Software Engineering Education Directory

Edited by
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SEI Software Engineering Education Directory

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Software Engineering Institute
Carnegie Mellon University
Pittsburgh, Pennsylvania 15213
Foreword

Each spring, the SEI Education Program publishes the SEI Software Engineering Education Directory, which summarizes undergraduate and graduate courses in software engineering taught at colleges and universities, primarily in the United States. This annual survey, the only one of its kind, serves as a directory for potential students seeking information about where they might study software engineering. The survey is useful to industry and government recruiters in evaluating the background of job candidates.

The teamwork and energy of Brian Gottier, Bill McSteen, and Mark Schmick, along with Allison Brunvand, Linda Levine, Mary Rose Serafini, and Barbara Zayas, were responsible for the successful completion of this edition. Gary Ford, Senior Computer Scientist, helped design this year’s edition and spent much time editing entries into final form.

Norman E. Gibbs
Director of Software Engineering Education
Software Engineering Institute
Carnegie Mellon University
Software Engineering Education Directory

Abstract: This directory provides information about software engineering courses and software engineering degree programs offered by universities, primarily in the United States.

The Software Engineering Institute (SEI) is a federally funded research and development center, sponsored by the Department of Defense and operated by Carnegie Mellon University. The mission of the SEI is to serve the public interest by establishing the standard of excellence for the art and practice of software engineering and by accelerating the transition of software technology.

This directory has been compiled to provide information that will help students and their advisors make appropriate educational choices. It contains a detailed listing of available software engineering courses and software engineering degree programs.

Introduction

Compilation of entries for this directory began in the summer of 1986 with a questionnaire mailed to schools selected from Peterson's Graduate Programs in Engineering and Applied Sciences 1986. We contacted schools offering graduate degrees in computer engineering, computer science, information science, software engineering, and systems engineering because they seemed most likely to offer courses involving software engineering concepts. The first Software Engineering Education Directory was then published outlining these courses from the information provided on the questionnaires.

Since 1986 the directory has been published annually. Coverage has been expanded to include software engineering courses at the undergraduate level as these courses have become more common. Each year we have attempted to collect updated information from institutions previously represented in the directory. We have also attempted to contact institutions not previously included in the directory to make the publication more complete.

This year we have again included a listing of those institutions offering software engineering courses at both the graduate and undergraduate levels. This is the second section of the directory entitled Schools and Courses. In addition, we have added a new section profiling institutions that are currently offering master's degrees in software engineering. This is the first section of the directory entitled Graduate Degree Programs in Software Engineering.

To discuss any issues related to this report, please contact:

Education Program
Software Engineering Institute
Carnegie Mellon University
Pittsburgh, PA 15213
Internet: education@sei.cmu.edu
Graduate Degree Programs in Software Engineering

Graduate degree programs first appeared in the late 1970s at Texas Christian University, Seattle University, and the Wang Institute of Graduate Studies. All three programs responded to significant needs from local industry in the Dallas/Fort Worth, Seattle, and Boston areas, respectively. In 1985, three additional programs were started: at the College of St. Thomas in St. Paul, Minnesota, at Imperial College of Science and Technology in London, and at the University of Stirling in Scotland. The last four years have seen a significant increase in the development of and interest in such programs. We know of at least a dozen programs that either have been initiated or are under development.

In this section, we survey the programs in the United States for which we were able to obtain information. Readers will note substantial variation among the programs. This can be attributed to a number of factors:

- Most of the programs were developed in the absence of any recognized model curriculum.
- Each school had a number of existing courses, mostly in computer science, that were incorporated into the new programs, and these courses differed greatly among schools.
- Software engineering is a new discipline, and the developers of these programs had differing perceptions of the scope of the discipline, and its principles and practices.
- Each school was responding to perceived needs that varied greatly from one community to another.

Another notable point of variation among these programs is the program title. Many of the programs were unable to use the word engineering in their titles because of legal or administrative restrictions. In one way, it is unfortunate that the term software engineering is so nearly universally accepted as an informal name for the discipline, because it has generated an inordinate amount of argument on the semantic issues of whether (or not) software engineering is really engineering.

Andrews University

Location
Berrien Springs, Michigan

Program title
Master of Science in Software Engineering

Degree requirements
48 quarter credits (typically 4 credits per course):
8 credits of projects, 16 credits core courses,
0-20 credits foundation courses,
4-24 credits electives

Foundation courses
Data Structures
Data Base Systems
Systems Analysis I
Systems Analysis II
Operating Systems

Core courses
Computer Architecture
Software Engineering I
Software Engineering II
Programming Project Management

Program initiation
(unknown)

Source
This information was reported to the SEI by Andrews University in April 1989.
Boston University

Location       Boston, Massachusetts

Program title Master of Science in Software Systems Engineering

Degree requirements Nine courses of four credits each: seven required courses including a project course, and two electives. Two of the required courses differ depending on whether the student’s background is in hardware or software.

Required courses
- Applications of Formal Methods
- Software Project Management
- Software System Design
- Computer as System Component
- Software Engineering Project
- Advanced Data Structures (hardware background)
- Operating Systems (hardware background)
- Switching Theory and Logic Design (software background)
- Computer Architecture (software background)

Program initiation Fall 1989 (The program has existed as a software engineering option in the Master of Science in Systems Engineering since spring 1980; the current curriculum was adopted in January 1988.)


Boston University absorbed the Wang Institute’s facilities in 1987 and was the beneficiary of some of the experience of the Wang Institute. This program incorporates the best features of the MSE curriculum of Wang and the MS in Systems Engineering from Boston University. The program emphasizes the understanding of both hardware and software issues in the design and implementation of software systems. Special emphasis is placed on the software engineering of two important classes of computer systems: embedded systems and networked systems.

Both full-time and part-time programs are available, and most of the program is available through the Boston University Corporate Classroom interactive television system. The program can be completed in twelve months by full-time students.

The university also has a doctoral program leading to the PhD in Engineering, with research specialization in software engineering.
Carnegie Mellon University

Location
Pittsburgh, Pennsylvania

Program title
Master of Software Engineering

Degree requirements
Sixteen courses: six required courses and two Category I electives in the first year; a theory course, a business course, two Category II electives, two software engineering seminars, and a two-semester master’s project in the second year.

Required courses
- Software Systems Engineering
- Formal Methods in Software Engineering
- Advanced System Design Principles
- Software Creation and Maintenance
- Analysis of Software
- Software Project Management

Elective courses
Category I: Computer science courses at the senior undergraduate level

Category II: Advanced graduate courses in computer science

Prerequisite note
Prospective students must have at least two years of experience working in a sizable software project.

Program initiation
September 1989

Source
This information was reported to the SEI by CMU in June 1989.

The objective of Carnegie Mellon University’s MSE program is to produce a small number of highly skilled experts in software system development. It is designed to elevate the expertise of practicing professional software designers. The emphasis is on practical application of technical results from computer science; the nature of these technical results dictates a rigorous, often formal, orientation. The engineering setting requires responsiveness to the needs of end users in a variety of application settings, so the program covers resolution of conflicting requirements, careful analysis of tradeoffs, and evaluation of the resulting products. Since most software is now produced by teams in a competitive setting, the program also covers project organization, scheduling and estimation, and the legal and economic issues of software products.
College of St. Thomas

Location St. Paul, Minnesota

Program title Master of Software Design and Development

Degree requirements Ten required courses, including a two-semester project course sequence, and four elective courses. All courses are three semester credits.

Required courses
- Technical Communications
- Programming Methodologies
- DBMS and Design
- Systems Analysis and Design I
- Software Productivity Tools I
- Software Project Management
- Software Quality Assurance/Quality Control
- Legal Issues in Technology

Program initiation February 1985

Source This information was reported to the SEI by the College of St. Thomas in June 1989.

This program was developed through an advisory committee made up of technical managers from Twin Cities companies such as Honeywell, IBM, Sperry, 3M, NCR-Comten, and Control Data. Elective courses are added to the curriculum on the basis of need as expressed by technical managers in local industry or by students in the program.

The program is applied rather than research-oriented. Most instructors are from industry (14 of 23 in the spring 1989 semester). Instead of a thesis, students complete a two semester software project for a local company; in many cases this company is their employer, but the project must not be part of their normal work responsibilities.

Classes are offered evenings, and 98% of students work full-time in addition to their studies. Students normally require three years to complete the degree. The program enrolled 252 students in spring 1989.
George Mason University

Location Fairfax, Virginia

Program title Master of Science in Software Systems Engineering

Degree requirements 30 hours of course work in the School of Information Technology and Engineering, including five required courses.

Required courses
- Introduction to Software Engineering
- Formal Methods in Software Engineering
- Software Requirements, Prototyping, and Design
- Software Project Management
- Software Project Laboratory

Elective courses Five courses, including a second semester of Software Project Laboratory, or three courses and 6 semester hours of master’s thesis.

Program initiation Fall 1989 (core courses offered beginning Fall 1988)

Source This information was reported to the SEI by George Mason University in April 1989.

The program for the degree of Master of Science in Software Systems Engineering is concerned with engineering technology for developing and modifying software components in systems that incorporate digital computers. The program is concerned with both technical and managerial issues, but primary emphasis is placed on the technical aspects of building and modifying software systems.

In addition to the degree program, the university offers a graduate certificate program in software systems engineering. The certificate program is designed to provide knowledge, tools, and techniques to those who are working in, or plan to work in, the field of software systems engineering, but do not desire to complete all of the requirements for a master’s degree. Students in the certificate program must already hold or be pursuing a master’s degree in a science or engineering discipline. The requirements for the certificate are completion of the five required courses listed above.
Monmouth College

Location
West Long Branch, New Jersey

Program title
Master of Science in Software Engineering

Degree requirements
30 credit hours, consisting of 6 core and 4 elective courses.

Core courses
- Mathematical Foundations of Software Engineering I
- Programming-in-the-Large
- Project Management
- Computer Networks
- Software Engineering I
- System Project Implementation (Laboratory Practicum)

Elective courses
- Mathematical Foundations of Computer Science II
- Programming-in-the-Small
- Protocol Engineering
- Selected Topics in Software Engineering
- Programming Languages
- Computer Architecture
- Operating System Implementation
- Database Management
  (additional electives are under development)

Program initiation
1986

Source
This information was reported to the SEI by Monmouth College. Further information was obtained from "Revised Graduate Software Engineering Curriculum at Monmouth College," Amoroso, S., Kuntz, R., Wheeler, T., and Graff, B. Software Engineering Education; SEI Conference 1988, Gary A. Ford, ed. New York: Springer-Verlag, 1988, 70-80.

The program is offered through the departments of computer science and electrical engineering. The current enrollment is more than 100, and to date 50 students have completed the degree requirements.
Rochester Institute of Technology

Location  Rochester, New York

Program title  Master of Science in Software Development and Management

Degree requirements  48 credits (quarter system; typical course is 4 credits)

Required courses  Principles of Software Design
Object, Principles of Distributed Systems
Principles of Data Management
Software and System Engineering
Project Management
Organizational Behavior
Analysis and Design Techniques, or
Analysis & Design of Embedded Systems
Software Verification and Validation
Software Project Management
Technology Management
Software Tools Laboratory
Software Engineering Project

Program initiation  Fall 1987

Source  This information was reported to the SEI by RIT in April 1989.

The program has approximately 100 students at the RIT campus and 15 students at Griffiss Air Force Base in Rome, New York. Approximately 90% of the students attend part-time.
Seattle University

Location Seattle, Washington

Program title Master of Software Engineering

Degree requirements 45 credits (quarter system), including eight require core courses, four elective courses, and a three quarter project sequence.

Required courses
- Technical Communication
- Software Systems Analysis
- System Design Methodology
- Programming Methodology
- Software Quality Assurance
- Software Metrics
- Software Project Management
- Formal Methods

Elective courses
- System Procurement Contract Acquisition and Administration
- Database Systems
- Distributed Computing
- Artificial Intelligence
- Human Factors in Computing
- Data Security and Privacy
- Computer Graphics
- Real Time Systems
- Organization Behavior
- Organization Structure and Theory
- Decision Theory
- (other electives may be selected from the MBA program)

Prerequisite note Prospective students must have at least two years of professional software experience.

Program initiation 1978


Seattle University is an independent urban university committed to the concept of providing rigorous professional educational programs within a sound liberal arts background. In 1977, the university initiated a series of discussions with representatives from local business and industry, during which software engineering emerged as a critical area of need for specialized educational programs. Leading software professionals were invited to assist in the development of such a program, which was initiated the following year.

Normally, classes are held in the evenings and students are employed full-time in addition to their studies. The first students in the program graduated in 1982.
Texas Christian University

Location
Fort Worth, Texas

Program title
Master of Software Design and Development

Degree requirements
36 semester hours, including nine required courses and three electives; submission of a technical paper to a journal for publication.

Required courses
- Introduction to Software Design and Development
- Modern Software Requirements and Design Techniques
- Applied Design, Programming, and Testing Techniques
- Management of Software Development
- Economics of Software Development
- Computer Systems Architecture
- Database and Information Management Systems
- Software Implementation Project I
- Software Implementation Project II

Program initiation
Fall 1978

Source

The university established a graduate degree program in software engineering in 1978. Due to external pressure, prompted by the absence of an engineering college at TCU, the program was given its current name in 1980.

The program offers most of its courses in the evening, and all 50 students in the program are employed full-time in the Dallas/Fort Worth area.
University of Houston-Clear Lake

Location: Houston, Texas

Program title: Master of Science in Software Engineering Sciences

Degree requirements: 36 credit hours, including 30 hours of required courses and 6 hours of electives.

Required courses:
- Specification of Software Systems
- Principles and Applications of Software Design
- Software Generation and Maintenance
- Software Validation and Verification
- Software Project Management
- Master’s Thesis Research
- Advanced Operating Systems
- Theory of Information and Coding
- Synthesis of Computer Networks

Elective courses: Must be chosen from courses in software engineering, computer science, computer systems design, or mathematical sciences.

Program initiation: Awaiting approval

Source: This information was reported to the SEI by the University of Houston-Clear Lake in March 1989.

The university has submitted a proposal to the Texas Coordinating Board for Higher Education to offer the master’s degree. Approval is expected late in 1989 or early in 1990.
University of Pittsburgh

Location
Pittsburgh, Pennsylvania

Program title
Master of Science in Software Engineering

Degree requirements
33 credits: four required software engineering courses; additional required and optional courses in computer science

Required courses
(these are not the official course titles)
Software specification and design
Conversion of software specifications into products
Models of information systems
Software engineering project

Elective courses
Courses in areas such as:
Theory of computation
Design and analysis of algorithms
Language design
Advanced operating systems
Computer architecture
Modeling and simulation
Principles of database systems
User interface design and evaluation
Artificial intelligence

Program initiation
1989

Source
This information was reported to the SEI by the University of Pittsburgh in the Fall 1989.

This program is project oriented, emphasizes a methodological approach to software development, and provides a more focused education than the traditional Master of Science in computer science. Applicants with professional experience may be given special consideration for admission, although such experience is not required. All students' programs are individually designed with the help of a faculty advisor. There is no thesis requirement.
The Wichita State University

**Location**
Wichita, Kansas

**Program title**
Master of Science in Software Engineering; Master of Computer Science in Software Engineering

**Degree requirements**
30 credit hours total: two required courses, six credit hours of software engineering electives, additional electives in software engineering or computer science, and practicum (3 hours) or thesis (6 hours) on a software engineering topic.

**Required courses**
- Software Requirements, Specification and Design
- Software Testing and Validation

**Elective courses**
- Software Project Management
- Ada and Software Engineering
- Systems Analysis
- Topics in Software Engineering (recent offerings have included Configuration Management, Formal Methods, Quality Assurance, Software Metrics, and Formal Verification of Software)

**Program initiation**
Spring 1989

**Source**
This information was reported to the SEI by Wichita State in June 1989.

The Wichita State University Department of Computer Science has created a set of courses than can lead to a specialization in software engineering within the existing Master of Science and Master of Computer Science degree programs. These courses are taught in cooperation with the Software Engineering Institute’s Software Engineering Curriculum Project and Video Dissemination Project.
Schools and Courses

This year, as in the past, we updated course entries by contacting those institutions appearing in the last publication of the directory and requesting that they revise their entries. In addition, we made an effort to increase our coverage of software engineering courses by sending a large number of questionnaires to institutions not represented in past editions. More than 30 institutions represented in this version of the directory appear here for the first time.

We have edited the directory entries for accuracy, completeness, and relevance to software engineering. We are limited in our ability to edit responses, however, and might have included courses in the listings that do not seem to be closely related to software engineering study. However, all such courses were cited as part of a software engineering sequence in the responses that we received. In addition, please be aware that some “Textbook” entries actually contain titles of articles, reports, or other published papers. In such cases, the papers shown are consistently used and considered to be required course reading.

Changes in the Schools and Courses Section

Changes we adopted this year include:

- **Electronic mail addresses for contacts.** In the questionnaire mailed out this year, we requested that the contact for an institution provide us with his/her electronic mail address. For individuals who provided us with this information, we have included it in their listings.

- **Merging of information into new Tools field.** In previous versions of the directory, we have listed the compilers, computers, and languages used for each course in separate fields. In this edition, this information is merged into one field called **Tools.** This field also includes other software tools used in the course.

How to Use This Section

The directory is organized by state (in the U.S.), province (in Canada), or country (in other regions). Within each section, the directory entries are alphabetized by institution name. Each entry lists the following:

- **Degrees.** These are the degree programs that have software engineering courses as electives or requirements.

- **Contact.** This is the person you may contact for more information about the software engineering courses offered at the institution.

- **Update.** The month and year that a directory entry was last updated appear here.

- **Courses.** Software engineering and related (co-requisite, laboratory, or advanced elective) courses are listed under this title. Each **Course** has three sub-titles: **Codes, Textbooks,** and **Tools.** The **Codes** represent characteristics of the course and are explained in detail later in this section. **Textbooks** contains a listing of texts used for the course, and **Tools** contains a listing of software and hardware used.

