



Centers of Actuarial Excellence

A-Level Criteria Guidance

Updated October 18, 2019

To be designated a Center of Actuarial Excellence (CAE) a school must pass each A-level criterion by meeting the quantitative guidelines provided herein.

The SOA reserves the right to change this guidance. In no case will any change to the guidance provided be considered a change in the criteria that would lead to the reconsideration of the award (or denial) of Center of Actuarial Excellence status.

Society of Actuaries Centers of Actuarial Excellence A-Level Criteria

Criterion A.1: The school must offer a program with an **identifiable major** or track in actuarial science (the term “major” will henceforth be used to refer to all actuarial programs). There must be a clear set of courses and other requirements, and it must be clear which students have earned the actuarial science major.

Students earning the actuarial science major can do so as part of a bachelors, masters, or doctoral degree program. Course catalog or other materials must clearly identify what is associated with a major in actuarial science, and the school should recognize the actuarial science major in the same way it recognizes other majors.

Required Documentation

- Schools must show a recent published source (electronic or paper) that states the courses or other requirements that must be met for students to earn the actuarial science major. (One source is sufficient).

Guidance

- If the university has both undergraduate and masters programs, each program must meet the CAE criteria (with some exceptions as noted in this document).
- It is acceptable if a school does not call “concentrations by discipline” a major but calls it something else, as long as that term is applied equally across the academic disciplines.
- It is not acceptable for a school to offer a concentration or certificate in actuarial science if most other disciplines have majors; in particular, the CAE Evaluation Committee will consider whether similarly situated departments (e.g. business, finance, accounting, risk management) have identified majors.

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Criterion A.2: The **curriculum** for the undergraduate program (or graduate program if no undergraduate program exists) must cover at least 80% of the syllabus-weighted learning objectives for 4 of the 6 preliminary SOA examinations listed below. One of the exams covered must be either the Long-Term Actuarial Mathematics Exam or the Short-Term Actuarial Mathematics Exam.

- Probability
- Financial Mathematics
- Investment and Financial Markets
- Long-Term Actuarial Mathematics
- Short-Term Actuarial Mathematics
- Statistics for Risk Modeling

The 80% threshold is per SOA examination. The school also must offer courses that have been approved by the SOA for all VEE (Validation by Educational Experience) subjects:

- VEE Economics
- VEE Accounting and Finance
- VEE Mathematical Statistics

The CAE program encourages syllabus coverage as part of a well-rounded actuarial education. The courses aimed at covering the preliminary exams are expected to be concept driven and not designed to teach only to passing the exams.

The Appendix B Criterion A.2 Syllabus Worksheets provide the appropriate syllabus-weighted learning objectives for each of the six preliminary SOA examinations. Weights are derived from syllabus weights set by the curriculum committee. A learning objective, or sub-objective, can be counted toward the 80% total (by weight) if it is covered by the appropriate course(s). If an objective or sub-objective is not completely covered in the curriculum, it cannot be considered toward meeting the 80% total.

Required Documentation

- Schools must complete and submit the Appendix B Criterion A.2 Syllabus Worksheets to show how the program's syllabus and examinations tie to the SOA learning objectives and how that course (or combination of courses) achieves 80% of the syllabus-weighted learning objectives for a particular SOA examination. If no undergraduate program exists please provide the requested information for the graduate actuarial program.

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- For **each** course documented in the Criterion A.2. syllabus worksheets, please provide:
 - Course syllabus and/or detailed learning objectives, showing how the syllabus/learning objectives match to the SOA examination’s learning objectives, and how that course (or combination of courses) achieves 80% of the syllabus-weighted learning objectives for a particular SOA examination.
 - Course examinations, homework assignments and/or projects showing that the above has been evaluated.
- Courses approved for VEE credit must appear on the SOA’s Directory of Approved VEE Courses.

Guidance

- Schools must use the weights as published by the CAE Evaluation Committee, as set in the Appendix B Criterion A.2 Syllabus Worksheets.
- Learning objectives for a single exam do not have to be taught in a single course, but it is the preference of the CAE Evaluation Committee that learning objectives for a particular exam not be spread over too many courses.
- Courses used to satisfy this criterion must be offered with sufficient frequency that a student can easily complete those courses that cover 80% of the learning objectives for 4 of the 6 preliminary SOA examinations within the normal time period for earning the degree.
- If the school offers multiple actuarial majors, the curriculum for each must satisfy this criterion. The courses need not be required for the degree, however, they must be easily available to students and offered with sufficient frequency that students can easily complete those courses that cover 80% of the learning objectives.
- Schools may substitute for items in the SOA learning objectives. Such substitutions will be considered if the substitution of material presents techniques or principles that are more advanced/cutting-edge. It is not acceptable if the course curriculum differs so sharply from the SOA learning objectives that a student would not be reasonably prepared for the SOA examination.
 - It is not acceptable for a school to argue that courses are not offered for lack of student interest or resource availability.

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- It is not sufficient for a school to say it meets the SOA learning objectives because they use the same texts and course readings as the SOA examinations. Schools must still show how their curriculum satisfies 80% of the syllabus-weighted learning objectives for the covered examinations.

