics/Statistics Actuarial Science Sample Plan 1

1	**MA 161** (4-5) **or 165, 173, 181, 271** Calculus	*MA/ST 170* (2) Actuarial Sci.	**ENGL 106**[1] (4) Composition	*CS[2] 177 or 158 or 180* (3) Comp. Sci.	*Language* (3)
2	**MA 162** (4-5) **or 166, 174, 182** Calculus	**MA 373**[3] (4) Financial Mathematics	**ENGL**[1] (3)	*COM 114*[4] (3) Com.	*Language* (3) Exam FM:May
3	**MA 261** (4) Calculus	*Lab Science* (3-4)	**MGMT 200** (3) Accounting 1	**ECON 251** (3) Micro-Econ.	*Language* (3)
4	**MA 351 or 350**(3) Linear Alg.	*STAT 350*[5] (3) Statistics	**MGMT 201** (3) Accounting 2	**ECON 252** (3) Macro-economics	*Language* (3)
5	**MATH 366** (4) Diff. Eq	**MA/ST 416** (3) Probability	**MGMT 310** (3) Finance	*GEN ED* (3)	*Elective*
6	**STAT 490T** (3) Time Series	**STAT 417** (3) Statistics	*GEN ED* (3)	*Lab Science* (3-4)	*MA/ST 250*[6](2) Exam P: May
7	**STAT 472** (3) Act. Model 1	**STAT 512** (3) Regression	*MGMT 411*[7] (3) Investments	*Lab Science* (3-4)	*GEN ED* (3)
8	**STAT 473** (3) Act. Model 2	*Elective*	*GEN ED* (3)	*Elective*	*Elective* Exam M: May

Explicitly required classes are in **Bold**. Those in italics fulfill requirements such as GEN-ED, Lab Science, elective, etc. Class hours, including AP and test out credits, must total to at least 124. The required and recommended classes together provide complete preparation for the first 3 actuarial exams and all 3 VEEs.

[1] ENG 106 + an additional English class
[2] Used as a Lab Science class and for the Management Minor
[3] Called MA 490 A in Spring 2007
[4] Required for the Management Minor
[5] The only additional class required for the STAT degree. Uses Excel
[6] Exam Prep Class
[7] Together with MGMT 310 fulfils the SOA Corporate Finance requirement It is required for the honors degree.

Interdisciplinary Mathematics/Statistics Actuarial Science Sample Plan 2
(Only for students of very high ability)

1	**MA 161** (4-5) **or 165, 173, 181, 271** Calculus	*MA/ST 170* (2) Actuarial Sci.	**ENGL 106**[1] (4) Composition	*CS*[2] *177 or 158 or 180* (3) Comp. Sci.	*Language* (3)
2	**MA 162** (4-5) **or 166, 174, 182** Calculus	**MA 373**[3] (4) Financial Mathematics	**ENGL**[1] (3)	*COM 114*[4] (3) Com.	*Language* (3) Exam FM:May
3	**MA 261** (4) Calculus	*STAT 350*[5] (3) Statistics	**MGMT 200** (3) Accounting 1	**ECON 251** (3) Micro-Econ.	*Language* (3)
4	**MA 351 or 350**(3) Linear Alg.	**MA/ST 416** (3) Probability	**MGMT 201** (3) Accounting 2	*Language* (3)	*GEN ED* (3)
5	**MATH 366** (4) Diff. Eq	*Elective*	**MGMT 310** (3) Finance	**ECON 252** (3) Macro-econ.	*MA/ST 250*[6] (2) Exam P: Feb.
6	**STAT 490T** (3) Time Series	**STAT 417** (3) Statistics	*GEN ED* (3)	*Lab Science* (3-4)	*Elective*
7	**STAT 472** (3) Act. Model 1	*STAT 490C*[7] (3) Honors Loss Models	*MGMT 411*[8] (3) Investments	*Lab Science* (3-4)	*GEN ED* (3)
8	**STAT 473** (3) Act. Model 2	**STAT 512** (3) Regression	*GEN ED* (3)	*Lab Science* (3-4)	*Elective* Exam M or C: May

Explicitly required classes are in **Bold**. Those in italics fulfill requirements such as GEN-ED, Lab Science, elective, etc. Class hours, including AP and test out credits, must total to at least 124. The required and recommended classes together provide complete preparation for the first 4 actuarial exams and all 3 VEEs.

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[1] ENG 106 + an additional English class

[2] Used as a Lab Science class and for the Management Minor

[3] Called MA 490 A in Spring 2007

[4] Required for the Management Minor

[5] The only additional class required for the STAT degree; Uses Excel

[6] Exam Prep Class

[7] This is an **HONORS** class that completes the preparation for the C Exam. It is required only for the honors degree.

[8] Together with MGMT 310 fulfils the SOA Corporate Finance requirement It is required for the honors degree.

Interdisciplinary Mathematics/Statistics Actuarial Science Sample Plan 3
(Only for students of exceptionally high ability)

1	**MA 181** (4-5) **or 173, 271** Calculus	*MA/ST 170* (2) Actuarial Sci.	**ENGL 106**[1] (4) Composition	*CS*[2] *177 or or 158 or 180* (3) Comp. Sci.	*Language* (3)
2	**MA 182** (4-5) **or 174** Calculus	**MA 373**[3] (4) Financial Mathematics	**ENGL** [16] (3) C programming	*COM 114* [4] (3) Com.	*Language* (3) Exam FM:May
3	**MA/ST 416** (4) Probability	*STAT 350*[5] (3) Statistics	**MGMT 200** (3) Accounting 1	**ECON 251** (3) Micro-Econ.	*Language* (3)
4	**MA 351 or 350**(3) Linear Alg.	**STAT 417** (3) Statistics	**MGMT 201** (3) Accounting 2	*Language* (3)	*MA/ST250*[6] (2) Exam P: May
5	**STAT 472** (3) Act. Model 1	**MA 366** (4) Diff. Eq	**MGMT 310** (3) Finance	**ECON 252** (3) Macro-economics	*GEN ED* (3)
6	**STAT 473** (3) Act. Model 2	*Electives* .	*Electives*	*Lab Science* (3-4)	*GEN ED* (3) Exam M: May
7	**STAT 512** (3) Regression	*STAT 490C*[7] Honors Loss Models	*MGMT 411*[8] (3) Investments	*Lab Science* (3-4)	*GEN ED* (3)
8	**STAT 490T** (3) Time Series	*Electives*	*GEN ED* (3)	*Lab Science* (3-4)	Exam C: May

Explicitly required classes are in **Bold**. Those in italics fulfill requirements such as GEN-ED, Lab Science, elective, etc. Class hours, including AP and test out credits, must total to at least 124. The required and recommended classes together provide complete preparation for the first 4 actuarial exams and all 3 VEEs.

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[1] ENG 106 + an additional English class

[2] Used as a Lab Science class and for the Management Minor

[3] Called MA 490 A in Spring 2007

[4] Required for the Management Minor

[5] The only additional class required for the STAT degree; Uses Excel

[6] Exam Prep Class

[7] This is an **HONORS** class that completes the preparation for the C Exam. It is required only for the honors degree.

[8] Together with MGMT 310 fulfils the SOA Corporate Finance requirement It is required for the honors degree.