Abbreviations of Degrees

Each degree entry has one or two parts. The first part is the degree; and the second part, if present, is the subject. For example, BCS means Bachelor of Computer Science, BS EE means Bachelor of Science in Electrical Engineering, MSE is Master of Software Engineering, and MA CE stands for Master of Arts in Computer Engineering. The abbreviations used appear on the following page.
<table>
<thead>
<tr>
<th>Degrees</th>
<th>Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAS</td>
<td>Associate of Applied Science</td>
</tr>
<tr>
<td>AS</td>
<td>Associate of Science</td>
</tr>
<tr>
<td>B</td>
<td>Bachelor Degree</td>
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<tr>
<td>BA</td>
<td>Bachelor of Arts</td>
</tr>
<tr>
<td>BBA</td>
<td>Bachelor of Business Administration</td>
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<tr>
<td>BC</td>
<td>Bachelor of Commerce</td>
</tr>
<tr>
<td>BCS</td>
<td>Bachelor of Computer Science</td>
</tr>
<tr>
<td>BE</td>
<td>Bachelor of Engineering</td>
</tr>
<tr>
<td>BED</td>
<td>Bachelor of Education</td>
</tr>
<tr>
<td>BEECS</td>
<td>Bachelor of Elec. Eng. and Comp. Sci.</td>
</tr>
<tr>
<td>BM</td>
<td>Bachelor of Mathematics</td>
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<tr>
<td>BS</td>
<td>Bachelor of Science</td>
</tr>
<tr>
<td>BSE</td>
<td>Bachelor of Science and Engineering</td>
</tr>
<tr>
<td>BO</td>
<td>Bachelor Degree (Other)</td>
</tr>
<tr>
<td>M</td>
<td>Master Degree</td>
</tr>
<tr>
<td>MA</td>
<td>Master of Arts</td>
</tr>
<tr>
<td>MCS</td>
<td>Master of Computer Science</td>
</tr>
<tr>
<td>ME</td>
<td>Master of Engineering</td>
</tr>
<tr>
<td>MED</td>
<td>Master of Education</td>
</tr>
<tr>
<td>MEM</td>
<td>Master of Engineering Management</td>
</tr>
<tr>
<td>MM</td>
<td>Master of Mathematics</td>
</tr>
<tr>
<td>MS</td>
<td>Master of Science</td>
</tr>
<tr>
<td>MSAT</td>
<td>Master of Applied Science and Tech.</td>
</tr>
<tr>
<td>MSDD</td>
<td>Master of Software Design and Dev.</td>
</tr>
<tr>
<td>MSE</td>
<td>Master of Software Engineering</td>
</tr>
<tr>
<td>MSSM</td>
<td>Master of Systems Science and Math.</td>
</tr>
<tr>
<td>MO</td>
<td>Master Degree (Other)</td>
</tr>
<tr>
<td>DENG</td>
<td>Doctor of Engineering</td>
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<tr>
<td>PHD</td>
<td>Doctor of Philosophy</td>
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<tr>
<td>PHD AT</td>
<td>Doctor of Applied Science and Tech.</td>
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<tr>
<td>SCD</td>
<td>Doctor of Science</td>
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<tr>
<td>O</td>
<td>Other</td>
</tr>
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</tbody>
</table>
Explanation of Course Codes
A complete Courses entry has five codes on the second line, arranged in order of course level, prerequisite, status, frequency, and the number of years that the course has been taught. The last code is self-explanatory. The other four codes are as follows:

Level:
- U Undergraduate
- G Graduate
- B Both
- O Other
- X No information supplied

Prerequisite:
- P The course has at least one prerequisite
- N None
- X No information supplied

Status:
- R Required
- E Elective
- B Both
- O Other
- X No information supplied

Frequency:
- B Biennial
- Y Once a year
- T Once a term
- A Alternate terms
- D On demand
- O Other
- X No information supplied

Following are examples of Courses entries containing these fields:

**Information Systems Analysis, Design, and Evaluation** (INF SC 272)
Codes: G P E O 6
Tools: C
IBM PC
Mac
VAX 780
VAX 8650

**Software Engineering and Software Tools** (INF SC 276)
Codes: G P E O 5
Textbooks: *Software Engineering: A Practitioner’s Approach, 2nd ed.* by Pressman, Roger S.
United States

Alabama

Auburn University
College of Engineering
Department of Computer Science and Engineering
Auburn University, AL 36849

Degrees: BS, MS, PHD

Contact: Dr. James H. Cross
Assistant Professor
(205) 826-4330

Update: September 1988

Courses:

Introduction to Software Engineering (CSE 422)
Codes: U P R A 4
Textbooks: Software Engineering: A Practitioner's Approach
by Pressman, Roger S.
Tools: IBM PC
TI Pro
Excelerator (InTech)

Software Engineering I (CSE 522)
Codes: B P E Y 4
Textbooks: Software Engineering: A Practitioner's Approach
by Pressman, Roger S.
Tools: VAX
Pascal

Software Engineering II (CSE 622)
Codes: G P E Y 4
by Teledyne Brown Engineering
Tools: IORL
Apollo

Software Engineering Environments (CSE 625)
Codes: G N E Y 1
Textbooks: CASE: Computer-Aided Software Engineering
by Fisher, Allen
Tools: CASE products: TAGS, Excelerator, HTI-001

University of Alabama at Birmingham
School of Natural Sciences and Mathematics
Department of Computer and Information Sciences
Birmingham, AL 35294

Degrees: BS, MS, PHD

Contact: Dr. Warren T. Jones
Chairman
(205) 934-2213
Update: February 1988

Courses: **Formal Specifications and Software Development** (CS 520)
Codes: G N R Y 9
Textbooks: *Software Engineering Concepts*
  by Fairley, Richard E.
Tools: Sequent Balance 21000
  VAX 11/750
  Ada, Modula-2

Additional Information:
Some software engineering content or purpose in other courses, especially:
CS 526 Program Verification (Manna, Z., *Mathematical Theory of Computation*)
CS 531 Computer Design (Hwang, K. and Briggs, F.A., *Computer Architecture and Parallel Processing*)
CS 535 Computer Communications Network (Schwartz, M., *Computer Communication Network Design and Analysis*)
CS 538 Performance Evaluation (Kobayashi, H., *Modeling and Analysis*)
All of these courses are electives.

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University of Alabama at Huntsville
College of Science
Computer Science
Huntsville, AL 35899

Degrees: BS, MS, PhD

Contact: Dr. Carl G. Davis
Chairman

Update: January 1990

Courses: **Software Engineering** (CS650)
Codes: G P E Y 5
Textbooks: *Software Engineering: A Practitioner’s Approach*
  by Pressman, Roger S.
Tools: TAGS, DCDS, MacProject
  Pascal, Ada, C

**Advanced Software Engineering** (CS750)
Codes: G P E D 1
Textbooks: *Software Engineering: Design, Reliability, and Management*
  by Shooman, Martin L.

**Software Requirements and Design Methodologies** (CS651)
Codes: G P E Y

**Software Testing and Reliability** (CS652)
Codes: G N E Y

**Software Management and Quality Assurance** (CS653)
Codes: G N E Y
University of Alaska-Fairbanks
College of Liberal Arts
Department of Mathematical Sciences
Program in Computer Science
Fairbanks, AK  99775-1110

Degrees:  BS CS, MS CS

Contact:  Prof. P. J. Knoke
Associate Professor of Computer Science
(907) 474-5107
User ID:  FFPJK@Alaska
Network:  BITNET

Update:  January 1990

Courses:  Software Engineering (CS 401)
Codes:  U N R Y 6
Textbooks:  Software Engineering - A Practitioner’s Approach, 2nd ed.
by Pressman, Roger S.
Tools:  MacProject II
various compilers, computers, languages

Additional Information:
Software Engineering is basically a project course in which teams of 5
students work on a project with requirements derived from real software
development needs in the community. The project covers a 14-week period
during which software engineering concepts are introduced through lectures.
Arizona State University
College of Engineering and Applied Science
Department of Computer Science
Tempe, AZ  85287

Degrees:  BS, MS, PHD

Contact:  Dr. James S. Collofello
Associate Professor
(602) 965-3733

Update:  November 1987

Courses:

Software Project Management and Development I (CSC 460)
Codes:  U P E T 9
Textbooks:  Software Engineering
by Sommerville, Ian
Tools:  VAX (VMS or UNIX)
Pascal, Ada

Software Project Management and Development II (CSC 560)
Codes:  G P E T 6
Textbooks:  Selected readings

Software Requirements (CSC 563)
Codes:  G P E Y 6
Textbooks:  Selected readings

Software Design (CSC 430/530)
Codes:  B P R T 5
Textbooks:  Abstraction and Specification in Program Development
by Liskov, Barbara and Guttag, John
Tools:  C
Sequent Symmetry running Dynix

Software Testing (CSC 565)
Codes:  G P E Y 6
Textbooks:  Selected readings

Software Maintenance (CSC 566)
Codes:  G P E Y 6
Textbooks:  Selected readings

Special Topics in Software Engineering (CSC 590)
Codes:  G P E D 6
Textbooks:  Selected readings

Compilers and Systems Software (CSC 453)
Codes:  B P R Y 1

Additional Information:
Textbooks for Special Topics in Software Engineering depend on topic. The topics
used in the past have been "Software Metrics" and "Software Environments.”

University of Arizona
Faculty of Science  
Department of Computer Science  
Tucson, AZ  85721

Degrees:  BS CS, MS CS, PHD CS

Contact:  Prof. Gregory R. Andrews  
Department Head  
(602) 621-6613  
User ID:  greg@cs.arizona.edu  
Network:  Internet

Update:  January 1990

Courses:  

Software Design (Computer Science 430/530)  
Codes:  B P R T 5  
Textbooks:  Abstraction and Specification in Program Development  
by Liskov, Barbara and Guttag, John  
The C Programming Language, 2nd ed.  
by Kernighan, Brian and Ritchie, Dennis  
The Elements of Programming Style  
by Kernighan, Brian and Plauger, P.J.  
The Unix Programming Environment  
by Kernighan, Brian and Pike, Rob

Compilers and Systems Software (Computer Science 453)  
Codes:  B P R Y 13  
Textbooks:  Compilers Principles, Techniques, and Tools  
by Aho, Sethi & Ullman  
Tools:  Sequent Symmetry running Dynix  
VAX running Berkeley UNIX  
C

Advanced Topics in Software Systems (Computer Science 630)  
Codes:  G P E D 13
University of Arkansas
Fulbright College of Arts and Sciences
Department of Computer Science
Program in Computer Science
Fayetteville, AR  72701

Degrees:  BS, MS, BA

Contact:  Prof. Greg Starling
Chairman
(501) 575-6427
User ID:  Starling@UAFSYSB.UARK.EDU
Network:  BITNET

Update:  February 1990

Courses:  Software Development (CSAS 4003)
Codes:    U  P  E  D  3
Tools:    PL/I, Pascal
          IBM 4381, Macintosh

  Structured Programming II (CSAS 1003)
Codes:    U  P  R  Y  3
Tools:    Pascal
          IBM 4381, Macintosh

Ada for Software Design (CSAS 4013)
Codes:    U  P  E  D
Textbooks: Ada
          by Saib, Sabina
Tools:    IBM 4381/R14, Macintosh
          VM CMS
          Ada
California Institute of Technology
Division of Engineering and Applied Science
Computer Science Option
Pasadena, CA 91125

Degrees: MS CS, PHD CS

Contact: Prof. K. Mani Chandy
Option Representative
(818) 359-6559
User ID: Mani@vlsi.caltech.edu
Network: Internet

Update: January 1990

Courses: Concurrency in Computation (CS 139)
Codes: B P E O 5
Tools: Message-passing concurrent computers
       Unix systems
       C

Computation, Computers & Programs (CS 20)
Codes: U P E T

Computer Algorithms (CS 138)
Codes: B P E T

Programming Laboratory (CS 140)
Codes: B P E O

Additional Information:
Concurrency in Computation is offered each Winter and Spring quarter.
Numerous related courses on Functional Programming, Computer Algorithms,
Computer Modeling and Data Analysis, Computer Graphics, Design and
Implementation of Programming Languages, Simulation, and Computer-Aided Design.
are also offered.

California Polytechnic State University
School of Engineering
Department of Computer Science
San Luis Obispo, CA 93407

Degrees: BS CS, MS CS

Contact: Prof. Jim Beug
Professor
(805) 546-2824

Update: May 1987

Courses: Software Engineering I (CSC 440)
Codes: U P R O 9
Textbooks: Software Engineering: A Practitioner's Approach
           by Pressman, Roger S.
Software Engineering II (CSC 441)
Codes: U P R O 1
Textbooks: *Software Engineering: A Practitioner’s Approach*
by Pressman, Roger S.
Tools: Mac II
Xerox 8010
Mesa, Modula-2

Software Tools (CSC 340)
Codes: U P E O 5
Tools: Pyramid UNIX
C, Mesa

Additional Information:
Software Engineering I, Software Engineering II, and Software Tools are offered quarterly.

California State Polytechnic University, Pomona
School of Science
Department of Computer Science
Pomona, CA 91768-4034

Degrees: B CS, M CS

Contact: Dr. Bruce P. Hillam
Chairman
(714) 869-3440

Update: October 1988

Courses: Advanced Programming (CS 340)
Codes: U P R T 2
Textbooks: *Software Development in Pascal*
by Sahni, Sartaj
Tools: Pascal
IBM PC/XT

Software Engineering (CS 360)
Codes: U P E O 2
Textbooks: *Software Engineering with Ada*
by Booch, Grady
Tools: Irvine Compiler Corporation, Ada
Integrated Solution workstation

Additional Information:
Software Engineering is offered twice a year. Local industry has expressed interest in this course being offered via closed circuit television.

California State University, Chico
College of Engineering, Computer Science and Technology
Department of Computer Science
Chico, CA 95929

Degrees: BS, MS

Contact: Dr. Orlando S. Madrigal
Professor and Chairman
(916) 895-6442
Update: November 1987

Courses: Software Engineering (CSCI 210)
Codes: U P E T 3
Textbooks: Software Engineering Concepts
by Fairley, Richard E.
The Mythical Man-Month: Essays on Software Engineering
by Brooks, Frederick P.

Systems Design (CSCI 270)
Codes: U P R T 11
Textbooks: Systems Analysis and Design: Traditional and Advanced Concepts and Techniques
by Wetherbe, James C.

System Design Theory (CSCI 370)
Codes: G P E Y 11
Textbooks: Controlling Software Projects: Management Measurement and Estimation
by DeMarco, Tom
IEEE Tutorial: Software Management
by Reifer, Donald

Advanced Software Practices (CSCI 251)
Codes: U N E T 11
Textbooks: Programming in Ada
by Barnes, John Gilbert Presslie
Tools: Ada
IBM AT
Prime 9600

Software Metrics and Control (CSCI 310)
Codes: G P E O 3

Software Design (CSCI 311)
Codes: G P E O 3
Textbooks: A Technique for Software Module Specification with Examples
by Parnas, D.L.
Chief Programmer Team Management of Production Programming
by Baker, F.T.
Concise Notes on Software Engineering
by DeMarco, Tom
Data Design in Structured Systems Analysis
by Gane, C.P.
Fundamentals of Design
by Freeman, Peter
Go To Statement Considered Harmful
by Dijkstra, E.
Programming Considered as a Human Activity
by Dijkstra, E.
The Humble Programmer
by Dijkstra, E.
The Mythical Man-Month: Essays on Software Engineering
by Brooks, Frederick P.

Software Analysis and Testing (CSCI 312)
Codes: G P E O 11

Additional Information:
Software Metrics and Control, Software Design, and Software Analysis and Testing are offered during the Fall and Spring semesters.
Courses:

**Program Design Techniques (CS 380)**
- Codes: U P R T 9
- Textbooks: *Software Design and Development* by Gilbert, Philip
  *Structured Analysis and System Specification* by DeMarco, Tom
- Tools: Pascal (Turbo, PR1ME)
  AT&T 3B5
  CDC Cyber 170/750
  DEC PDP 11/44
  IBM XT
  Prime

**Software System Development and Laboratory (CS 480)**
- Codes: U P E T 11
- Textbooks: *Software Design and Development* by Gilbert, Philip
- Tools: Pascal (Turbo)
  AT&T 3B5
  CDC Cyber 170/750
  DEC PDP 11/44
  IBM XT
  Prime

**Software Engineering (CS 580)**
- Codes: G N R Y 1
- Textbooks: *Software Engineering: Design, Reliability, and Management* by Shooman, Martin L.
- Tools: Pascal
  AT&T 3B5
  CDC Cyber 170/750
  DEC PDP 11/44
  IBM XT
  Prime (Intech)
  Pro Mod
  Analyst Toolkit (Yourdon), Design Aid (Nastec), Excelerator

**Software Engineering Economics (CS 494 SEE)**
- Codes: B P E Y 4
- Textbooks: *Software Engineering Economics* by Boehm, Barry W.

**Software Engineering with Ada (CS 496 ADA)**
- Codes: B P E Y 3
- Textbooks: *Software Engineering with Ada* by Booch, Grady

Additional Information:
- Four Computer-Aided Software Engineering (CASE) tools are used in the school's
computer lab.

California State University, Sacramento
School of Engineering and Computer Science
Department of Computer Science
Concentration in Software Engineering
Sacramento, CA  95819

Degrees:  BS CS, MS CS

Contact:  Dr. Richard H. Thayer
         Professor in Computer Science
         (916) 278-6834

Update:  September 1988

Courses:  Computer Software Engineering (CSC 131)
Codes:  U P R T 5
Textbooks:  Software Engineering with Systems Analysis and Design
            by Steward, Donald V.
Tools:  IBM PCs
        CASE tools

Computer System Analysis (CSC 170)
Codes:  U P E T 13
Textbooks:  Introduction to System Analysis and Design: A Structured Design
            by Kendall, Penny A.
Tools:  IBM PCs
        CASE tools

Software Engineering Project Management (CSC 171)
Codes:  U P E Y 11
Textbooks:  Project Management: A Managerial Approach
            by Merdith, Jack R. and Mantel, Samuel J., Jr.
            The Mythical Man-Month: Essays on Software Engineering
            by Brooks, Frederick P.

Documentation Design (CSC 178)
Codes:  U N E Y 4
Textbooks:  Writing Handbook for Computer Professionals
            by Skees, William D.
Tools:  IBM PCs
        Word processors

Senior Project: Part I (CSC 190)
Codes:  U P R T 17
Textbooks:  Guide for Senior Project Documents
            by Thayer, Richard H.

Senior Project: Part II (CSC 191)
Codes:  U P R T 7
Textbooks:  Guide for Senior Project Documents
            by Thayer, Richard H.

Software Testing and Quality Assurance (CSC 196D)
Codes:  U P E Y 2
Textbooks:  Software Testing and Quality Assurance
            by Beizer, Boris

Foundation of Software Engineering (CSC 203)
Software Requirement Analysis and Design (CSC 210)
Codes: G P E Y 11
Textbooks: An Integrated Approach to Software Development
by Abbott, J.R.
Tools: IBM PCs
CASE tools

Software Engineering Economics (CSC 231)
Codes: G P E Y 15
Textbooks: Software Engineering Economics
by Boehm, Barry W.
Tools: IBM PCs
WICOMO or other PC-based cost analysis tools

Advanced Computer System Analysis (CSC 240)
Codes: G P E Y 11
Textbooks: Structured Development for Real-Time Systems
by Ward, P.T. and Mellor, S.J.

Introduction to System Engineering (Engr 130)
Codes: U P E Y 3
Textbooks: Systems Engineering: Methodology and Applications
by Sage, Andrew P. (ed.)

Additional Information:
Software Engineering Project Management is offered once every 1 or 1.5
years. Software Requirement Analysis and Design, Software Engineering
Economics, and Advanced Computer System Analysis are offered once every 3
semesters. Foundation of Software Engineering is required for a MS in Computer
Science if the student does not have an undergraduate foundation in software
engineering.