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Criterion A.3: The school must have produced an average of no fewer than ten **graduates per year** over the previous four years across all identifiable actuarial science majors.

Required Documentation

- Schools must provide a count of students graduating with an actuarial science major over the past four years. The list can come from the department itself or could be a list published in another venue (e.g., graduation booklet, student newspaper). A year is an academic year as defined by the institution. The completion of the table in [Appendix D for Criteria A.3, B.1, and B.2](#) is strongly encouraged. If the table is not completed a similar reporting of the information requested in the table is required.
 - A list showing a count of graduates without names is acceptable as sufficient evidence, provided it is from an official university source (such as the registrar’s office). A list of actual names is preferred, but not required.

Guidance

- The total number of graduates can include bachelors, masters and doctoral programs to get to an average of ten graduates per year.
- Graduates are counted “within an academic year.” There is flexibility in defining that year as long as the school is consistent (each year in the four-year period has to start on day X and end on day X-1.)

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Criterion A.4: The **faculty** responsible for actuarial courses and other program involvement must be sufficient in both quantity and qualifications.

Schools will be deemed to meet this criterion if their core actuarial faculty (defined below) meet either (1a and 2) or (1b and 2) below:

- 1a. There are at least two core actuarial faculty members, of which two are both PhD and Fellows.
- 1b. There are at least three core actuarial faculty members, of which at least one must be a PhD and either one must be a Fellow or two must be Associates
2. At least one core actuarial faculty member must be a) an actuary or pursuing actuarial credentials (Associate or Fellow), b) full-time, and c) tenured or tenure-track.

The school must demonstrate how it meets either 1a and 2 or 1b and 2.

Core actuarial faculty are faculty who show a strong and consistent relationship to the program as demonstrated by being engaged in many of the following:

- Being a formal member of the actuarial program faculty in the university structure;
- Regularly teaching courses in the actuarial program that support the actuarial exams;
- Formally advising students, particularly undergraduate or Masters level candidates;
- Being directly involved in discussions/decisions regarding curriculum, students and scheduling;
- Serving as an advisor for the student club;
- Managing the administrative duties for the program;
- Participating in events organized by the department; and
- Holding a position whose title indicates direct involvement with the actuarial program.

In addition, core actuarial faculty can demonstrate a strong relationship through actuarial-related research that is published in actuarial science or related journals and research that is presented at professional meetings where actuaries have a substantial presence, and through contributions to actuarial professional activities including speaking at meetings, serving on committees, participating in the actuarial professional education system. Service to the university (i.e., serving on university committees) is not considered.

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For the purposes of part 2 above, to be “pursuing actuarial credentials” requires that the individual has passed at least four actuarial exams (defined below). At least one of those exams should have been passed no earlier than the calendar year preceding the school’s application. The individual is expected to attain the Associate credential within three years of the later of being hired at the university in a tenured/tenure-track position or the passing of the most recent actuarial exam.

For this criterion, “Associate” or “Fellow” apply to designations bestowed by the Society of Actuaries, Casualty Actuarial Society, Canadian Institute of Actuaries, Institute and Faculty of Actuaries (UK) or Actuaries Institute of Australia. The CAE Evaluation Committee will consider designations from other actuarial associations on a case-by-case basis.

Required Documentation

- Schools should complete the [Appendix C Criterion A.4 Faculty Worksheet](#) and provide a Curriculum Vitae (CV) for each faculty member involved in the actuarial science program. Schools must indicate for each faculty member the amount of time and nature of activities that support the actuarial science program.

Guidance

- For part 1b, the same person can be both a PhD and Fellow or a PhD and Associate and meet the criteria.
- Other than the faculty member used to meet the part 2 criterion, core actuarial faculty may be part time provided their involvement meets the core faculty requirement. Generally, adjunct faculty who only teach occasionally and have limited presence aside from teaching will not be counted.
- Teaching courses that are required for the degree but not designed specifically for actuarial science students does not count toward establishing the individual as a core actuarial faculty member. Examples of courses that may not qualify are VEE corporate finance, a probability course designed for a variety of majors, and a derivatives course designed for finance majors.
- For part 2, a faculty member pursuing actuarial credentials must have already passed four actuarial exams at the time of the school’s application for CAE. That faculty member will then have three years to achieve the Associate designation. The start date of the three-year time clock is the latter of the following two dates:
 - The date on which the individual began service in a tenured or tenure-track position.
 - The date of the most recent passing of an exam (prior to the CAE application).

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- For part 2, a faculty member pursuing actuarial credentials from the Casualty Actuarial Society, Canadian Institute of Actuaries, Institute and Faculty of Actuaries (UK) or Actuaries Institute of Australia will be evaluated with respect to the four-exam requirement based on the CAE Evaluation's Committee judgment regarding progress toward associateship.
- A wide range of subjects of study is acceptable for a doctoral degree. While the degree need not be in a closely related discipline (e.g., actuarial science, mathematics, or risk management), degrees in subjects that are clearly unrelated to actuarial science (e.g. art, humanities) are unlikely to be considered.
- Evidence includes teaching schedules, faculty CV and a narrative describing roles played by faculty in the department.