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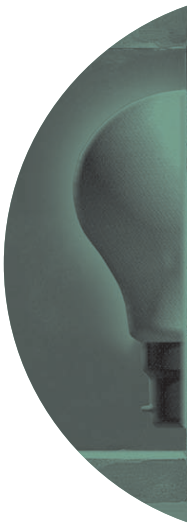

Surprising Results from Curriculum Survey

by Randy Kaye

In performing their work, Computer Science Section members utilize a wide variety of technical skills. Many useful "computer science"-related subjects are not covered by the SOA exams, though they may be considered. The Computer Science Section recommends that colleges and universities develop curricula for actuarial science programs that reflect the results of this survey and which enable college and university students interested in pursuing an actuarial career to select appropriate courses.

The Computer Science Section membership was surveyed to help us understand which topics are important for actuarial staff to have a working knowledge of, at either the "early career" or "mature career" stage. Over 250 members completed the survey.

The results below are based on a scoring system from 0 = Unimportant, to, 5 = Must Have, then converted to a percentage. A score of 3.5 or more is significant, since it would imply a level of importance somewhere between:

1. 70 percent of the respondents felt that it was 5 = Must Have, and,
2. 100 percent of the respondents felt that it was 3.5 = Important.

A score of 3.5 or more was achieved in the following areas:

While the importance of system-related topics such as spreadsheets, programming languages, database concepts, documentation and project management were expected, the surprising result from this survey is that the respondents felt so strongly that numerical algorithms (especially basic calculus, interpolation, extrapolation, estimation and errors) are still considered a Must Have in importance.

Yet the traditional actuarial skills of calculus, numerical analysis and graduation methods have been removed from the E&E syllabus over the last decade or, if not removed, mentioned as "prerequisites". This survey shows that the membership still judges these skills as extremely important, and the Computer Science Section council encourages the E&E Committee to consider reinstating numerical analysis and graduation on both the E&E syllabus and examinations.

Colleges and universities are also encouraged to review these results and interpret them as a "call to arms", or at least, reinstatement, for some of the more traditional actuarial skills.

Complete survey results can be found in the Computer Science Section of the SOA Web site at www.soa.org/ccm/content/areas-of-practice/special-interest-sections/computer-science/compact-newsletter/

Score	Early Career
4.7	Mathematical applications, especially spreadsheets (including macros).
3.5	Programming languages, especially procedural languages (C, Fortran, Basic).
3.5	Statistical analysis, especially regression, distributions, standard deviation and Monte Carlo methods.
3.8	Numerical algorithms, especially basic calculus, interpolation, extrapolation, estimation and errors.
3.5	Database Concepts, such as hierarchical & relational, queries, unions and intersections.
3.9	Documentation, such as program comments, system documentation and user documentation.

Score	Mature Career
4.0	Mathematical applications, especially spreadsheets (including macros).
3.8	Project management & planning, such as steering committee, project sponsor, critical path, dependencies and Gantt charts.
3.6	Financial aspects of information systems, such as total cost of ownership, business risk and return on investment.

Randall A. Kaye ASA, FLMI/M is a principal with arc360, a consulting firm providing systems for the life insurance industry. While working with illustration and admin systems, he also helps companies with their universal life product features and policyholder taxation interpretations. He can be reached at RAKaye@compuserve.com.