National University
School of Engineering and Computer Sciences
Master of Science in Software Engineering
San Diego, CA  92108

Degrees: MS SE

Contact: Prof. Peter H. R. Sibley
Dean, School of Eng. and Comp. Sciences
(619) 563-7123

Update: June 1987

Courses: Principles of Software Engineering (CS 620)
Codes: G N R T 3
Textbooks: CMS Primer Release 3
by IBM
Information System Specification and Design Road Map
by Connor, D.
Tools: TeleSoft Ada
IBM 4381 with VM/CMS
CMS

Advanced Software Engineering (CS 622)
Codes: G P R T 3
Textbooks: *Software Engineering with Ada*
by Booch, Grady
Tools: TeleSoft Ada
IBM 4381 with VM/CMS
CMS

**Verification and Validation Techniques** (CS 626)

Codes: G P R T 3
Textbooks: *Software Verification and Validation: Realistic Project Approaches*
by Deutsch, M.S.
Tools: TeleSoft Ada
IBM 4381 with VM/CMS
CMS

**Software Engineering Project I** (CS 627a)

Codes: G P R T 3
Textbooks: *Information System Specification and Design Road Map*
by Connor, D.
Tools: TeleSoft Ada
IBM 4381 with VM/CMS
CMS

**Software Engineering Project II** (CS 627b)

Codes: G P R T 3
Textbooks: *Information System Specification and Design Road Map*
by Connor, D.
Tools: TeleSoft Ada
IBM 4381 with VM/CMS
CMS

**Software Engineering Project III** (CS 627c)

Codes: G P R T 3
Textbooks: *Information System Specification and Design Road Map*
by Connor, D.
Tools: TeleSoft Ada
IBM 4381 with VM/CMS
CMS

**Additional Information:**

This program is offered at all of the National University campuses. Dial-up facilities are offered on all campuses so that a student with a computer and a modem can work on the IBM mainframe from home. All classes are offered in a 1 class per month format, for a total of 48 contact hours in a 4 week period. The last 3 classes (CS 627a, CS 627b, and CS 627c) are capstone senior project classes where a major software package is designed and implemented using all of the software engineering techniques taught in the curriculum. Software engineering techniques are stressed throughout the Bachelor of Science in Computer Science degree program.

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**Northrop University**
Department of Computer and Information Science
Program - BS with specialization in SE
Los Angeles, CA 90069

**Degrees:** BS CS, MS CS, MS IS

**Contact:** Dr. Julius G. Assad
Associate Professor
(213) 337-4413
Update: September 1988

Courses: Software Engineering I (CS-471)
Codes: U P E O 3
Textbooks: Software Engineering: the Production of Quality Software by Pfleeger, Shari Lawrence

Software Engineering II (CS-476)
Codes: U P E Y 1

Advanced Software Design (CS-475)
Codes: U P E Y 3
Textbooks: Structured Systems Analysis: Tools and Techniques by Gane, Chris and Sarson, Trish
Tools: Turbo C, Turbo Pascal, XDB Excelerator CASE tools
IBM PC
FORTRAN, Gane/Sarson PDLs, SQL

San Jose State University
School of Science
Department of Mathematics and Computer Science
Programs in Computer Science and Mathematics
San Jose, CA  95192-0103

Degrees: BA, BS, MA, MS

Contact: Prof. Veril L. Phillips
Chairman
(408) 924-5100

Update: February 1990

Courses: Graduate Seminar in Computer Science (Math 295)
Codes: G P R T 8
Tools: Assembly (various), C, Pascal, possibly others (individual projects)

Additional Information: Graduate Seminar in Computer Science is essentially a software project requirement, emphasizing software engineering principles.

Santa Clara University
School of Engineering
EECS
Computer Engineering
Santa Clara, CA  95053

Degrees: BS CE, MS CE, PHD CE, BS EE, MS EE, PHD EE

Contact: Dr. Daniel W. Lewis
Associate Chair for Computer Engineering
(408) 554-4483
User ID: DLEWIS@SCU
Network: BITNET

Update: February 1990

Courses: Structure and Interpretation of Computer Programs (EECS 172)
Codes: U P B Y 4
Textbooks: Structure and Interpretation of Computer Programs  
by Abelson and Sussman  
Tools: IBM PC, HP engineering workstations  
TLC-LISP, PC-Scheme, Scheme

Introduction to Software Engineering (EECS 174)  
Codes: U P B Y  
Textbooks: Software Engineering: A Practitioner's Approach  
by Pressman, Roger S.  
Tools: Unix workstations

Structure and Interpretation of Computer Programs (EECS 561)  
Codes: G P B A 4  
Textbooks: Structure and Interpretation of Computer Programs  
by Abelson and Sussman  
Tools: HP workstations, IBM PC/AT and compatibles  
Scheme, PC-Scheme

Software Engineering (EECS 585)  
Codes: G P B Y 4  
Textbooks: Software Engineering: A Practitioner's Approach  
by Pressman, Roger S.  
Tools: Unix workstations

Stanford University  
School of Engineering  
Department of Computer Science  
Stanford, CA 94305

Degrees: BS CS, BS CSE, MS, MS AI, PHD

Contact: Roy Jones  
(415) 723-6092

Update: January 1989

Courses: Object-Oriented Design with Ada (CS149)  
Codes: B P E Y 1  
Textbooks: Software Engineering with Ada  
by Booch, Grady  
Tools: VAX 8650

Software Engineering Laboratory (CS247)  
Codes: B P E Y 1  
Tools: Microcomputer (varies)

The Claremont Graduate School  
Department of Information Science  
Claremont, CA 91711

Degrees: MS CIS, MS MIS, PHD

Contact: Prof. Lorne Olfman  
Assistant Professor  
User ID: OLFMANL@CLARGRAD  
Network: BITNET

Update: November 1989
Courses:  Information Systems-Analysis and Design (IS 305)
Codes:   G P R Y 5
Textbooks:  Modern Structured Analysis
by Yourdon, Edward N.
by Page-Jones, Meilir
Tools:   IBM PC/AT
Design/1, Method/1, Excelerator

Systems Planning (IS 328)
Codes:   G P B Y 5
Textbooks:  Readings in Systems Planning (IS 328)
by Olfman, Lorne
Tools:   IBM PC/AT
Action Diagrammer, Design/1, Excelerator, Rbase for DOS
University of Arizona GroupSystems, PRISM
selected 4GLs

Large Scale Software Development (IS 362)
Codes:   G P R Y 5
Textbooks:  Software Engineering
by Sommerville, Ian
Tools:   IBM PC/AT, Macintosh
Excelerator
selected 4GLs

Additional Information:
We follow the Communications of the ACM, November 1982 program for MS degrees in information systems.

University of California, Berkeley
College of Engineering
Department of Electrical Engineering and Computer Science
Program in Computer Science
Berkeley, CA  94720

Degrees:  BEECS, MS, ME, PHD, DENG

Contact:  Mrs. Betty Webster
CS Scheduling Assistant
(415) 643-6130

Update:

Additional Information:
Introduction to Computer Science is offered in the Fall and Spring. Data Structures and Advanced Programming is offered in the Fall, Spring, and Summer.

University of California, Irvine
Department of Information and Computer Science
Program in Computer Science
Irvine, CA  92717

Degrees:  BS, MS, PHD

Contact:  Prof. Nancy Leveson
Associate Professor
Update: July 1987

Courses: **Project in System Design** (ICS 195)
- Codes: U N O T 1
- Textbooks: *Software Engineering Concepts* by Fairley, Richard E.
- Tools: Sun UNIX
  - VAX UNIX

Software Engineering A (245A)
- Codes: G N X Y 1
- Textbooks: *Software Engineering Concepts* by Fairley, Richard E.
- Tools: Sun UNIX
  - VAX UNIX

Software Engineering B (245B)
- Codes: G N X Y 1
- Textbooks: *IEEE Tutorial: Software Testing and Validation Techniques* by Miller, Edward and Howden, William E.

Additional Information:
Project in System Design is an option to fulfill the project requirement for B.S.

University of California, Santa Cruz
Natural Sciences
Computer and Information Sciences and Computer Engineering
Santa Cruz, CA 95064

Degrees: BS IS, MS IS, PHD IS, BS CE, MS CE, PHD CE

Contact: Nancy Ann Furber
Administrative Manager
(408) 459-4822
User ID: nancy@spica.ucsc.edu
Network: Internet

Update: January 1990

Courses: **Software Methodology** (CIS 115)
- Codes: U P E Y 4
- Textbooks: *Software Engineering, 3rd ed.* by Sommerville, Ian
- Tools: C++
  - Unix
  - make, RCS, curses package (specifically for C++)
  - data flow diagrams, paper prototyping

Software Engineering (CE 276)
- Codes: G P E Y 1
- Textbooks: Selected readings

University of Southern California (Entry 1)
School of Engineering  
Department of Industrial and Systems Engineering  
Program in Human Factors  
Los Angeles, CA  90089

Degrees:  MS ISE, PHD ISE

Contact:  Dr. Mark H. Chignell  
Assistant Professor  
(213) 743-2705  
User ID:  chignell%mizar.usc@oberon.usc.edu

Update:  October 1988

Courses:  Intelligent Interfaces  (ISE 578)  
Codes:  G P E Y 4  
Textbooks:  Expert Systems for Experts  
by Parsaye, K. and M. Chignell  
Tools:  IBM AT  
Macintosh II  
HyperCard / Hypertalk, Intelligence / Compiler

Cognitive Engineering  (ISE 576)  
Codes:  G P R Y 2  
Textbooks:  Readings in Human-Computer Interaction  
by Baecker, R.M. and W.A.S. Buxton  
Tools:  MacIntosh II  
HyperCard / Hypertalk

Additional Information:  
Intelligent Interfaces focuses on the use of machine reasoning and graphics  
to improve the human interface. It also covers issues relating to the  
modularity and maintainability of complex software. It stresses a logic  
programming approach.

University of Southern California (Entry 2)  
School of Engineering  
Computer Science Department  
Los Angeles, CA  90089

Degrees:  MS CS, PHD CS

Contact:  Dr. Mark H. Chignell  
Assistant Professor  
(213) 743-2705  
User ID:  chignell%mizar.usc@oberon.usc.edu

Update:  November 1988

Courses:  Introduction to Software Engineering  (CS 201L)  
Codes:  U P R T 1  
Textbooks:  C Programming in the Berkeley Unix Environment  
by Horspool, R.  
The Practical Guide to Structured Systems Design  
by Page-Jones, Meilir  
Tools:  Sun 3 Workstations

Design and Construction of Large Software Systems  (CS 477L)  
Codes:  U P E Y 1  
Textbooks:  Software Engineering Concepts
by Fairley, Richard E.  
*The C Programming Language*
by Kernighan, Brian and Richie, Dennis  
*Writing Efficient Programs*
by Bentley, Jon Louis

Tools: Sun 3 Workstations

**Management of Computing: Theory and Practice (CS 510)**

Codes: G N E Y 1  
Tools: Sun 3 and IBM RT Workstations

**Design and Construction of Large Software Systems (CS 577a)**

Codes: G N E Y 1  
Textbooks:  
*Software Engineering: A Practitioner's Approach, 2nd ed.*
by Pressman, Roger S.  
*Software Specification Techniques*
by Gehani, N. and McGettrich, A.  
*The Unix Programming Environment*
by Kernighan, Brian and Pike, Rob  
Tools: Sun 3 Workstations

**Design and Construction of Large Software Systems (CS 577b)**

Codes: G P E Y 1  
Textbooks:  
*Advanced Unix Programming*
by Rochkind, Mark J.  
*C, a Reference Manual*
by Harbison, Samuel P. and Steele, Guy L.  
*C Programming in the Berkeley Unix Environment*
by Horspool, R.  
*The X Windows System*
by Gettys, J. et al.  
Tools: Sun 3 Workstations
Colorado

**United States Air Force Academy**
Department of Computer Science  
Program in Computer Science  
Colorado Springs, CO  80840

**Degrees:** BS CS

**Contact:** LtCol William E. Richardson  
Professor and Head  
(719) 472-3592  
User ID: BILL@USAFA.ARPA

**Update:** September 1988

**Courses:**
- **Systems Analysis and Design I** (Comp Sci 453)  
  Codes: U P R Y 7  
  Textbooks:  
  *Software Engineering: A Practitioner’s Approach*  
  by Pressman, Roger S.  
  *Structured Systems Analysis: Tools and Techniques*  
  by Gane, Chris and Sarson, Trish

- **Systems Analysis and Design II** (Comp Sci 454)  
  Codes: U P R Y 7  
  Textbooks: *The Practical Guide to Structured Systems Design*  
  by Page-Jones, Meilir

- **Fundamentals of Computer Science** (Comp Sci 225)  
  Codes: U P R T 3  
  Textbooks:  
  *Advanced Programming and Problem Solving with Pascal*  
  by Schneider, G. Michael and Bruell, Steven C.  
  Tools: DG Pascal  
  DG MV10000

- **Real-Time Systems** (Comp Sci 473)  
  Codes: U P R Y 1

**Additional Information:** Approximately 1/4 of Fundamentals of Computer Science deals with software engineering.

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**University of Colorado at Colorado Springs**
School of Engineering and Applied Science  
Department of Computer Science  
Colorado Springs, CO  80933

**Degrees:** BS, MS

**Contact:** Dr. Robert W. Sebesta  
Chair  
(303) 593-3325

**Update:** None

**Courses:**
- **Introduction to Software Engineering** (CS 330)  
  Codes: U N R T 1
Textbooks: Software Engineering with Ada and Modula-2
by Wiener, Richard, and Sincovec, Richard
Tools: MicroVAX

Systems Engineering Management (CS 435/535)
Codes: B N E A 1

Software Engineering Laboratory (CS 436/536)
Codes: B P E A 1

Software Specification and Requirements Analysis (CS 531)
Codes: G N E A 1

Software Design (CS 532)
Codes: G N E A 1

Software Testing (CS 533)
Codes: G N E A 1

Software Maintenance (CS 534)
Codes: G N E A 1

Topics and Readings in Software Engineering (CS 630)
Codes: G N E D 1

Additional Information:
Software Engineering Laboratory with 7 MicroVAX computers, 2 VAX stations,
1 Sun and a Gould System.

University of Denver
Faculty of Mathematical and Computer Sciences
Department of Mathematics and Computer Science
Program in Computer Science
Denver, CO 80208

Degrees: MS, PHD

Contact: Prof. Michael S. Martin
Assistant Chairperson
(303) 871-3291
User ID: mmartin@ducair

Update: September 1988

Courses: Software Engineering I, II, III (COMP 4380, COMP 4381, COMP 4382)
Codes: G P E Y 5
Tools: C, Pascal
VAX 11/750

Additional Information:
Software Engineering I is offered twice a year.
Connecticut

Central Connecticut State University
School of Arts and Science
Department of Mathematics and Computer Science
Program in Computer Science
New Britain, CT 06050

Degrees: BS

Contact: Prof. George B. Miller
Chairman, Math and Computer Science
(203) 827-7334

Update: November 1987

Courses: Introduction to Software Engineering (CS 410)
Codes: U P E Y 5
Textbooks: Software Engineering with MODULA-2 and Ada by Wiener, Richard S. and Sincovec, Richard F.
Tools: VAX 8600
Pascal

Software Engineering II (CS 514)
Codes: G P R Y 2
Tools: Pascal

Computer System Software and Architecture I (CS 516)
Codes: G P R Y 2
Tools: Pascal

Computer System Software and Architecture II (CS 517)
Codes: G P R Y 2
Tools: Pascal

On Line, Real Time, and Time Sharing Systems (CS 257)
Codes: G P E Y 2
Tools: Pascal

The Hartford Graduate Center
School of Engineering and Science
Department of Computer and Information Science
Program in Computer and Information Science
Hartford, CT 06120

Degrees: MCS

Contact: Dr. Michael Danchak
Dean, School of Engineering and Science
(203) 548-2450

Update: None

Courses: Software Engineering I (35677)
Codes: G P B T 5

Software Engineering II (35678)
Software Engineering Specification (66966)
Codes: G P E Y

User Interface Development (66834)
Codes: G P E Y 5
Textbooks: Designing the User Interface
by Schneiderman
Readings in Human Computer Interaction
by Baecker & Buxton
Tools: Sun, Macintosh
Sunview, Hypercard, Prototyper
C, Pascal, Hypertalk
Delaware

University of Delaware
College of Arts and Science
Department of Computer and Information Sciences
Newark, DE 19716

Degrees: BA, BS, MS, PHD

Contact: Prof. Eugene J. Bell
Assistant Professor
(302) 451-1957

Update: None

Courses: Advanced Topics: Software Engineering (CIS 879)
Codes: G N E O 2
Tools: C
Modula-2
VAX Unix
District of Columbia

The American University
Department of Computer Science and Information Systems
Washington, DC 20016

Contact: Dr. Mehdi Owrang
Assistant Professor
(202) 885-3159

Update: January 1990

Courses: Software Engineering (40-345)
Codes: UPEY2
Textbooks: Software Engineering
by Sommerville, Ian
Tools: C, Pascal
Teamwork
IBM PC

Software Engineering (40-700)
Codes: GPED
Textbooks: Software Engineering: The Production of Quality Software
by Pfleeger, Shari Lawrence

The George Washington University
School of Engineering and Applied Science
Department of Electrical Engineering and Computer Science
Washington, DC 20052

Degrees: BS CS, MS CS, SCD

Contact: James Foley
Chairman
(202) 994-6083

Update: None

Courses: System Software and Software Engineering (C.Sci. 151)
Codes: UPRT5
Textbooks: Software Engineering, 3rd ed.
by Sommerville, Ian
Tools: Sun Workstations
C, Unix

Computer Science 270 (C.Sci. 270)
Codes: GPEY2
Textbooks: Program Construction and Verification
by Backhouse, R. C.
The Specification of Complex Systems
by Cohen, B., W.T. Harwood, and M.I. Jackson
Tools: PC
Sun
Lex, Lint, Prolog, UNIX, Yacc

Additional Information:
System Software and Software Engineering is offered each Fall.
Florida

Barry University
School of Computer Science
Department of Computer Science
Computer Science
Miami, FL 33161

Degrees: BCS, MCS, MO, PHD CS, CIS, MIS, SE, TCS, CSE

Contact: Dr. L. O. Stromberg
Chair, Department of Computer Science
(305) 899-3608
User ID: LOS@Barry.edu

Update: January 1990

Courses: Software Engineering (CS 640)
Codes: G P R A 2
Textbooks: Tutorial on Software Design Techniques, 4th ed.
by Freeman & Wasserman
Tools: Ada, C, Pascal
CASE, Focus
VAX 6310

Applied Software Development Project (CIS 512)
Codes: G P R T 4
Textbooks: Structured Analysis Methods
by Teague
Tools: Ada, C, Pascal
CASE, Focus
VAX 6310

Florida Atlantic University
College of Engineering
Department of Computer Science
Boca Raton, FL 33431-0991

Degrees: BS, MS, MCS

Contact: Dr. Neal S. Coulter
Chairman
(407) 367-3180
User ID: coulterm@servax
Network: BITNET

Update: November 1989

Courses: Software Engineering (CIS 6610)
Codes: G N R A 9
Textbooks: Software Engineering
by Sommerville, Ian
Tools: Ada, C++, Pascal
HP 900V/300 Series
PCs
VAX 6230
VAX 8800
**Principles of Software Design** (CIS 4610)
Codes: U P R T 2
Textbooks: *Programming in Ada*
    by Barnes, John Gilbert Presslie
*Software Engineering: A Programming Approach*
    by Bell, D., Morrey, I. and Pugh, J.
Tools: DEC Ada
VAX 8800

**Additional Information:**
Software Engineering is offered 1-2 times per calendar year. Principles of Software Design is offered 2-3 times per calendar year.

