Actuarial Science Program
DEPARTMENT OF MATHEMATICS UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

Relationships Between U of I Courses and Professional Actuarial Exams

Although not part of the formal degree requirements, those act sci students who are planning to undertake an actuarial career should consider the taking of national actuarial exams to be a core component of their preparation. In fact, students might want to plan their course schedules with the exams in mind – e.g., some students consider taking a slightly lighter load in those semesters when they are planning to study for and take an exam. Also, students are welcomed to take (for one credit hour) or sit in on the ASRM 392 section for the exam they plan to take – these once-per-week evening exam review sessions typically involve going over problems from past examinations, and can be very helpful in preparing for an exam. We currently offer sections of ASRM 392 for exams 1/P and 2/FM each semester; occasionally, we may offer sessions for other exams.

At Illinois, we strive to teach the material that is on the preliminary actuarial examinations of both the SOA and CAS. The following describes how the exams and Illinois courses line up:

- **CAS 1 / SOA P: Probability.** Relevant courses are calculus through Math 241, and ASRM 401 (or Math 461). Based on the sample four-year schedule provided in Section 1, a student may want to aim for taking Exam P by the end of the sophomore year.

- **CAS 2 / SOA FM: Financial Mathematics.** The relevant course for the interest rate material is ASRM 210; additional financial economics material on this exam can be learned through some combination of independent study, taking or sitting in on Math 370 (Section FM) review sessions, a finance course, and/or a special FM finance seminar. A student could be ready to take Exam FM by his/her sophomore year (or freshman year, if the student enters with sufficient calculus credit). Note that you may take the actuarial exams in any order – e.g., Exam FM can be taken before Exam P, if your course schedule makes it logical to do so.

- **Investments and Financial Markets:** The majority of this material is covered in ASRM 410.

- **Long Term Actuarial Mathematics:** ASRM 471 and 472

- **Short Term Actuarial Mathematics:** ASRM 461

- **Statistics for Risk Modeling:** ASRM 450 and 451

- **Modern Actuarial Statistics I:** ASRM 450, 451 and 409

- **Modern Actuarial Statistics II:** ASRM 451 and 461

Some additional information about the actuarial exams:

- Exam LTAM is currently a pencil-and-paper exam, offered twice per year, once in April, and once in October. The other preliminary exams are computer-based and generally offered more frequently. Specific information can be found at [www.beanactuary.org](http://www.beanactuary.org). Additional information can be found at [www.soa.org](http://www.soa.org) and at [www.casact.org](http://www.casact.org).

- Exams 1/P, 2/FM and 3F/IFM are co-sponsored by the Casualty Actuarial Society and the Society of Actuaries.
• Generally, exams can be taken in any order – they need not be taken sequentially according to their number or letter designations. CAS exam MAS II will assume students have knowledge of the material on MAS I.

• Our act sci graduates have a wide variety of exam passes when they leave the U of I. The average is probably about two, but many students each year have passed three, four, or even five exams by the time they graduate. We always suggest that students aim for passing (at least) two while in college, but in general, more is better than fewer.

**VEE:** Another aspect of professional actuarial education is the Validation by Educational Experience (VEE) requirement. The VEE requirements represent material that used to be tested on actuarial exams. Several years ago, the actuarial societies removed this material from the exams; instead of testing this material, they now require that, prior to getting a professional actuarial designation (i.e., an ASA or an ACAS), one must not only pass certain actuarial exams, but also take university-level classes in the VEE areas, and get a grade of at least a B-minus in each course.

Specifically, the VEE requirements include the topical areas of economics (both micro- and macro-economics, so generally two courses are necessary to fulfill the economics VEE requirement, although there can be exceptions), finance, and applied statistics. UIUC has had certain of our courses pre-approved as fulfilling these requirements. In particular, taking and receiving a grade of at least B-minus in the following UIUC courses will fulfill the VEE requirements in the three topical areas. These are the relevant courses most likely to be taken by act sci majors:

- **Economics:** Econ 102 and 103 (both are required). (The sequence Econ 302 and 303 also qualifies.)
- **Finance:** Fin 221. (Fin 321 also qualifies.)
- **Mathematical Statistics:** ASRM 409 (SOA only)

Currently, there are also various professional exams which fulfill VEE requirements. Additional information regarding the entire set of VEE requirements can be found at: [http://www.soa.org/education/exam-req/edu-vee.aspx](http://www.soa.org/education/exam-req/edu-vee.aspx).