

Subject: **Software Engineering**

Summary: This exam will evaluate the student's undergraduate and junior graduate understanding of software engineering and its related subject areas. The specific subjects to be addressed are provided as keywords below. Beyond these basic subjects, you should be comfortable with programming principles (typical of modern high-level languages), operating systems, and computer organization - someone who is competent at software engineering surely must have reasonable knowledge in these areas! Where knowledge of methods is suggested, a basic understanding is expected, you do not have to be an experts.

Keywords

- Alternative models of the software development lifecycle.
- Popular software development methods.
- Requirements analysis and specification techniques.
- Design methods for sequential and concurrent applications.
- Testing, verification, and validation techniques.
- Maintenance, re-engineering, evolution.
- Differences between "software engineering" of algorithmic software, data processing software, and real-time and distributed software.
- Relationship of programming to software engineering.
- Nature and limitations of CASE (Computer-Aided Software Engineering).
- Software Engineering Process: evaluation methods and metrics.