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**Nova University**
Center for Computer and Information Sciences
Graduate Department of Computer Science
Program in Computer Science
Ft. Lauderdale, FL 33314

**Degrees:** BS CS, MS CS, SCD CS

**Contact:** Dr. Edward R. Simco
Director
(305) 475-7563
User ID: uucp:gatech!uflorida!novavax!led

**Update:** February 1990

**Courses:**

**Software Engineering** (CIS 680)
Codes: G N R Y 4
Textbooks: *Software Engineering: A Practitioner's Approach*
    by Pressman, Roger S.
Tools: Ada, Concurrent C, Pascal, C++
    3B2/500 (UNIX)
    VAX 785 (VMS)
    VAX 8550 (ULTRIX)

**Software Engineering Implementation** (CIS 682)
Codes: G P E Y 4
Textbooks: *Practical Handbook for Software Development*
    by Birrell and Ould
    *Software Engineering Metrics and Models*
    by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.
Tools: Ada, Concurrent C, Pascal, C++
    3B2/500 (UNIX)
    VAX 785 (VMS)
    VAX 8550 (ULTRIX)

**Software Engineering** (CIS 770)
Codes: G P R Y 2
Textbooks: *Software Reliability, Prediction, Application*
    by Musa, J.
Tools: Ada, Concurrent C, Pascal, C++
    3B2/500 (UNIX)
    VAX 785 (VMS)
    VAX 8550 (ULTRIX)

**Software Engineering Project** (CIS 870)
Codes: G P R Y 2
Textbooks: *Designing the User Interface*
by Shneiderman, Ben
Tools: Ada, Concurrent C, Pascal, C++
       3B2/500 (Unix)
       VAX 785 (VMS)
       VAX 8550 (ULTRIX)

Additional Information:
Software Engineering is offered twice a year.

University of Central Florida (Entry 1)
Department of Computer Engineering (CEBA 207)
Program in Computer Engineering
Orlando, FL 32816

Degrees: BS E, MS E, MS E, PHD

Contact: Dr. Darrell G. Linton
         Associate Professor of Engineering
         (407) 275-2236

Update: September 1988

Courses: Software Engineering I (ECM 5806)
Codes: B P B Y 1
Textbooks: Ada: An Introduction
         by Saib, S.
         (ANSI MIL-STD-1815A)
         Software Engineering Concepts
         by Fairley, Richard E.
Tools: Gould 32/6780 (ISCS Ada translator)
       IBM 4381 (Telesoft Ada compiler)
       VAX 11/750 (Ada compiler)

Software Engineering II (ECM 6807)
Codes: G P E Y 1
Textbooks: Ada: An Introduction
         by Saib, S.
         (ANSI MIL-STD-1815A)
         Software Engineering Concepts
         by Fairley, Richard E.
Tools: Gould 32/6780 (ISCS Ada translator)
       IBM 4381 (Telesoft Ada compiler)
       VAX 11/750 (Ada compiler)

University of Central Florida (Entry 2)
College of Arts and Sciences
Department of Computer Science
Orlando, FL 32816

Degrees: MS CS, PHD CS

Contact: Dr. Darrell G. Linton
         Associate Professor of Engineering
         (407) 275-2236

Update: None
Courses:  **Software Engineering** (COP 5632)
Codes: G N E X 1

**Software Tools** (COP 5682)
Codes: G P E X 1

Additional Information:
A student’s plan of study can be designated to emphasize any number of areas within Computer Science. Some sample plans of study are Architecture Emphasis, Operating Systems Emphasis, Artificial Intelligence Emphasis, Data Base Management Emphasis, and Software Tools Emphasis. These do not include all areas of emphasis, but show the flexibility of the Master of Science Program.

University of South Florida
College of Engineering
Department of Computer Science and Engineering
Tampa, FL 33620

Degrees: MS, PHD

Contact: Dr. M. R. Varanasi
Graduate Program Coordinator
(813) 974-3033

Update: None

Courses: **Software Engineering I - Basic Principles and Formal Methods** (COP 6630)
Codes: G N E B 1

**Software Engineering II - Tools and Applied Techniques** (COP 6634)
Codes: G P E B 1
University of Hawaii at Hilo
Natural Sciences
Department of Computer Science and Engineering
Hilo, HI  96720

Degrees:  BCS

Contact:  Dr. Bill Chen
Professor
(808) 933-3388
User ID:  chen@UHCCUX.UHCC.Hawaii.EDU
Network:  Internet

Update:  February 1990

Courses:  

- **Compiler Theory** (CS 435)
  Codes:  U P E Y 4

- **Computer Sciences Applications** (CS 494)
  Codes:  U P E D 1

- **Software Engineering Methodologies** (CS 465)
  Codes:  U P E Y
  Textbooks:  *Modern Structured Analysis*
  by Yourdon, Edward N.
  *Software Engineering*
  by Sommerville, Ian
  *Software Engineering: A Practitioner’s Approach*
  by Pressman, Roger S.
  *Teaching a Project-Intensive Introduction to Software Engineering*
  by Tomayko, James

- **Systems Analysis and Design** (CS 360)
  Codes:  U P R Y 5
  Textbooks:  *Computers and the Information Society*
  by Rosenberg, R.
  *Crafting a Compiler*
  by Fischer, C. and LeBlanc, R. Jr.
  *Modern Structured Analysis*
  by Yourdon, Edward N.
  Selected readings
  *Software Engineering*
  by Sommerville, Ian
  *Software Engineering: A Beginners Guide*
  by Pressman, Roger S.
  *Software Engineering: A Practitioner’s Approach*
  by Pressman, Roger S.
  *Software Engineering: An Industrial Approach*
  by Radice, R. and Phillips, R.
  *Systems Analysis and Design*
  by Kendall, J. and Kendall, K.

Tools:  Excelerator
IBM PC
Macintosh
Ada/CS, Turbo Pascal
Janus/Ada
MacBubbles
Database Management System Design (CS 425)

Codes: U P E D 1

Textbooks: Principles of Database Systems
by Ullman, J.
Teaching a Project-Intensive Introduction to Software Engineering
by Tomayko, James
Understanding Database Management Systems
by Vasta, J.

Tools: IBM PC
Turbo Pascal
Idaho

University of Idaho
College of Engineering
Department of Computer Science
Programs in Scientific Computing and Data Processing
Moscow, ID  83843

Degrees:  BS CS, MS CS

Contact:  Dr. John Dickinson
Chairman
(208) 885-6589
User ID:  JOHND@IDUI1
Network:  BITNET

Update:  October 1987

Courses:  

**CS Design I** (CS 480)
Codes:  U P R T 7
Textbooks:  *Software Engineering: A Practitioner’s Approach*
by Pressman, Roger S.
Tools:  HP workstations, IBM 4381
IBM PC, VAX 11/780

**CS Design II** (CS 481)
Codes:  U P R T 7
Textbooks:  *Software Engineering: A Practitioner’s Approach*
by Pressman, Roger S.
Tools:  HP workstations, IBM 4381
IBM PC, VAX 11/780

**Software Engineering** (CS 410/510)
Codes:  B P E Y 7
Textbooks:  *Software Engineering: A Practitioner’s Approach*
by Pressman, Roger S.
Tools:  HP workstations
IEW, TEAMWORK

**Software Metrics** (CS 511)
Codes:  G P R B 4
Textbooks:  *Controlling Software Projects*
by DeMarco, Tom
*Software Engineering Metrics and Models*
by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.
Tools:  Metric extraction tools
Cost estimation tools

**Software Quality Assurance and Testing** (CS 404/504)
Codes:  B P E Y 4
Textbooks:  *Software Quality Engineering*
by Deutsch and Willis
*Software Testing Techniques*
by Beizer
Tools:  Turbo Pascal
IBM PC

**Empirical Studies in Programming** (CS 404/504)
Codes:  B P E B
Additional Information:
CS Design I is an individual project with full documentation. CS Design II is a team project with full documentation.
Illinois

Bradley University
College of Liberal Arts and Sciences
Department of Computer Science
Peoria, IL  61625

Degrees:  BS, MS

Contact:  Prof. John Fendrich
Chairman
(309) 677-2460

Update:  April 1990

Courses:  Systems Analysis and Design (System Specification and Development) (CS 403)
Codes:  U P E O 8
Textbooks:  *Structured Analysis and System Specification*
by DeMarco, Tom
Tools:  Personal computers
Text processing system, Word processing system

Systems Analysis and Design (System Specification and Development) (CS 608)
Codes:  G P E O 8
Textbooks:  *Structured Analysis and System Specification*
by DeMarco, Tom
Tools:  Personal computers
Text processing system, Word processing system

Programming Methodology (CS 503)
Codes:  B P E O 6
Textbooks:  *Discipline of Programming*
by Dijkstra, Edsger Wybe
*The Science of Programming*
by Gries, David

Introduction to Software Engineering (CS 406)
Codes:  U P E Y 2

Structured Programming Using C (CS 221)
Codes:  U P E O 5
Textbooks:  *Efficient C*
by Plum, Thomas and Brodie, Jim
*Learning to Program in C*
by Plum, Thomas
*Reliable Data Structures in C*
by Plum, Thomas
Tools:  C
AT&T 3B series
VAX

Software Engineering I (CS 615)
Codes:  G P E Y 5
Textbooks:  *Software Engineering Metrics and Models*
by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.
Tools:  SPSS
Cyber

Software Engineering II (CS 616)
Additional Information:

- Systems Analysis and Design (System Specification and Development), CS 403 and CS 608, is offered at least twice a year. Programming Methodology and Structured Programming Using C are offered twice a year.
- Plans call for a course in Ada-based system design as well as a course in Ada-based software engineering. A course is planned in parallel processing and software engineering.

DePaul University
School of Liberal Arts and Sciences
Department of Computer Science and Information Systems
Chicago, IL 60604

Degrees: BS, MS

Contact: Dr. Helmut P. Epp
Department Chairman
(312) 341-8366

Update: May 1987

Courses:

- **Software Projects** (394)
  - Codes: U P R O 6
  - Tools: DEC
  - VAX 11/780
  - C

- **Software Engineering** (365)
  - Codes: U P R O 3
  - Textbooks: *Software Engineering*
    - by Sommerville, Ian
  - Tools: TeleSoft
  - VAX 11/780
  - Ada

- **Software Measurement and Quality** (366)
  - Codes: U P E Y 2
  - Textbooks: *Software Engineering Metrics and Models*
    - by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.

- **Software Measurement and Quality** (466)
  - Codes: G P E Y 2
  - Textbooks: *Software Engineering Metrics and Models*
    - by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.

- **Programming in Ada** (230)
  - Codes: U N E Y 3
  - Textbooks: *Software Engineering with Ada*
    - by Booch, Grady
  - Tools: TeleSoft
  - VAX 11/780
  - Ada

Additional Information:
Software Engineering is offered twice a year and Software Projects is offered three times a year.

Sangamon State University
School of Liberal Arts and Sciences
Department of Mathematical Systems
Springfield, IL 62708

Degrees: BA CS, MS M
Contact: Prof. Gary Lasby
         Convener
         (217) 786-6770
Update: None
Courses: Introduction to Software Engineering (MSY 478)
         Codes: U P E Y 1
Software Engineering (MSY 578)
         Codes: G P E Y 1

Additional Information:
Concepts of software engineering as embodied in good programming styles are stressed in all our courses.

Southern Illinois University at Edwardsville
School of Sciences
Department of Computer Science
Edwardsville, IL 62026

Degrees: BA, BS CS
Contact: Dr. J. R. Hattemer
         Chair
         (618) 692-2386
Update: September 1988
Courses: Software Design and Development (CS 424)
         Codes: B P E Y 5
         Textbooks: Software Engineering: Planning for Change by Lamb, David
Topics in Software Engineering (CS 524)
         Codes: G N E O 2
         Tools: Ada
         MicroVAX 2

Additional Information:
Topics in Software Engineering is offered occasionally.

University of Illinois at Chicago
College of Engineering
Department of Electrical Engineering and Computer Science
Program in Software Engineering
Chicago, IL 60680
Degrees: BS EE, BS CSE, MS EE, MS CS, PHD EE, PHD CS

Contact: Dr. Carl K. Chang
Assistant Professor
(312) 996-4860
User ID: ckchang@uicbert.eecs.uic.edu
Network: CSNET

Update: February 1989

Courses: Introduction to Software Engineering (EECS 274)
Codes: U P R O 8
Textbooks: Software Engineering
by Sommerville, Ian
Tools: UNIX BSD 4.2 C
VAX 11/750

Advanced Topics in Software Engineering (EECS 481)
Codes: G P E Y 5
Textbooks: Software Engineering: Analysis and Verification
by Lewis, T. G.
Tools: Sun 3 and Sun SPARC Workstations
UNIX BSD 4.2 C
Petri Net Tools

Software Engineering Environments (EECS 482)
Codes: G P E Y 5
Textbooks: Software Engineering Environments
by Charette, Robert
Tools: Sun 3 and Sun SPARC Workstations
UNIX BSD 4.2 C

Additional Information:
Introduction to Software Engineering is offered twice a year.
Dr. Carl Chang is currently in charge of the Software Engineering Laboratory for this department.

University of Illinois at Urbana-Champaign
Department of Computer Science
Urbana, IL  61801

Degrees: MS, MS TCS, MCS, PHD

Contact: Dr. Samuel N. Kamin
Associate Professor
(217) 333-6769
User ID: kamin@a.CS.UIUC.EDU

Update: January 1989

Courses: Operating Systems (CS 323)
Codes: B P E O 16
Textbooks: An Introduction to Operating Systems
by Deitel, H.M.
Tools: Path Pascal
IBM 9000

Software Engineering (CS 327)
Codes: B P E Y 6
Textbooks: Software Engineering: A Practitioner’s Approach
by Pressman, Roger S.
*Software Engineering Concepts*
by Fairley, Richard E.

**Tools:**
- C, Lisp, Pascal
- IBM PC/RT

**Additional Information:**
Operating Systems is offered twice a year.
Indiana

Ball State University  
College of Sciences and Humanities  
Department of Computer Science  
Program in Computer Science  
Muncie, IN  47306

Degrees:  
BS, MA, MS

Contact:  
Prof. W. F. Brown  
Professor  
(317) 285-8644

Update:  
May 1987

Courses:  

Software Engineering I (Systems Analysis) (497)  
Codes:  U P R O 11  
Textbooks:  Standards Manual for Software Engineering I  
by Brown, W.F. (ed.)  
Structured Analysis and System Specification  
by DeMarco, Tom  
Systems Analysis - Definition, Process, and Design  
by Semprevivo, Philip  
Tools:  C, COBOL, FORTRAN, Pascal  
Dept VAX 785 (UNIX)  
VAX cluster (three 785 and one 86500)

Software Engineering II (Design and Development) (498)  
Codes:  U P R O 5  
Textbooks:  Standards Manual for Software Engineering II  
by Brown, W.F., (ed.)  
Structured Analysis and System Specification  
by DeMarco, Tom  
Structured Design  
by Yourdon, Edward N. and Constantine, Larry L.  
Tools:  C, COBOL, FORTRAN, Pascal  
Dept VAX 785 (UNIX)  
VAX cluster (3 785, 1 86500)

Principles of Software Engineering (580)  
Codes:  G N R Y 4  
Textbooks:  Software Engineering Concepts  
by Fairley, Richard E.  
Tools:  Ada, C  
Dept VAX 785 (UNIX)  
VAX cluster

Additional Information:  
Software Engineering I (Systems Analysis) and Software Engineering II (Design and Development) are offered twice a year. We also offer a seminar about once a year or so on Ada. The book used is Software Engineering with Ada by Grady Booch. The software projects from CS 497-498 are actual projects selected by the students and each is approved by the professor. We are presently developing 2 courses which will be offered in parallel with CS 497-498. One will be in technical writing to be taught by the Department of English. The other will be in team-building and will be given by the Department of Psychological Science.
Indiana University
College of Arts and Sciences
Computer Science Department
Bloomington, IN 47405

Degrees: BA, BS, MS, PHD

Contact: Prof. Edward L. Robertson
Professor
(812) 335-4954
User ID: elr@iuvax.cs.indiana.edu

Update: September 1988

Courses: Information Systems I (C445)
Codes: B P O Y 7
Textbooks:
- An Introduction to Database Systems by Date, Chris J.
- Database System Concepts by Korth, Henry F. and Silberschatz, Abraham
- Software Engineering by Sommerville, Ian
- Tools and Techniques for Structured Systems Analysis and Design by Davis, William S.
Tools:
- VAX (ULTRIX)
- Xerox workstations
- C, FORTRAN, Ingres, Modula-2, dBase III plus, rBase 5000

Information Systems II (C446)
Codes: B P O Y 7
Textbooks:
- An Introduction to Database Systems by Date, Chris J.
- Database System Concepts by Korth, Henry F. and Silberschatz, Abraham
- Software Engineering by Sommerville, Ian
- Tools and Techniques for Structured Systems Analysis and Design by Davis, William S.
Tools:
- VAX (ULTRIX)
- Xerox workstations
- C, FORTRAN, Modula-2, dBase III plus, rBase 5000

Software Engineering Management (C607)
Codes: G P E Y 5
Textbooks:
- Advanced Course on Software Engineering by Bauer, Friedrich Ludwig
- Concise Notes on Software Engineering by DeMarco, Tom
- In Search of Excellence: Lessons From America’s Best-Run Companies by Peters, Thomas and Waterman, Robert
- Managing a Programming Project by Metzger, Philip W.
- Software Configuration Management by Babich, Wayne A.
- Software Engineering by Sommerville, Ian
- Software Engineering: Design, Reliability, and Management by Shooman, Martin L.
- Software Engineering Concepts
by Fairley, Richard E.
*Software Engineering Economics*
by Boehm, Barry W.
*Software Psychology: Human Factors in Computer and Information Systems*
by Shneiderman, Ben
*Software Reliability*
by Kopetz, H.
*The Mythical Man-Month: Essays on Software Engineering*
by Brooks, Frederick P.
*The Psychology of Computer Programming*
by Weinberg, G.M.
*Tools and Techniques for Structured Systems Analysis and Design*
by Davis, William S.

**Software Engineering Management** (C608)

**Codes:** G P E Y 5

**Textbooks:**
- *Advanced Course on Software Engineering*
  by Bauer, Friedrich Ludwig
- *Concise Notes on Software Engineering*
  by DeMarco, Tom
  by King, David
- *In Search of Excellence: Lessons From America’s Best-Run Companies*
  by Peters, Thomas and Waterman, Robert
- *Managing a Programming Project*
  by Metzger, Philip W.
- *Software Configuration Management*
  by Babich, Wayne A.
- *Software Engineering*
  by Sommerville, Ian
- *Software Engineering: Design, Reliability, and Management*
  by Shooman, Martin L.
- *Software Engineering Concepts*
  by Fairley, Richard E.
- *Software Engineering Economics*
  by Boehm, Barry W.
- *Software Psychology: Human Factors in Computer and Information Systems*
  by Shneiderman, Ben
- *Software Reliability*
  by Kopetz, H.
- *The Mythical Man-Month: Essays on Software Engineering*
  by Brooks, Frederick P.
- *The Psychology of Computer Programming*
  by Weinberg, G.M.
- *Tools and Techniques for Structured Systems Analysis and Design*
  by Davis, William S.

