# Précis

Program Performance Review

## *Software Engineering, MS*

College of Engineering and Computer Science

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## Background

Software Engineering (MSE) is an online masters program in the Department of Computer Science. Established in 2004-05 this is the initial program performance review (PPR). The PPR was conducted during the 2009-10 academic year. The program performance review includes a self-study and the findings and recommendations of a Visiting Team. The Visiting team included: Barry Pasternack, Chair Department of Information Systems and Decision Sciences, CSUF; JoAnne Andre, Director, Nursing, Distance Education, CSUF; JoAnn Carter-Wells, Coordinator Instructional Design and Technology Program, CSUF; Saeed Monemi, Professor, Electrical and Computer Engineering, CSU Pomona and John Ryskowski, JFR Consulting. The visiting team interviewed faculty, students (both current and alumni) and the Dean and Associate Dean of the College. The program coordinator provided a response to the Visiting Team report and the Dean responded to the process.

## Key Data

Presently there are six faculty members who teach in the MSSE program five are tenure track and one lecturer. The program has enjoyed steady growth over the last five years in 04-05 the head count was 44 in 08-09 the number was 147. In 05-06 38 degrees were awarded in 08-09 there were 69 degrees awarded. There is however, a downward trend in applications. The MSE emphasizes process-oriented software engineering. It is a 30-unit coursework program (10 courses) to be completed over 22 months, year round with students enrolled in two courses per semester including during the summer. The program is offered in a cohort format with students in the same cohort following same class schedule for the duration of the program.

## Key Issues

At present the MSE is one of four online masters program offered at the University. A key issue for the program is professional development opportunities for faculty to stay current in the field. Student orientation should be reviewed to assure that all students are enrolled in both the orientation and midpoint seminars. Another issue for the department is promotion and publicity; this includes updating the program website and catalogs. Important to the success of the program is the need to stay abreast of industry and workplace changes and trends. Revitalize the external advisory to connect the program with practitioners and employers. The program is considering the possibility of offering the program in China. Assessment of student learning and departmental effectiveness are also an issue for the program. (See Outcomes Assessment below)

## Outcomes Assessment

The program has established eight learning goals with stated learning outcomes.( See University website where learning goals and learning outcomes are posted for all academic programs. http://webcert.fullerton.edu/academicprograms/assessmentedu/index.htm ) In addition and importantly the program has developed an assessment matrix aligning each course to the programs learning goals the matrix also includes assessment strategies/methods. Students now have culminating learning experiences in 597-I and 597-II. Each student develops a portfolio which is reviewed by the program coordinator. How does the portfolio provide "the most comprehensive assessment of student learning"? The self-study identifies a capstone project where each student applies knowledge and skills to a large medium scale software project using a supportive theoretical and research framework? It is not clear how the capstone differs from 597. The program should explain the culminating experiences and provide how they are linked to learning goals and outcomes. The program has identified learning goals and outcomes aligned to courses with assessment strategies/measures and now should move to use assessment data/findings to change and improve learning and program effectiveness. The identification of quality indicators e.g. student/faculty collaborations, retention rates, etc can be used to provide evidence of program effectiveness.


## Outlook

According to the self study the MSE emphasizes a comprehensive and thorough process-oriented approach to software development that is grounded in software engineering research theory, principles and practices. This process-oriented curriculum makes the program unique among many other professional master's degree programs in software engineering. It is critical that the Software Engineering program stay current in the field it is a market driven enterprise. Faculty, in order to stay abreast with the latest industry trends do so by attending the Software Engineering Institute sponsored by Carnegie Mellon University. The program's enrollments are strong even though applications are down slightly perhaps due to the economic downturn. The program has also decided to enhance its marketing and promotional efforts. The program is beginning to amass assessment data and now should use for improvement and change. The Visiting Team concluded that the program is a success by any measure. Nonetheless, the Visiting Team cited several findings for improvement including issues related to faculty development, funding, and curriculum. To its credit the program has moved to act positively on a number of the findings.

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