**Additional Information:**
Information Systems I and II are one of several choices for BA/BS.
A “Professional Practice” course may satisfy the BA/BS requirement with suitable individual project and paper.

**Purdue University (Entry 1)**
School of Science
Department of Computer Science
West Lafayette, IN 47907

**Degrees:** BS, MS, PHD

**Contact:** Dr. H. E. Dunsmore
Associate Professor  
(317) 494-1996  
User ID: bxd@purdue.edu

Update: None

Courses:  
**Software Engineering** (CS 404)  
Codes: U P E T 1  
Textbooks: *Software Engineering*  
by Sommerville, Ian  
Tools: DEC VAX 11/780 (UNIX OS)

**Software Metrics** (CS 510)  
Codes: G P E Y 1  
Textbooks: *Software Engineering Metrics and Models*  
by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.  
Tools: DEC VAX 11/780 (UNIX OS)

**Information Systems** (CS 442)  
Codes: U P E T 1  
by Davis, Gordon Bitter and Olson, Margrethe H.  
Tools: DEC VAX 11/780 (UNIX OS)

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Purdue University (Entry 2)  
School of Industrial Engineering  
West Lafayette, IN  47907

Degrees: BS, MS, PHD

Contact: Prof. F. F. Leimkuhler  
Head  
(317) 494-5444

Update: June 1987

Courses:  
**Cognitive Engineering of Interactive Software** (IE 559)  
Codes: G P E Y 4  
Textbooks: *Human-Computer Dialogue Design*  
by Ehrich, Roger W. and Williges, Robert C.  
Tools: IBM PC/AT  
FORTRAN

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Rose-Hulman Institute of Technology  
Department of Computer Science  
Terre Haute, IN  47803

Degrees: BS

Contact: Prof. Frank H. Young  
Chairman  
(812) 877-8401  
User ID: young@rosevc.rose-hulman.edu  
Network: BITNET

Update: February 1990
Courses: Software Engineering (CS 414)
Codes: U P R Y 5
Textbooks: Software Engineering, 2nd ed.
by Pressman, Roger S.
The Mythical Man-Month: Essays on Software Engineering
by Brooks, Frederick P.
Tools: Ada, Pascal, C
DEC VAX 6320 (VMS), Sun workstations

Software System Documentation (CS 405)
Codes: U P R Y 4

Senior Computer Science Project I & II (CS 497/CS 498)
Codes: U P R Y 2

University of Evansville
School of Engineering and Computer Science
Department of Computing Science
Evansville, IN 47714

Degrees: BA, BS, MS CSED, MS MIS

Contact: Dr. William Mitchell
Chairman
(812) 479-2650

Update: None

Courses: Software Engineering (CS 325)
Codes: U P R O 1

Software Engineering Project (CS 494/495/497)
Codes: U P R T 1

Software Engineering (CS 521)
Codes: G N B O 1
Textbooks: Software Engineering: Design, Reliability, and Management
by Shooman, Martin L.

Additional Information:
Software Engineering (undergraduate) and Software Engineering (graduate) are offered twice a year.
Iowa

Iowa State University
School of Sciences and Humanities
Department of Computer Science
Program in Computer Science
Ames, IA  50011

Degrees:  BS, MS, PHD

Contact:  Prof. Arthur E. Oldehoeft
         Chair
         (515) 254-4377

Update:  October 1988

Courses:  Software Engineering  (CS 411)
        Codes:   U N E O 6
        Textbooks:  Software Engineering: Design, Reliability, and Management
                     by Shooman, Martin L.
        Tools:   HP 9000 Model 350
                  Ada

Software Engineering  (CS 512)
Codes:   G N E Y 3

Additional Information:
Software Engineering is offered twice a year.

University of Iowa
College of Liberal Arts
Department of Computer Science
Iowa City, IA  52242

Degrees:  BA CS, BS CS, MS CS, PHD CS

Contact:  William F. Decker
         Asst. Research Scientist
         (319) 335-0747
         User ID: decker@cs.uiowa.edu
         Network: Internet

Update:  March 1990

Courses:  Software Engineering  (22c:115)
        Codes:   G P E T 6
        Textbooks:  Software Engineering: A Practitioner's Approach
                     by Pressman, Roger S.
        Tools:   Students' choice
                  Encore Multimax
                  IBM PC
                  Macintosh
Kansas

The Wichita State University
College of Liberal Arts and Sciences
Department of Computer Science
Wichita, KS  67208

Degrees:  BA, BS, MS, MCS

Contact:  Dr. Donald Gotterbarn
(316) 689-3156
User ID:  gotterbarn@twsuvax
Network:  BITNET

Update:  December 1989

Courses:  Introduction to Software Engineering (CS 580)
Codes:  B P E T 8
Textbooks:  Software Engineering, 3rd ed.
by Sommerville, I.
Tools:  Ada, Pascal
IBM 3031D
VAX 750

Ada and Software Engineering (CS 611)
Codes:  G P E Y 4
Textbooks:  Software Engineering with Ada
by Booch, Grady
Tools:  ALSYS
IBM at CLONE
Ada

Applications Systems Analysis (CS 684)
Codes:  G P E B 7

Software Testing and Reliability (CS 882)
Codes:  G P R Y 7
Tools:  Ada, Pascal
VAX

Requirements Specification and Design (CS 881)
Codes:  G P R B 1
Textbooks:  Selected readings
Tools:  VAX 8300

Software Project Management (CS 886)
Codes:  G P E B 2
Textbooks:  Managing Programming People
by Metzger, P.W.
Selected readings
The Mythical Man-Month: Essays on Software Engineering
by Brooks, Frederick P.

Topics in Software Engineering (CS 889)
Codes:  G P E Y 2
Textbooks:  Varies by topic
Tools:  Varies by topic

Additional Information:
Software Engineering MCS emphasis was established in 1988. Its requirements are: CS 580, 881, 882, internship, and practicum. The electives are: 6 hours such as CS 611, 684, 886, and special topics. Special topics offered in 1987-88 were:

Software Configuration Management and Software Project Management and the special topic in 1989-90 was Software Reuse.
Kentucky

Northern Kentucky University
Department of Mathematics and Computer Science
Highland Heights, KY 41076

Degrees: BS CS

Contact: Dr. Charles E. Frank
Coordinator
(606) 572-5320
User ID: frank@nkuvax
Network: BITNET

Update: February 1990

Courses: Software Engineering (CSC 440)
Codes: U P R T 5
Textbooks: Software Engineering: A Beginner's Guide
by Pressman, Roger S.
Tools: C, Modula-2, dBASE III+
Sun, PC

University of Louisville
J.B. Speed Scientific School
Information Science & Data Processing
Louisville, KY 40292

Degrees: BS IS

Contact: Dr. Ronald A. Mann
Professor and Chair
(502) 588-7520
User ID: RAMANN02@ULKYVX
Network: BITNET

Update: February 1990

Courses: Analysis & Design of Informations Systems (ISDP 510)
Codes: U P R Y 4
Textbooks: Structured Techniques
by Martin and McClure
Systems Analysis & Design, 2nd ed.
by Whitten and Bentley
Tools: Excelerator
IBM PS/2 Model 50

Special Topics: Programming in the Large (ISDP 500)
Codes: U P E B 2
Textbooks: Programming in Ada
by Barnes, John Gilbert Presslie
Software Components with Ada
by Booch, Grady
Software Engineering with Ada
by Booch, Grady
Tools: IBM PS/2 Model 50, VAX
Ada
Western Kentucky University
Ogden College of Science, Technology and Health
Department of Computer Science
Bowling Green, KY 42101

Degrees: BS, MS

Contact: Dr. Kenneth Modesitt
Professor and Department Head
(502) 745-4642

Update: October 1988

Courses: Structured Systems Analysis (CS 448)
Codes: B P E Y 5

Introduction to Computer Sciences: Ada (CS 245)
Codes: U P R Y 3
Textbooks: Ada: An Introduction
by Saib, S.
Tools: Ada
C, FORTRAN
VAX, PCs
Anatool, Excelerator (Index Technology)
CASE Tools: ProMod, DesignAid (Nastec), Analyst Toolkit
Louisiana State University at Shreveport  
College of Science  
Department of Computer Science  
Shreveport, LA  71115  

Degrees:  BS CS, MS SYST  
Contact:  Dr. Dave Foley  
Associate Professor of Computer Science  
(318) 797-5184  
Update:  February 1990  
Courses:  **Software Engineering Project** (CSC 480/481)  
Codes:  U P R T 5  
Textbooks:  *Software Engineering, 3rd ed.* by Sommerville, Ian  
Tools:  Turbo Pascal 5.5  
IBM PC compatibles  

Louisiana Tech University  
Department of Computer Science  
Ruston, LA  71272  

Degrees:  BS, MS  
Contact:  Prof. Margaret Schaar  
Assistant Professor  
(318) 257-2298  
Update:  September 1988  
Courses:  **Structured Design** (CS 203)  
Codes:  U P R O 4  
Textbooks:  *Software Engineering: The Production of Quality Software* by Pfleeger, Shari Lawrence  
Tools:  Sun, IBM PC  
Ada, C  
**Software Methodology** (CS 460)  
Codes:  U P E Y 5  
Textbooks:  *Software Engineering* by Sommerville, Ian  
Tools:  Sun, IBM PC  
Ada, C  
**System Design** (CS 540)  
Codes:  G P E Y 4  
Tools:  Sun, IBM PC  
Ada, C  

Additional Information:  
Structured Design is offered twice a year.
Northeast Louisiana University
Department of Computer Science
Monroe, LA 71209-0575

Degrees: BS CS

Contact: Dr. Alan Yauung
Assistant Professor
(318) 342-2186
User ID: CNYAUNG@NLU.EDU
Network: CSNET

Update: February 1990

Courses: Software Engineering (CS 460)
Codes: U P R Y 4
Textbooks: Software Engineering Concepts by Fairley, Richard E.
Tools: PC, VAX 11/780, Macintosh
Pascal

University of Southwestern Louisiana
The Center for Advanced Computer Studies
Computer Science and Engineering
Lafayette, LA 70504-4330

Degrees: BS CS, MS CS, MS CE, PhD CS, PhD CE

Contact: Dr. Steve Landry
Associate Director
(318) 231-6768
User ID: spl@cacs-usl.edu
Network: Internet

Update: February 1990

Courses: Introduction to Software Methodology (CMPS 453)
Codes: B P E Y 4
Textbooks: Elements of Programming Style by Keringhan & Plaugher
Software Engineering - A Practitioner's Approach by Pressman, Roger S.
Tools: Unix, make, rcs, shell-script, awk, profile

Software Methodology (CMPS 553)
Codes: G P E Y 5
Textbooks: Software Engineering by Sommerville, Ian
Software Engineering, 2nd Ed. by Pressman, Roger S.
The Practical Guide to Structured Systems Design by Meiler

Advanced Software Methodology (CMPS 653)
Codes: G P E D 5
Textbooks: Selected readings
University of Maryland
Division of Computer, Mathematical, and Physical Sciences
Department of Computer Science
College Park, MD 20742

Degrees: BS, MS, PHD

Contact: Dr. H. Dieter Rombach
Assistant Professor
(301) 454-8974
User ID: dieter@cs.umd.edu
Network: Internet

Update: September 1988

Courses: Software Design and Development (CMSC 435)
Codes: B P E T 6
Textbooks: Software Engineering: Planning for Change
by Lamb, David
Software Product Assurance: Techniques for Reducing Software Risk
by Bryan and Siegel
Tools: VAX/Unix
C, Pascal
Verdix Ada

Computer Science I (CMSC 112)
Codes: U N R T 6
Textbooks: PascAlgorithms
by Reingold and Reingold
Tools: VAX/Unix
VAX Pascal Compiler

Computer Science II (CMSC 113)
Codes: U P R T 6

Software Design and Development in Ada (CMSC 838)
Codes: G P E D 3
Textbooks: Programming in Ada
by Barnes, John Gilbert Presslie
Software Engineering with Ada
by Booch, Grady
Tools: Verdix Ada
VAX 8600

A Quantitative Approach to Software Management and Engineering (CMSC 735)
Codes: G P E Y 2
Textbooks: IEEE Tutorial on Models and Metrics for Software Management and Engineering
by Basili, Victor R.
Software Engineering Metrics and Models
by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.

Introduction to AI Programming (CMSC 421)
Codes: U N E Y 6
Textbooks: Artificial Intelligence Programming
by Charniak, Riesbeck, McDemott, and Meehan
Programming in Prolog
by Clocksin, W. F. and Mellish, C. S.
Tools: MicroVAXes
       LISP, Prolog

Additional Information:
The department offers other software engineering related courses, among them: Theory of Language Translation (CMSC 430), Theory of Programming Languages (CMSC 630), as well as a variety of software engineering related seminars.
Massachusetts

Boston University  
College of Engineering  
Department of Electrical, Computer, and Systems Engineering  
Programs in Systems Engineering, Computer Engineering, Electrical Engineering  
Boston, MA 02215

Degrees: MS EE, MS CE, MS SYSE, PHD E

Contact:  
Dr. John W. Brackett  
Coordinator, Soft. Eng. Graduate Program  
(617) 353-5898  
User ID: jwb@buenga.bu.edu

Update: October 1988

Courses:  
**Advanced Data Structures** (SC 504)  
Codes: B N B Y 1  
Textbooks: Selected readings  
Tools: DEC VAX Ada  
Encore  
VAX 785

**Software System Design** (SC 511)  
Codes: U P R Y 4  
Textbooks: *Software Engineering: A Practitioner’s Approach*  
by Pressman, Roger S.  
Tools: DEC VAX Ada  
Encore  
VAX 785  
Workstations and PC using analysis and design support tools

**Applications of Formal Methods** (SC 517)  
Codes: G N R Y 1  
Textbooks: *Software Specification Techniques*  
by Gehani, Narain and McGettrick, Andrew D.  
*The Science of Programming*  
by Gries, David

**Software Project Management** (SC 518)  
Codes: G P R Y 2  
by Parikh, Girish and Zvegintzov, Nicholas  
*Software Engineering Economics*  
by Boehm, Barry W.  
Tools: IBM PC on VAX 785

**The Computer as a System Component** (SC 714)  
Codes: G P R Y 1  
Textbooks: Selected readings  
Tools: DEC VAX Ada  
Encore  
VAX 785

**Software Engineering Project** (SC 912)  
Codes: G P R Y 4  
Tools: DEC VAX Ada  
Encore

CMU/SEI-90-TR-4  For an explanation of course codes, see page 19.  73
IBM PC
VAX 785
Workstations
Ada predominantly, but depends on project

Additional Information:
We also teach 2 courses, SC 465 and EK 215, that use the Ada programming language to teach software engineering concepts.
All new courses (SC 504, SC 517, SC 518) were effective as of January 1988.
The master’s program in software engineering is MS SYSE with a Software Engineering option. It will be renamed Software Systems Engineering effective 1989.
The PHD with research specialization in Software Engineering is offered, but the degree is officially called "PHD in Engineering."
In Software Project Management (SC 518), we use Super project on IBM PC, VAX Project Manager on VAX, and WICOMO (a cost estimation tool on the IBM PC).

Massachusetts Institute of Technology
School of Engineering
Department of Electrical Engineering and Computer Science
Program in Computer Science
Cambridge, MA 02139

Degrees: BS, MS, PHD

Contact: Prof. F. J. Corbato
Associate Head for Computer Science and Engineering
(617) 253-6001

Update: September 1988

Courses: Laboratory in Software Engineering (6.170)
Codes: U P R T 1
Textbooks: Abstraction and Specification in Program Development by Liskov, Barbara and Guttag, John
Tools: CLU
        DEC 20

Computer Language Engineering (6.035)
Codes: U P O Y 6
Textbooks: Compilers, Principles, Techniques, and Tools by Aho, Alfred V., Sethi, Ravi, and Ullman, Jeffrey D.
Tools: CLU
        DEC 20

Additional Information:
Students must take either Computer Language Engineering or an operating systems course.

Northeastern University (Entry 1)
College of Computer Science
Boston, MA 02115

Degrees: BS, BA, MS, PHD

Contact: Prof. Richard Rasala
Director of Undergraduate Studies
(617) 437-2462
User ID: rasala@corwin.ccs.northeastern.edu

Update: February 1990

Courses: **Software Design and Development** (COM 1205)
- Codes: U P R A 6
- Textbooks: *Software Engineering Concepts*
  by Fairley, Richard E.
- Tools: Think Pascal, Think C, or Sun C
  Macintosh SE and Sun workstations
  Hypercard
  Software Through Pictures

**Software Design and Development** (COM 3205)
- Codes: G N E Y 5
- Textbooks: *Abstraction and Specifications in Program Development*
  by Liskov, Barbara and Guttag, John
  *Software Engineering: A Practitioner's Approach, 2nd ed.*
  by Pressman, Roger S.
  *Software Engineering Concepts*
  by Fairley, Richard E.
- Tools: Sun workstations, PC, Macintosh SE
  C, Lisp, Pascal
  Software Through Pictures, Teamwork

**Requirements Analysis and Specification** (COM 3210)
- Codes: G P E Y
- Textbooks: *Abstraction and Specification in Program Development*
  by Liskov, Barbara and Guttag, John
- Tools: Sun workstations, PC, Macintosh SE
  C, Lisp, Pascal
  Software Through Pictures, Teamwork

**Software Testing, Verification and Validation** (COM 3220)
- Codes: G P E Y

Northeastern University (Entry 2)
College of Engineering
Department of Industrial Engineering and Information Sciences
Engineering Software Design
Boston, MA 02115

Degrees: MS CSE

Contact: Prof. Mieczyslaw M. Kokar
Program Coordinator
(617) 437-4849
User ID: Kokar@Northeastern.edu

Update: February 1990

Courses: **Engineering Project Management** (IIS 3217)
- Codes: G N B B 5
- Textbooks: *Project Management*
  by Meredith, J.R. and Mantel S.J.
- Tools: Project Workbench for the IBM PC

**Software Engineering I** (IIS 3637)
- Codes: G P R B 4
- Textbooks: *Software Engineering, 2nd ed.*
by Sommerville, Ian
Software Engineering: A Practitioner’s Approach, 2nd ed.
by Pressman, Roger S.

Tools:
Excelerator
IBM PC

Software Engineering II (IIS 3625)
Codes: G P R B 4
Textbooks: Analyzing Systems
by Kowal
Using Excelerator for Systems Analysis & Design
by Whitten and Bentley
Tools: Excelerator
IBM PC

Software Engineering Project (IIS 3651)
Codes: G P R Y 4

Additional Information:
The MS CSE degree has a specialization in Engineering Software Design.
IIS 3217 is offered in the Fall quarter on the Boston campus and in the
Spring quarter on the Burlington campus.

University of Massachusetts (Entry 1)
School of Engineering
Department of Electrical and Computer Engineering
Program in Electrical Engineering
Amherst, MA 01003

Degrees: BS CSE, BS EE, MS, PHD

Contact: Jan Cuny
(413) 548-9120

Update: October 1988

Courses: Design and Analysis of Computer Algorithms (ECE 672)
Codes: G P E D 1
Textbooks: The Design and Analysis of Computer Algorithms
by Aho, Alfred V., Hopcroft, John E. and Ullman, Jeffrey D.
Tools: Data General Eagle

Performance Evaluations (ECE 673)
Codes: G P E Y 1

University of Massachusetts (Entry 2)
Department of Computer and Information Sciences (COINS)
Amherst, MA 01003

Contact: Jan Cuny
(413) 548-9120

Update: November 1988

Courses: Software Engineering (COINS 520)
Codes: B P X Y 5
Textbooks: Selected readings
Software Engineering with Modula-2 and Ada
University of Massachusetts at Boston
Department of Mathematics and Computer Science
Boston, MA 02125

Degrees: BS, MS

Contact: Dr. Dan Simovici
Director of the Graduate Program
(617) 929-7966

Update: None

Courses:

Software Engineering I (650)
Codes: G P R Y 1
Tools: Unix on VAX 750

Software Engineering II (660)
Codes: G P R Y 1
Tools: Unix on VAX 750

Software Engineering Laboratory I (651)
Codes: G P R Y 1
Tools: Unix on VAX 750

Software Engineering Laboratory II (661)
Codes: G P R Y 1
Tools: Unix on VAX 750

Worcester Polytechnic Institute
Computer Science
Worcester, MA 01609

Degrees: PHD, MS, BS CS/EE, MS BS M

Contact: Dr. Robert E. Kinicki
Chairman
(508) 831-5357
User ID: Kinicki@wpi-cs.wpi.edu
Network: CSNET

Update: February 1990

Courses: Software Engineering (CS 4733)
Codes: U P O Y 5
Textbooks: *Software Engineering - A Practitioner’s Approach*
by Pressman, Roger S.
Tools: PC, Sun, Macintosh, Encore
Pascal, C
Teamwork

**Human Computer Interaction (CS 3041)**

Codes: U P O Y 5
Textbooks: *Designing the User Interface*
by Shneiderman, Ben
Tools: Pascal or C

**Database Design (CS 4431)**

Codes: U P E B 5
Textbooks: *Fundamentals of Database Systems*
by Elmasvi and Navathe
Tools: SQL, Entity Relational Model

**Software Engineering (CS 541)**

Codes: G P O Y 5
Textbooks: Selected readings
Tools: Mainframes and PCs
Pascal, C, or Ada
Teamwork

**Database Management Systems (CS 542)**

Codes: G P E Y 5
Textbooks: *Database and Knowledge Based Systems*
by Ullman
Tools: SQL, Entity Relational Model
Michigan

Andrews University
Department of Computer Information Science
Berrien Springs, MI 49104-0360

Degrees: MS SE

Contact: Dr. Daniel R. Bidwell
Graduate Director for Computer Science
(616) 471-3425
User ID: bidwell@Andrews.edu

Update: February 1990

Courses: Programming Project Management (INSY 645)
   Codes: G P R Y 4
   Textbooks:
   - Software Configuration Management: Coordination for Team Productivity
     by Babich, W.A.
   - The Mythical Man-Month: Essays on Software Engineering
     by Brooks, Frederick P.
   - The Program Development Process: The Programming Team PART II
     by Aron, J.D.

Software Engineering I (INSY 541)
   Codes: G P R Y 5
   Textbooks:
   - Software Engineering
     by Sommerville, Ian
   Tools: Demo II

Software Engineering II (INSY 542)
   Codes: G P R Y 5
   Textbooks:
   - Designing User Interfaces for Software
     by Dumae
   - Developing Effective User Documentation
     by Simpson and Casey
   - Writing Better Computer User Documentation
     by Brockmann, R. John

Computer Architecture (COSC 565)
   Codes: G P R Y 5
   Textbooks:
   - Computer Systems Architecture
     by Beck

Operating Systems I (COSC 461)
   Codes: B P R Y 5
   Textbooks:
   - Operating Systems Design and Implementation
     by Tanenbaum, A.S.
   Tools: Minix operating system

Systems Analysis I (INSY 481)
   Codes: B P R Y 5
   Textbooks:
   - Systems Analysis and Design Methods
     by Whitten, Bentley, and Ho

Systems Analysis II (INSY 482)
   Codes: B P R Y 5

Database Systems (INSY 472)
**Grand Valley State University**
Science and Mathematics
Department of Mathematics and Computer Science
MS in Computer Information Systems (emphasis in software engineering)
Allendale, MI  49401

**Degrees:**  MS CIS

**Contact:**  Prof. Joseph J. Adamski
Associate Professor
(616) 895-2046
User ID:  21874jja@msu.bitnet
Network:  BITNET

**Update:**  February 1990

**Courses:**  Systems Analysis (650)
**Codes:**  G N R Y 2

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**Michigan State University**
College of Engineering
Computer Science Department
Program in Computer Science
East Lansing, MI  48824-1027

**Degrees:**  BS, MS, PHD

**Contact:**  Prof. John J. Forsyth
Assoc. Professor and Assoc. Chairperson
(317) 355-1646

**Update:**  October 1987

**Courses:**  Design of Language Processors I (CPS 451)
**Codes:**  U P R Y 6

**Textbooks:**  Software Engineering Concepts by Fairley, Richard E.
Theory and Practice of Compiler Writing by Tremblay and Sorenson

**Tools:**  Sun 3 file server
Workstations on Ethernet
C, UNIX

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Design of Language Processors II (CPS 452)
**Codes:**  U P R Y 6

**Textbooks:**  Software Engineering Concepts
Design of Language Processors III (CPS 453)
Codes: U P R Y 6
Textbooks: Software Engineering Concepts
by Fairley, Richard E.
Theory and Practice of Compiler Writing
by Tremblay and Sorenson
Tools: Sun 3 file server
Workstations on Ethernet
C, UNIX

Design of Database Systems III (CPS 484)
Codes: U P E Y 2
Textbooks: Database Systems and Concepts
by Silbersatz and Korth
Software Engineering Concepts
by Fairley, Richard E.
Tools: C, UNIX, LEX

Design of Database Systems I (CPS 483)
Codes: U P E Y 2
Textbooks: Files & Databases
by Smith and Bernes
Software Engineering Concepts
by Fairley, Richard E.
Tools: C, UNIX, LEX

Systems Software Development (CPS 316)
Codes: U P R T 2
Textbooks: Software Engineering Concepts
by Fairley, Richard E.
Systems Software
by Beck
Tools: C, UNIX
Sun computers

Additional Information:
A full academic year sequence is offered every year for Design of Language Processors I, II, and III.

Michigan Technological University
College of Sciences and Arts
Department of Computer Science
Houghton, MI  49931

Degrees: BS CS, MS CS

Contact: Dr. Linda M. Ott
Associate Professor
(906) 487-2187
User ID: linda@mtu.edu

Update: October 1988
Courses: **Software Engineering (CS550)**  
Codes: G P R Y 8  
Textbooks: *Software Engineering: A Practitioner’s Approach, 2nd ed.*  
by Pressman, Roger S.  
Tools:  
Sequent Balance 8000 running Dynix

**Software Engineering (CS465)**  
Codes: U P E Y 3  
Textbooks: *Software Engineering, 2nd ed.*  
by Sommerville, Ian  
Tools:  
CC  
Sequent Balance 8000 running Dynix  
C

**Systems Software Project (CS341)**  
Codes: U P R T 1  
Textbooks: *Software Engineering: A Beginner’s Guide*  
by Pressman, Roger S.  
Tools:  
Pascal  
Sequent Balance 8000 running Dynix

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**University of Michigan-Dearborn**  
School of Engineering  
Department of Industrial and Systems Engineering  
Dearborn, MI  48128

**Degrees:**  
BSE ISE, MSE ISE

**Contact:**  
Dr. S. K. Kachhal  
Chairman  
(313) 593-5272

**Update:**  
None

**Courses:** **Software Engineering (I&SE 553)**  
Codes: G P E Y 1  
Textbooks:  
*Controlling Software Projects: Management Measurement and Estimation*  
by DeMarco, Tom  
*Software Design and Development*  
by Gilbert, Philip  
Tools:  
Michigan Terminal System (Amdahl)

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**Wayne State University**  
College of Engineering  
Department of Electrical and Computer Engineering  
Detroit, MI  48202

**Degrees:**  
BS, MS, PHD

**Contact:**  
Prof. Jerome Meisel  
Acting Chair  
(313) 577-3920

**Update:**  
None

**Courses:** **Engineering Software Design (ECE 660)**  
Codes: G P X Y 1  
Textbooks: *Software Engineering: A Practitioner’s Approach*  
by Pressman, Roger S.
Tools: Amdhal 470 V8
IBM 3081
IBM 4381
MTS (Michigan Terminal System)

Additional Information:
The course ECE 660 has been taught both at campus and at the Ford premises under Ford/WSU Master’s program in Electronics and Computer Control System. The students have been using PSL/PSA from ISDOS.

Western Michigan University
College of Arts and Sciences
Department of Computer Science
Kalamazoo, MI 49008-5021

Degrees: BS CS, MS CS

Contact: Dr. Mark Kerstetter
Associate Professor
(616) 387-5658
User ID: kerstetter@gw.wmich.edu

Update: October 1988

Courses: Software Systems Development (544)
Codes: B P B O 8
Textbooks: Software Engineering: A Practitioner’s Approach, 2nd ed.
by Pressman, Roger S.
The Mythical Man-Month: Essays on Software Engineering
by Brooks, Frederick P.
Tools: C, COBOL, FORTRAN, Pascal
IBM-PC/XT/AT
IBM PS/2
Macintosh
VAX/UNIX
VAX/VMS
dBase

Additional Information:
Software Systems Development uses real projects and is offered 3 times per year. Therefore, student teams work on a variety of machines and with a variety of languages and compilers. Each team of 4 to 5 students typically works on a different project. Documentation is required including: abstract, planning document, requirements document, preliminary design document, user’s manual, and maintenance manual. Each team must make a one-hour presentation to the instructor, client, classmates, and invited guests during "presentation day,” which takes place at the end of the semester.
Minnesota

College of St. Thomas
Computer Science
Master of Software Design and Development
St. Paul, MN 55105

Degrees:  MSDD, MS

Contact:  Dr. Bernice Folz
Professor and Dean
(612) 647-5367

Update:  February 1990

Courses:  Technical Communications (CS 500)
Codes:    G N R T 3
Textbooks: Handbook of Technical Writing
          by Brusaw, Alred, and Olin
          How to Write a Usable User Manual
          by Weiss
          Manual for Technical Communications
          Readings for Technical Writers
          by Journet and Kling

Software Engineering Methodologies (CS 510)
Codes:    G N R T 3
Textbooks: Algorithms + Data Structures = Programs
          by Wirth, N.
          Classics in Software Engineering
          by Yourdan
          Data Structure and Algorithms
          by Aho, Hopcroft, and Ullman
          Software Engineering Concepts
          by Fairley, Richard E.
          Software Engineering in Ada
          by Cummings, R.

Software Productivity Tools (CS 520)
Codes:    G P R T 3
Textbooks: A Guide to INGRES
          by Date, Chris
          Analysis and Design of Information Systems
          by Senn
          CASE - Using Software Development Tools
          by Fisher, Alan S.
          Fourth Generation Languages, Vol. I
          by Martin
          INGRES Manuals from Relational Technology

          Using Exceletterator for Systems Analysis and Design
          by Whitten and Bentley

Tools:    IBM - AT, PS/2
          DEC VAX/VMS
          Excelerator, INGRES + 4GL Components, Analyst Helper,
          ORACLE, PSL/PSA, HOS.UseIt

DBMS and Design (CS 530)
Codes:    G P R T 3
Textbooks: *Database Systems Concepts*
by Karth and Silberschatz
Tools: DEC VAX/VMS, IBM PS/2, ORACLE, INGRES, Informix

**Systems Analysis and Design I** (CS 540)
Codes: G P R T 3
Textbooks: *Modern Structured Analysis*
by Yourdon, Edward N.
*Systems Analysis and Design*
by Kendall and Kendall
Tools: Macintosh - ICONIX
IBM - AT, PS/2 - Excelerator

**Data Modeling and Information Analysis** (CS 541)
Codes: G N E Y 1
Textbooks: ACM TODS, Vol. 1, No. 1, 1976
*Information Analysis Concepts and Methodology*
by Control Data Corp.
*The Entity-Relationship Model - Toward a Unified View of Data*
by Chen, Peter
Tools: IBM - AT
PRECISE (CDC)

**Software Project Management** (CS 600)
Codes: G P R T 3
Textbooks: *Software Engineering Project Management - Tutorial*
by Thayer, R. H.
Tools: IBM AT
Timeline, Primevera

**Operating Systems Design (Unix and C)** (CS 610)
Codes: G P E Y 3
Textbooks: *Operating Systems Concepts*
by Peterson & Silberschatz
*Operating Systems Design and Implementation*
by Tannenbaum
Tools: DEC VAX/VMS
C Language

**Real-Time Systems and Applications** (CS 612)
Codes: G P E Y 1
Textbooks: *Introduction to Real-Time*
by Allworth and Zobel
Tools: Macintosh - ICONIX

**Graphics** (CS 620)
Codes: G P E Y 3
Textbooks: *Computer Graphics*
by Hearn and Baker
Tools: IBM - PC, VAX/VMS
Turbo Pascal, GK2000, Picsure

**Telecommunications** (CS 625)
Codes: G P E Y 3
Textbooks: *Computer Networks*
by Tannenbaum

**Artificial Intelligence and Knowledge Based Systems** (CS 635)
Codes: G P E T 3
Textbooks: *Artificial Intelligence and the Design of Expert Systems*
by Lugert & Stubblefield
Tools: DEC VAX/VMS, IBM AT, Macintosh, LISP, Prolog, Allegro
Knowledge Based Systems II (CS 636)
Codes: G P E Y 3
Textbooks: A Guide to Expert Systems
by Waterman
Tools: IBM PC
PC+

St. Cloud State University
College of Science and Technology
Department of Computer Science
Computer Science
St. Cloud, MN 56301-4498

Degrees: BS CS

Contact: Dr. Annette D. Schoenberger
Associate Professor
(612) 255-4966
User ID: Annette%TIGGER@MSUS1
Network: BITNET

Update: February 1990

Courses: Software Engineering I (CSCI 420-520)
Codes: B P E B 1
Textbooks: Selected readings
Software Engineering, Planning for Change
by Lamb, David
Software Engineering with Ada (2nd Edition)
by Booch, Grady
Tools: Ada, Pascal
Design Notations; Jackson, Harel

Software Engineering II (CSCI 421-521)
Codes: B P E B 1
Textbooks: Selected readings
Software Engineering with Ada (2nd Edition)
by Booch, Grady

Software Engineering III (CSCI 422-522)
Codes: B P O B 1
Textbooks: Selected readings
Software Engineering, Planning for Change
by Lamb, David
Software Engineering with Ada (2nd Edition)
by Booch, Grady
Tools: Ada, Pascal
Design Notation: Jackson, Harel

Software Engineering Project (CSCI 430-530, 431-531, 431-532)
Codes: B P B B 1
Textbooks: Language reference manuals
Tools: Ada, Pascal

University of Minnesota
Institute of Technology
Department of Computer Science
Program in Computer Science
Degrees: BS, MS, PHD

Contact: Dr. David Fox
Head, Computer Science
(612) 625-0726

Update: June 1987

Courses: Software Engineering (I) (Csci 5180)
Codes: B P E Y 6
Textbooks: Abstraction and Specification in Program Development
by Liskov, Barbara and Guttag, John
Tools: Ada
Sun
MSG

Software Engineering (II) (Csci 5181)
Codes: B P E Y 6
Textbooks: Software Engineering with Ada
by Booch, Grady
Tools: Ada
Sun
MSG

Software Engineering (III) (Csci 5199)
Codes: B P E Y 3
Textbooks: Software Engineering with Ada
by Booch, Grady
Software Testing and Evaluation
by DeMillo, R.A. et al.
Software Validation: Inspection - Testing - Verification - Alternatives
by Hausen, H.L.
The Art of Software Testing
by Myers, Glenford J.
Tools: Ada
Sun
MSG

Software Requirement, Design and Maintenance (Csci 5199/8199)
Codes: B P E B 3
Textbooks: Handbook of Software Engineering
by Vick, Charles R. and Ramamoorthy, C.V.
Software Design Strategies
by Bergland, Glenn D. and Gordon, Ronald D.

Software Verification and Validation, Metrics (Csci 5199/8199)
Codes: B P E B 3
Textbooks: IEEE Tutorial: Software Testing and Validation Techniques
by Miller, Edward and Howden, William E.
Software Engineering Metrics and Models
by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.
Software Testing and Evaluation
by DeMillo, R.A. et al.
Software Validation: Inspection - Testing - Verification - Alternatives
by Hausen, H.L.
The Art of Software Testing
by Myers, Glenford J.

Software Engineering with Ada (Csci 5199/8199)
Codes: B P E Y 3
Textbooks: Software Engineering with Ada
by Booch, Grady
Tools: Ada
Sun

Software Specification (Csci 5199/8199)
Codes: B P E Y 3
Textbooks: Software Specification Techniques
by Gehani, Narain and McGettrick, Andrew D.

Additional Information:
We also have weekly seminars on various aspects of software engineering.
Missouri

Washington University
Sever Institute of Technology
Department of Computer Science
St. Louis, MO  63130

Degrees:  BS, MS, SCD

Contact:  Dr. Gruia Catalin Roman
          Associate Professor
          (314) 889-6190
          User ID:  gcr@wucs2.wustl.edu

Update:  February 1990

Courses:  Distributed System Design (CS 576S)
          Codes:  G P E B 2

Modular Programming (CS 545S)
Codes:  G P E B 5

Programming Systems and Language (CS 455)
Codes:  B P R O 11
Textbooks:  Coordinated Computing: Tools and Techniques for Distributed Software
            by Filman, Robert E. and Friedman, Daniel P.
            Programming Languages: Design and Implementation
            by Pratt, Terrence W.
Tools:  DEC Ada, Franz Lisp, Prolog
        MicroVAX II

Research Seminar on Distributed System Design (CS 673.1 - CS 673.6)
Codes:  G N E T 2

Software Engineering Workshop (CS 456)
Codes:  B P R O 11
Textbooks:  Programming in Ada
            by Barnes, John Gilbert Presslie
            Programming in Modula-2
            by Wirth, Niklaus
Tools:  DEC Ada, DECSRC Modula-2+
        Micro VAX II
        VAX 11/750
        Modula-2, Smalltalk

Additional Information:
Programming Systems and Languages and Software Engineering Workshop are
offered twice yearly.
Montana

University of Montana
College of Arts and Sciences
Department of Computer Science
Missoula, MT  59812-1008

Degrees:  BS CS, MS CS

Contact:  Prof. Alden Wright
Professor of Computer Science
(406) 243-4790
User ID:  apple.com!umt!cs_ahw
Network:  Usenet

Update:  February 1990

Courses:  Implementation (CS 543)
Codes:  G P R Y 4
Textbooks:  Selected readings

Requirements and Specifications (CS 541)
Codes:  G N R Y 4
Textbooks:  Modern Structured Analysis
by Yourdon, Edward N.
Tools:  Excelerator
IBM AT

Design (CS 542)
Codes:  G P R Y 4
Textbooks:  Structural Design
by Yourdon, Edward N. and Constantine, Larry L.

Formal Semantics and Specification (CS 539)
Codes:  G P O B 2
Textbooks:  Program Construction & Verification
by Backhouse, R. C.
The Science of Programming
by Gries, David

Advanced Programming Languages - Object Oriented Design and Programming (CS 535)
Codes:  G P E B 2
Textbooks:  Object-Oriented Software Construction
by Meyer
Tools:  Eiffel language
VAX 785 running ULTRIX
New Hampshire

Dartmouth College
Department of Mathematics and Computer Science
Hanover, NH  03755

Degrees:  BA, MS, PHD

Contact:  Samuel W. Bent
Associate Professor
(603) 646-2760
User ID:  sam.bent@dartmouth.edu

Update:  October 1988

Courses:  Software Design and Implementation (CS 23)
Codes:    U P R O 2
Textbooks: Programming Pearls
          by Bentley, Jon Louis
          Software Engineering Concepts
          by Fairley, Richard E.
Tools:    C, Lightspeed Pascal
          CONVEX
          Macintosh
          VAX 11/785
          AWK, LEX

Additional Information:
Software Design and Implementation is offered 2 terms a year. We previously
had one course with data structures and a large programming project. We have
subdivided it. Software Design and Implementation will emphasize software
tools.
New Jersey

Fairleigh Dickinson University
College of Science and Engineering
Department of Mathematics and Computer Science
Teaneck, NJ 01666

Degrees: BS, BSE, MS

Contact: Dr. Gertrude Levine
Associate Professor
(201) 692-2020

Update: February 1990

Courses: Advanced Programming Language Concepts Using Ada (CS 439)
Codes: U P E D 1
Textbooks: Software Engineering Concepts with Ada
by Booch, Grady
Tools: Ada, DEC debugger, LSE
DEC workstations

Special Topics in Ada (CS 847)
Codes: G P R Y 1
Textbooks: Programming in Ada
by Barnes, John Gilbert Presslie
Tools: Ada, DEC debugger, LSE
DEC workstations

Monmouth College
Department of Mathematics/Computer Science
West Long Branch, NJ 07764

Degrees: MS SE

Contact: Prof. Ed McCrohan
Director

Update: None

Courses: Network Design and Protocols I (SE 510)
Codes: G X R X 1

Network Design and Protocols II (SE 511)
Codes: G X R X 1

Operating System Implementation (SE 515)
Codes: G X R X 1

Software Engineering I (SE 516)
Codes: G X R X 1

Software Engineering II (SE 517)
Codes: G X R X 1

System Project Implementation (SE 525)
Codes: G X R X 1
Software Project Management (Video Course)
Codes: X X X X

Montclair State College
School of Mathematics and Computer Science
Department of Mathematics and Computer Science
Upper Montclair, NJ 07043

Degrees: BS, MA CS

Contact: Prof. K. Wolff
Chairperson
(201) 893-5132

Update: None

Courses: Software Engineering and Reliability (Y0701 594)
Codes: G P E B 1
Textbooks: Ethnotechnical Review Handbook
by Freedman, Daniel P.
Software Engineering: A Practitioner's Approach
by Pressman, Roger S.
Software Engineering: Design, Reliability and Management
by Shooman, Martin L.
Software Reliability: Principles and Practices
by Myers, Glenford J.

Programming Languages (Y0701 484)
Codes: U P E B 5
Textbooks: Programming Languages: Design and Implementation
by Pratt, Terrence W.
Tools: Ada

Stockton State College
Professional Studies
Information and Computer Sciences
Pomona, NJ 08240

Degrees: BA O, BS CS, BS IS

Contact: Murray R. Kirch
Professor of Comp. Sci. & Mathematics
(609) 652-4353
User ID: kirch@pilot.njin.net
Network: Internet

Update: February 1990

Courses: Software Engineering with Ada (INFO 4130)
Codes: U P E Y 1
Textbooks: Ada as a Second Language
by Cohen, Norman H.
Software Engineering with Ada
by Booch, Grady
Tools: Briefcase (to be replaced with Excelerator)
VAX/VMS Ada compiler system
VAX 6310
LARCH
New Mexico

New Mexico Institute of Mining and Technology
Department of Computer Science
Program in Computer Science
Socorro, NM 87801

Degrees: BS, MS, PHD

Contact: Prof. Andrew H. Sung
Chairman
(505) 835-5949
User ID: sung@nmtvax.nmt.edu

Update: January 1989

Courses: Software Construction (CS328)
Codes: U P E O 6
Textbooks: The Mythical Man-Month: Essays on Software Engineering
by Brooks, Frederick P.
Tools: C
VAX 750 under UNIX

Design and Analysis of Software Systems (CS528)
Codes: G P E D 3
Tools: C
VAX 750 under UNIX

Additional Information:
Software Construction is offered every 1 or 1 1/2 years.

New Mexico State University
School of Arts and Sciences
Department of Computer Science
Program in Computer Science
Las Cruces, NM 88003

Degrees: BS, MS, PHD

Contact: Prof. Juris Reinfelds
Department Head
(505) 646-3723

Update: October 1988

Courses: Software Development (CS 371)
Codes: U P R T 5
Textbooks: Ada: An Advanced Introduction
by Gehani, Narain
Software Engineering: A Practitioner's Approach
by Pressman, Roger S.
Tools: Ada
IBM PC
Sun
Modula-2
University of New Mexico - Los Alamos
Department of Computer Science
Los Alamos, NM  87544

Degrees:  AAS CS

Contact:  Ms. Angela Coop
Associate Director for Instruction
(505) 662-5919

Update:  July 1987

Courses:  Introduction to Software Engineering (CS 260)
Codes:     U P R Y 2
Textbooks: Software Engineering
by Sommerville, Ian
Tools:     C, Unix BSD Pascal
           VAX 11/750
           Ada

Additional Information:
Introduction to Software Engineering is required with Fundamentals of Data
Structures (CS 363) as an alternative.
New York

City University of New York
The Graduate School and University Center
Ph.D. Program in Computer Science
New York, NY  10036-8099

Degrees:  PHD
Contact:  Prof. Frank S. Beckman
         Executive Officer
         (212) 790-4594
Update:  June 1988
Courses:  Topics in Software Systems and Software Engineering (C.Sc. U813)
          Codes:  X X X X 1

Clarkson University
School of Science
Department of Mathematics and Computer Science
Potsdam, NY  13676

Degrees:  BS, MS, PHD
Contact:  Dr. A. S. Fokas
         Chairman
         (315) 268-2395
Update:  February 1990
Courses:  Software Design and Development (MA 450)
          Codes:  U N E Y 6
          Textbooks:  Software Engineering Concepts
                       by Fairley, Richard E.
          Tools:  Gould
                   Z-100 MS DOS
                   Zenith 200

          Software Tools (MA 250)
          Codes:  U P R Y 2
          Tools:  Turbo C
                  Zenith 200

Columbia University
School of Engineering and Applied Sciences
Department of Computer Science
New York, NY  10027

Degrees:  BA, BS, MS, PHD
Contact:  Dr. Gail E. Kaiser
         Associate Professor
         (212) 854-3856
         User ID:  kaiser@cs.columbia.edu
Network: Internet

Update: None

Courses:

- **Software Design Laboratory** (W3152)
  Codes: U P R T 5
  Tools: Standard UNIX tools available on SunOS

- **Software Engineering** (W4156)
  Codes: B P B Y 5
  Textbooks: *Software Engineering, 3rd ed.* by Sommerville, Ian

- **Programming Environments and Software Tools** (E6123)
  Codes: G P E B 2

- **Special Projects in Computer Science** (W3998, E6901, others)
  Codes: B P E D 5
  Tools: Tops 20
  UNIX

Additional Information:
Various projects in software engineering and other areas can be negotiated between 1 or more students and a faculty member. Often the projects involve a small piece of a faculty member’s research and may be supervised by a Ph.D. student or research staff member.

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**Cornell University**
School of Engineering
Department of Computer Science
Ithaca, NY 14853

Degrees: BS, ME, PHD

Contact: Prof. Dexter Kozen
Graduate Fields Representative for C.S.
(607) 255-8593

Update: October 1987

Courses:

- **Intro. Database Management Systems** (432)
  Codes: B P E Y 6
  Textbooks: *An Introduction to Database Systems*
  by Date, C.J.
  *The C Programming Language*
  by Kernighan, Brian and Ritchie, Dennis
  Tools: CC
  VAX
  C, Pascal

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**Iona College**
School of Arts and Science
Department of Computer and Information Sciences
Program in Computer Science
New Rochelle, NY 10801

Degrees: BA, BS, MS
Courses: **Software Engineering** (CIS 390)
Codes: U P E Y 4
Textbooks: *Software Engineering: A Practitioner’s Approach*
        by Pressman, Roger S.
Tools: PL/I Optimizing, Turbo Pascal, VS Pascal
       PC & IBM mainframe
       others

**Introduction to Software Engineering** (CIS 640)
Codes: G P E Y 1
Tools: IBM mainframe

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**Polytechnic University, Brooklyn Campus**

School of Engineering
Department of Electrical Engineering and Computer Science
Computer Science Division
Brooklyn, NY 11201

Degrees: BS CS, BS EE, MS CS, MS IS, PHD CS

Contact: Prof. Martin L. Shooman
Professor

Update: None

Courses: **Software Design and Engineering** (CS306)
Codes: U P E Y 1

**Software Engineering I** (CS606)
Codes: G P B O 1
Textbooks: *Software Engineering: Design, Reliability, and Management*
          by Shooman, Martin L.
Tools: Software Engineering Laboratory

**Software Engineering II** (CS607)
Codes: G P E B 1
Textbooks: *Software Engineering: Design, Reliability, and Management*
          by Shooman, Martin L.
Tools: Software Engineering Laboratory

**Additional Information:**
Formerly Polytechnic Institute of New York, Brooklyn Campus.
The B.S. in E.E. is offered with Computer Engineering Option.
Software Engineering I is offered twice a year.
Polytechnic University, Farmingdale Campus
   School of Engineering
   Department of Electrical Engineering and Computer Science
   Computer Science Division
   Farmingdale, NY 11735

Degrees: BS CS, BS EE, MS CS, MS IS, PHD CS
Contact: Prof. Martin L. Shooman
          Professor
Update: None

Courses: **Software Engineering I** (CS606)
Codes:   G P B O 1
Textbooks: *Software Engineering: Design, Reliability, and Management*
           by Shooman, Martin L.
Tools:   Software Engineering Laboratory

**Software Engineering II** (CS607)
Codes:   G P E B 1
Textbooks: *Software Engineering: Design, Reliability, and Management*
           by Shooman, Martin L.
Tools:   Software Engineering Laboratory

Additional Information:
Formerly Polytechnic Institute of New York, Farmingdale Campus.
The B.S. in E.E. is offered with Computer Engineering Option.
Software Engineering I is offered twice a year.

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Polytechnic University, Westchester Campus
   School of Engineering
   Department of Electrical Engineering and Computer Science
   Computer Science Division
   White Plains, NY 10605

Degrees: BS CS, BS EE, MS CS, MS IS, PHD CS
Contact: Prof. Martin L. Shooman
          Professor
Update: None

Courses: **Software Engineering I** (CS606)
Codes:   G P B Y 1
Textbooks: *Software Engineering: Design, Reliability, and Management*
           by Shooman, Martin L.
Tools:   Software Engineering Laboratory

Additional Information:
Formerly Polytechnic Institute of New York, Westchester Campus.
The B.S. in E.E. is offered with Computer Engineering Option.

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Rensselaer Polytechnic Institute (Entry 1)
   School of Science
   Department of Computer Science
Troy, NY 12180

Degrees: BS, MS, PHD

Contact: Prof. Arthur Sanderson

Update: September 1988

Courses: Master’s Project (66.698)
  Codes: G N R O 16

Software Design and Development (66.444)
  Codes: U P O Y 2
  Textbooks: Software Engineering: Planning for Change
             by Lamb, David
             Software Engineering Guidelines
             by Priest et al.
             Writing Better Computer Documentation
             by Brockmann, R. John
  Tools: MacIntosh
         PC
         Sun

Additional Information:
Design and Documentation and Software Leadership are proposed as part of a revised curriculum. Master’s Project is a substantial software design and implementation project done under close faculty supervision. It has a schedule that is individually arranged.

Rensselaer Polytechnic Institute (Entry 2)
School of Engineering
Department of Electrical, Computer and Systems Engineering
Troy, NY 12180

Degrees: BS, ME, MS, PHD EE, PHD CSE, DENG

Contact: Prof. Joseph E. Flaherty
         Chairman
         (518) 276-6348

Update: None

Courses: Software Engineering I (35.677)
  Codes: G P E Y 1
  Textbooks: Classics in Software Engineering
             by Yourdon, Edward N.
             Software Engineering: A Practitioner’s Approach
             by Pressman, Roger S.

Software Engineering II (35.678)
  Codes: G P E Y 1
  Textbooks: Classics in Software Engineering
             by Yourdon, Edward N.
             Software Engineering: A Practitioner’s Approach
             by Pressman, Roger S.

Rochester Institute of Technology
School of Computer Science
Graduate Department of Computer Science
Rochester, NY 14623

Degrees: BS CS, MS CS

Contact: Dr. Peter Anderson
Chairperson
(716) 475-2529

Update: None

Courses: 

- **Software Engineering I** (ICSS-801)
  Codes: G N E T 1
  Textbooks: *Software Engineering: Design, Reliability, and Management*
  by Shooman, Martin L.

- **Principles of Distributed Systems** (ICSA-725)
  Codes: G X R X 1

- **Principles of Data Management** (ICSA-720)
  Codes: G X R X 1

- **Software Engineering Concepts** (ICSA-820)
  Codes: G X R X 1

- **Analysis & Design Techniques** (ICSA-821)
  Codes: G X R X

- **Program Design and Implementation** (ICSA-823)
  Codes: G X R X

- **Program Testing and Reliability** (ICSA-835)
  Codes: G X R X

- **Software Project Management** (ICSA-830)
  Codes: G X R X 1

- **Software Project Laboratory** (ICSA-894)
  Codes: G X R X

- **Software Engineering Project** (ICSA-895)
  Codes: G X R X

Additional Information:
An M.S. in Software Development and Management was first offered in Fall, 1987.

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State University of New York College at Brockport
School of Letters and Sciences
Department of Computer Science
Undergraduate Computer Science
Brockport, NY 14420

Degrees: BS CS

Contact: Prof. Linda M. Northrop
Assistant Professor
(716) 395-2323
User ID: NORTHROP@BROCK1P
Network: BITNET
Update: February 1990

Courses: **Software Systems Development** (CSC 427)
Codes: U P R Y 4
Textbooks: *Software Engineering Concepts*
by Fairley, Richard E.
*The Mythical Man-Month: Essays on Software Engineering*
by Brooks, Frederick P.
Tools: Pascal, Ada, Information
PRIME 9955
IBM PC

State University of New York at Binghamton
The Thomas J. Watson School of Engineering, Applied Science and Technology
Department of Computer Science
Binghamton, NY 13901

Degrees: BS CS, MS CS, PHD AT/CS

Contact: Dr. Thomas F. Piatkowski
Professor
(607) 777-4802
User ID: tfp@bingvma.bitnet
Network: BITNET

Update: February 1990

Courses: **Software Engineering Analysis** (CS-546)
Codes: G P E D 2
Textbooks: *Software Engineering: Design, Reliability, and Management*
by Shooman, Martin L.
Tools: ALSYS Ada, DEC Ada
IBM PC/AT
VAX 780

**Software Engineering I** (CS-545)
Codes: G P E T 4
Textbooks: *Software Engineering*
by Sommerville, Ian
*Software Engineering with Ada*
by Booch, Grady
Tools: DEC Ada
VAX 6340

**Software Engineering I (cross listed with CS-545)** (CS-345)
Codes: U P E B 5
Textbooks: *Software Engineering*
by Sommerville, Ian
*Software Engineering with Ada*
by Booch, Grady
Tools: DEC Ada
VAX 6340

**Formal Design and Specification Methods** (CS-578)
Codes: G P E B 4
Textbooks: Selected readings

Additional Information:
Miscellaneous software engineering projects have been undertaken. For example, a group study produced a lengthy report on how to implement a
Master’s degree in "Software and Computer Systems Engineering." Funded graduate research supports major studies of formal software methodologies, software metrics, and software design as well as the design and implementation of large software projects.

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**State University of New York at Stony Brook**  
College of Engineering and Applied Science  
Department of Computer Science  
Stony Brook, NY 11794

**Degrees:** BS, MS, PHD

**Contact:** Prof. Peter B. Henderson  
Graduate Program Director  
(516) 632-8470

**Update:** May 1987

**Courses:**  
**Techniques of Software Design** (MSC-520)  
**Codes:** G N R Y 11  
**Textbooks:**  
*IEEE Tutorial on Software Engineering*  
by Wasserman, Anthony I. and Freeman, Peter  
*Software Engineering Concepts*  
by Fairley, Richard E.

**Tools:**  
Berkeley UNIX Pascal  
VAXes and Sun workstations under UNIX 4.3 BSD  
CLU, Modula-2

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**Union College**  
School of Computer Science  
Department of Electrical Engineering and Computer Science  
Schenectady, NY 12308

**Degrees:** BS, MS

**Contact:** Prof. David Hannay  
Co-Chair EE/CS Department  
(518) 370-6270

**Update:** None

**Courses:**  
**Software Engineering** (CSC-260)  
**Codes:** U P X Y 1  
**Textbooks:**  
*C Primer*  
by Hancock, L. and Krieger, M.  
*Classics in Software Engineering*  
by Yourdon, Edward N.

**Tools:** VAX
North Carolina

Lenoir-Rhyne College
Natural Science & Math Division
Computer Science
Hickory, NC  28603

Contact:  Dr. Gail Miles
Chair and Associate Professor
(704) 328-7268

Update:  April 1990

Courses:  Software Systems Analysis and Design (CSC 400)
Codes:    U P R Y 4
Textbooks:  Software Engineering Concepts
by Fairley, Richard E.
Tools:  Excelerator
80386 Microcomputers, Macintosh SE & II

Senior Project - Software Engineering Option (CSC 450)
Codes:    U P R Y 1
Textbooks:  Software Engineering:  A Practitioner’s Approach
by Pressman, Roger S.
Software Engineering Concepts
by Fairley, Richard E.
Tools:  Modula-2, Ada, 4GL
Excelerator
VAX, Microvax, Apollo
80386 Microcomputers and Macintosh SE & II

North Carolina State University
Department of Computer Science (Undergraduate)
Program in Computer Studies (Graduate)
Raleigh, NC  27695

Degrees:  BS, MS, MCS

Contact:  Prof. K. C. Tai
Professor
(919) 737-7862

Update:  May 1987

Courses:  Software Engineering (CSE 510)
Codes:    G P E Y 10
Textbooks:  Software Engineering:  Design, Reliability, and Management
by Shooman, Martin L.
Software Engineering Concepts
by Fairley, Richard E.
Tools:  Pascal/VS, UCSD Pascal
IBM 4381 (VM/CMS)
MicroVAX (ULTRIX)
SAGE (UCSD p system)

Software Engineering Project (CSC 472)
Codes:    U P E Y 4
Tools: Verdix C
MicroVAX (ULTRIX)
C and UNIX Shell

**Intro to Programming Environments** (CSC 471)
Codes: UPYE4
Tools: Verdix C
MicroVAX (ULTRIX)
C and UNIX Shell

**Software Engineering with Ada** (CSC 481)
Codes: UPYE4
Textbooks: *Software Engineering with Ada*
by Booch, Grady
Tools: Verdix Ada
MicroVAX (ULTRIX)

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**University of North Carolina at Chapel Hill**
College of Arts and Sciences
Department of Computer Science
Chapel Hill, NC 27599-3175

**Degrees:** MS CS, PHD CS, BS M

**Contact:** Ms. Katrina B. Coble
Admissions and Graduate Secretary
(919) 962-1900
User ID: admit@cs.unc.edu
Network: Internet

**Update:** February 1990

**Courses:**

**Software Engineering Laboratory** (Comp 145)
Codes: BPBY53
Textbooks: *IEEE Tutorial on Software Design Techniques*
by Freeman, Peter and Wasserman, Anthony I.
*Software Engineering Concepts*
by Brooks, Frederick P.
*The Mythical Man-Month: Essays on Software Engineering*
by Brooks, Frederick P.
Tools: C, C++, Smalltalk, Pascal
MacProject, Stellar, Silicon Graphics
VAX and Sun workstations

**Software Engineering** (Comp 227)
Codes: GPRY5
Textbooks: *IEEE Tutorial on Software Design Techniques*
by Freeman, Peter and Wasserman, Anthony I.
*Software Engineering Concepts*
by Fairley, Richard E.
*The Mythical Man-Month: Essays on Software Engineering*
by Brooks, Frederick P.
North Dakota

North Dakota State University
College of Science and Mathematics
Department of Computer Science
Fargo, ND  58105

Degrees:  BS, MS, PHD

Contact:  Prof. Kenneth Magel
Chair, Comp. Sci. and Operation Research
(701) 237-8189
User ID:  ncmagd@ndsuvox

Update:  October 1988

Courses:  Software Development (CS 513)
Codes:  G P X Y 1
Textbooks:  Software Engineering: A Practitioner’s Approach
           by Pressman, Roger S.
Tools:  VAX 11/780 running Berkeley Unix 4.3
       Zenith PCs running MS DOS 3.1

Systems Analysis (CS 213)
Codes:  U P X Y 1
Tools:  IBM 3081 using CMS

System Testing and Maintenance (CS 313)
Codes:  U P R Y 1
Textbooks:  The Art of Software Testing
           by Myers, Glenford
Tools:  Macintosh Pascal
       Macintosh II

Realtime Software Design (CS 413)
Codes:  U P R Y 1

Additional Information:
Every undergraduate takes at least 4 courses that require substantial
projects. Every graduate student takes at least 2 courses that require
substantial projects. Several courses at all levels devote 2-3 weeks each
to software engineering methodologies, concepts, or practices.
Ohio

Air Force Institute of Technology
School of Engineering
Department of Computer Engineering
Graduate Computer Systems
Wright-Patterson AFB, OH 45433-6583

Degrees: MS, MS CE, MS EE, PHD

Contact: Dr. Paul D. Bailor
Assistant Professor
(513) 255-3576
User ID: pbailor@galaxy@afit.af.mil
Network: Internet

Update: January 1990

Courses:
Software Project Management (AMGT553)
Codes: G N O A 3
Textbooks: Selected readings

Systems & Software Analysis (EENG593)
Codes: G N R T 5
Textbooks: Modern Systems Analysis
by Yourdon, Edward N.
Software Engineering, 3rd ed.
by Sommerville, Ian

Software Systems Programming Laboratory (EENG690)
Codes: G P R A 6

Software Environments (COSC755)
Codes: G P E Y 5
Textbooks: Selected readings
Tools: Verdix Ada
VAX 11/785

Principles of Embedded Systems Software (COSC655)
Codes: G N R Y 5

Additional Information:
In Software Project Management, students run assorted cost estimation programs and project scheduling software.

Bowling Green State University
School of Arts and Sciences
Department of Computer Science
Bowling Green, OH 43402

Degrees: BS CS, MS CS

Contact: Dr. Barbee Mynatt
Associate Professor
(419) 372-2339

Update: November 1987
Courses: **Software Development** (464)
Codes: B P E Y 8
Textbooks: *Software Engineering with Student Project Guidance*
by Mynatt, Barbee
Tools: Teamwork, Prototyper
VAX Station, IBM PC/AT
Yourdon notation

**Software Engineering** (564)
Codes: G P E B 5

**Human Factors in Computing** (565)
Codes: G N E B 2
Textbooks: *An Introduction to Human-Computer Interaction*
by Booth
Tools: Prototyper
Hypercard
Oasis

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Cleveland State University
James J. Nance College of Business Administration
Department of Computer and Information Science
Cleveland, OH  44115

Degrees: BS CIS, MS CIS

Contact: Prof. Thomas S. Heines
Chairman
(216) 687-4760

Update: November 1987

Courses: **Structured Systems Analysis** (CIS 433)
Codes: U P E O 6
Textbooks: *Structured Analysis Methods for Computer Information Systems*
by Teague, Lavette C. and Pidgeon, Christopher

**Structured Systems Design** (CIS 434)
Codes: U P E O 6
Textbooks: *The Practical Guide to Structured Systems Design*
by Page-Jones, Meilir
Tools: IBM 3081
IBM PC
COBOL, PSL/PSA, Structured Architect, dBase III

**Software Engineering** (CIS 620)
Codes: G P R O 6
Textbooks: *System-370 Job-Control Language*
by Brown, Gary D.
The C Programming Language
by Kernighan, Brian and Ritchie, Dennis
Tools: IBM 3081
VAX 11:750

**Systems Analysis and Design** (CIS 634)
Codes: G P E O 6
Textbooks: *The Practical Guide to Structured Systems Design*
by Page-Jones, Meilir
Tools: IBM 3081
IBM PC
Additional Information:
Structured Systems Analysis and Structured Systems Design are offered 2-3 times per year. Software Engineering is offered 3 times per year. Systems Analysis and Design is offered 2 times per year.

Kent State University
School of Arts and Sciences
Department of Mathematical Sciences
Program in Mathematics/Computer Science
Kent, OH  44242

Degrees:  BS, MS, PHD

Contact:  Prof. Michael Rothstein
Assistant Professor
(216) 672-2430

Update:  May 1987

Courses:  Software Engineering (63251)
Codes:  G P E Y 6
Textbooks:  Software Engineering
by Sommerville, Ian
Tools:  C, Pascal
        VAX 750 (UNIX)

Software Engineering Projects (43107)
Codes:  U P E D 3
Textbooks:  Software Engineering
by Sommerville, Ian
Tools:  UNIX

Ohio State University
Department of Computer and Information Science
Columbus, OH  43210

Degrees:  BS CIS, MS CIS, PHD CIS

Contact:  Dr. Stu Zweben
Associate Professor
(614) 292-9526
User ID:  ZWEBEN@CIS.OHIO-STATE.EDU
Network:  Internet

Update:  February 1990

Courses:  Software Engineering (CIS 757)
Codes:  B P E O 5
Textbooks:  Software Engineering:  A Practitioner’s Approach, 2nd ed.
           by Pressman, Roger S.
Tools:  Sun workstations
       IDE STP
       Pascal, C

Systems Programming (CIS 560)
Codes:  U P R T 5
Textbooks:  *Systems Software, 2nd ed.*
   by Beck
Tools:  Sun workstations
       IDE STP
       Pascal

**Information Systems Analysis and Design** (CIS 516)
Codes:  U P B T 4
Textbooks:  *Structured Analysis Methods for Computer Information Systems*
   by Teague and Pidgeon
Tools:  Sun workstations
       IDE STP

**Software Testing** (CIS 788.D12)
Codes:  G P E Y 2
Textbooks:  Selected readings

**User Interface Development** (CIS 788.10F)
Codes:  B P E B 4
Textbooks:  *Readings in Human Computer Interaction*
   by Baecker and Buxton
Tools:  PC, Macintosh, Sun, HP

**Revisable Software Research Project** (CIS 888.Z12)
Codes:  G N E T 4

**Software Engineering Project** (CIS 788.12)
Codes:  B P E O

**Additional Information:**
CIS 757 is offered 2 of 3 quarters per academic year.

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**Wright State University**
College of Engineering and Computer Science
Department of Computer Science and Engineering
Dayton, OH  45435

**Degrees:**
BA, BS, BS CE, MS, MS CE, PHD

**Contact:**
Prof. Howard V. Carson
Assistant to the Chair
(513) 873-2491
User ID:  cse_dept@wright.edu
Network:  CSNET

**Update:**
October 1988

**Courses:**
**Software Engineering I** (Software Engineering 760)
Codes:  G P E Y 1
Textbooks:  *Software Engineering Concepts*
   by Fairley, Richard E.
Tools:  compiler suitable to project
       computer suitable to project
       language suitable to project

**Software Engineering II** (Software Engineering 761)
Codes:  G P E Y 1
Textbooks:  *Approaches to Prototyping*
   by Budde, Reinhard
   *Tutorial: Software Reusability*
by Freeman, Peter

Tools:
- compiler suitable to project
- computer suitable to project
- language suitable to project

**Introduction to Software Engineering** (Computer Engineering 460/660)

**Codes:** B P R T 1

**Textbooks:**
- *Software Engineering Concepts*
  by Fairley, Richard E.
- *Software Engineering with Ada, 2nd ed.*
  by Booch, Grady

**Tools:**
- VAX Ada compiler
- DEC VAX 11/785 running VMS

**Concurrent Software Design** (Computer Engineering 434/634)

**Codes:** B P R T 1

**Textbooks:**
- *Advanced Programmers Guide to UNIX SYSTEM V*
  by Thomas, Rebecca and Yates, Jean
- *Operating Systems Concepts*
  by Peterson, James L. and Silberschatz, Abraham
- *The C Programming Language*
  by Kernighan, Brian W. and Ritchie, Dennis M.

**Tools:**
- C
- NCR Tower 32/600 running UNIX System V

**Additional Information:**

Data Structures and Software Design (unlisted) involves some software engineering. A local area network of 8 Sun-3 UNIX workstations with high resolution terminals, including 1 color display, were available in 1987 to provide a powerful software development environment.
Oklahoma

Rogers State College
   Computer Science Division
   Claremore, OK  74017

Degrees:      AAS CAD, AAS CET, AAS CP, AS CS

Contact:      Prof. Clifford D. Layton
              Director, Computer Science Division
              (918) 341-7510 x286

Update:      None

Courses:     Software Engineering (Systems Analysis and Design) (CS 2133)
              Codes:   X X R X 1
Oregon State University
School of Science
Department of Computer Science
Program in Computer Systems
Corvallis, OR 97331

Degrees: BS, MS, PHD

Contact: Prof. Ted Lewis
Professor
(503) 754-3273

Update: None

Courses: Software Design (CS 319)
Codes: U P R T 1
Textbooks: Software Engineering Concepts
by Fairley, Richard E.
Tools: IBM PC
Macintosh
Unix (HP)

Software Systems: Methodology (CS 561)
Codes: G P R Y 1
Tools: Macintosh
C++, Pascal

Software Systems: Design (CS 562)
Codes: G P R Y 1
Tools: Macintosh
C++, Pascal

Portland State University
School of Engineering and Applied Science
Department of Computer Science
Portland, OR 97207

Degrees: BS CS, MS CS, PHD IS

Contact: Prof. Leonard Shapiro
Department Head
(503) 725-4036
User ID: len@cs.pdx.edu
Network: Internet

Update: February 1990

Courses: Software Engineering (CS 454)
Codes: B P E Y 4

Testing and Verification (CS 510TV)
Codes: G P E Y 2

Software Metrics (CS 510SM)
Codes: G P E Y 2
University of Oregon
School of Arts and Sciences
Department of Computer and Information Science
Eugene, OR  97403

Degrees:  BA, BS, MA, MS, PHD

Contact:  Prof. Alan Eliason
Associate Professor
(503) 686-4408
User ID:  eliason@cs.uoregon.edu

Update:  October 1988

Courses:

**Software Methodology I** (CIS 422)
Codes:  U P R T 5
Textbooks:  *Software Engineering*
           by Sommerville, Ian
Tools:  Scheme, Smalltalk
       Prototyper, RCS/UNIX
       Sun SPARC, Macintosh II, Tektronix 4300

**Software Methodology II** (CIS 423)
Codes:  U P E O 51
Textbooks:  *Software Engineering Concepts*
           by Fairley, Richard E.
           *The Practical Guide to Structured Systems Design*
           by Page-Jones, Meilir
           *Writing Efficient Programs*
           by Bentley, Jon Louis
Tools:  C, RAPID, Smalltalk
       Sun SPARC, Macintosh II, Tektronix 4300

**Software Engineering** (CIS 510)
Codes:  G N R Y 11
Textbooks:  *Interactive Programming Environments*
           by Barstow, David R., Shrobe, Howard E., and Sandewall, Erik
           *Software Specification Techniques*
           by Gehani, Narain and McGettrick, Andrew D.
Tools:  C, RAPID
       Sun SPARC, Macintosh II, Tektronix 4300

Additional Information:
Software Methodology II is offered 2 to 3 times a year.
Other courses are offered in Expert Systems and Database Management Systems
at the graduate level.
Pennsylvania

Allegheny College
Department of Computer Science
Meadville, PA  16335

Degrees:  BS CS

Contact:  Robert D. Cupper
Professor and Chair
(814) 332-2881
User ID:  cupp@music.alleg.edu
Network:  BITNET

Update:  January 1990

Courses:  Introduction to Computer Science I (CS110)
Codes:  UNRT4
Textbooks:  Computer Science: An Overview
by Brooksheer, J. Glen
Introduction to Computing and Computer Science with Pascal
by Walker, Henry M.

Introduction to Computer Science II
Codes:  UPRT
Textbooks:  Second Course with Modula/2
by Tucker, Allen

Carnegie Mellon University (Entry 1)
School of Computer Science
Software Engineering
Pittsburgh, PA  15213

Degrees:  MSE

Contact:  Dr. Normam Gibbs
Professor and Director
(412) 268-7703
User ID:  gibbs@sei.cmu.edu
Network:  Internet

Update:  February 1990

Courses:  Software Systems Engineering (17-711)
Codes:  GNRY

Formal Methods in Software Engineering (17-712)
Codes:  GNRY1

Advanced System Design Principles (17-713)
Codes:  GNRY

Software Creation and Maintenance (17-721)
Codes:  GNRY1

Analysis of Software (17-722)
Codes:  GNRY1
**Software Project Management** (17-723)
Codes: G N R Y 4

**Software Development Studio** (17-781, 782, 783)
Codes: G P R Y 1

**Software Development Seminar** (17-791, 792)
Codes: G P R Y 1

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**Carnegie Mellon University (Entry 2)**
Mellon College of Science/School of Computer Science
Pittsburgh, PA 15213

Degrees: BS M/CS, PHD CS

Contact: Dr. Allan Fisher  
Associate Dean for Undergrad. Education  
(412) 268-7688  
User ID: all@vlsi.cs.cmu.edu  
Network: Internet

Update: February 1990

Courses: **Software Engineering** (15-413)
Codes: U P E T 6  
Textbooks: *Software Engineering: A Practitioner’s Approach*  
by Pressman, Roger S.  
Tools:  
Andrew workstations  
UNIX on VAX  
Ada, C, and Lisp

Additional Information:  
15-413 is 1 of 4 courses, any 2 of which are  
required for the Math/CS BS degree.

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**Cheyney University**
Arts & Sciences  
Computer & Information Sciences  
Cheyney, PA 19319

Degrees: BA IS

Contact: Prof. Jesse Williams  
Associate Professor  
(215) 399-2348

Update: February 1990

Courses: **Software Engineering Using Ada** (MAS 413/513)
Codes: B P E D 2  
Textbooks: *Ada Language and Methodology*  
by Watt, Wichmann & Findlay  
Tools:  
Ada  
IBM PS/2 Model 70/486
Drexel University
College of Science
Department of Mathematics and Computer Science
Philadelphia, PA  19104

Degrees:  BS CS, MS CS

Contact:  Dr. Jeffrey L. Popyack
Program Coordinator for Computer Science
(215) 895-2668
User ID:  popyack@duvm
Network:  BITNET

Update:  February 1990

Courses:  

Software Engineering I (N677)
Codes:  U P R Y 6
Textbooks:  *Software Engineering: Planning for Change*
by Lamb, David
Tools:  Lightspeed Pascal, Prime C, Sun 2.1 Modula-2
Sun, Macintosh, PC/AT
VDM
Proxy

Software Engineering II (N678)
Codes:  U P E Y 6
Textbooks:  *Software Engineering: Planning for Change*
by Lamb, David
Tools:  Lightspeed Pascal, Prime C, Sun 2.1 Modula-2
Proxy
Sun, Macintosh, PC/AT
VDM

Software Engineering I (M745)
Codes:  G P E B 6
Textbooks:  *Software Engineering: A Practitioner's Approach*
by Pressman, Roger S.
Tools:  Lightspeed Pascal, Prime C, Sun 2.1 Modula-2
Proxy
Sun, Macintosh, PC/AT
VDM

Software Engineering II (M746)
Codes:  G P E B 6
Textbooks:  *Software Engineering: A Practitioner's Approach*
by Pressman, Roger S.
Tools:  Lightspeed Pascal, Prime C, Sun 2.1 Modula-2
Proxy
Sun, Macintosh, PC/AT
VDM

Topics in Software Engineering (M748)
Codes:  G P E D 6

Lehigh University
College of Engineering and Physical Sciences
Department of Electrical Engineering
Bethlehem, PA  18015
Degrees: BS CS, BS CE, BS EE, MS CS, MS CE, MS EE, PHD CS, PHD CE, PHD EE

Contact: Dr. Larry Varnerin
Chairman
(215) 758-4823

Update: May 1987

Courses: Software Engineering (ECE 116)
Codes: U P R Y 6
Textbooks: Software Engineering Concepts by Fairley, Richard E.
Tools: CYBER 180 Model 850
       DEC 20 Model 2065
       Zenith Z-100 PC series

Shippensburg University
College of Arts and Sciences
Department of Mathematics and Computer Science
Program in Computer Science
Shippensburg, PA 17257

Degrees: BS CS

Contact: Dr. Howard Bell
Department Chairman
(717) 532-1431

Update: September 1988

Courses: Software Design for Information Systems (CPS305)
Codes: U P E Y 4
Textbooks: Software Engineering: A Practitioner’s Approach by Pressman, Roger S.
Tools: UNIX
       AT&T 3B2
       Microcomputers
       Sperry 1100
       C, FORTRAN, Pascal

Temple University
College of Engineering, Computer Sciences and Architecture
Department of Computer and Information Sciences
Programs in Computer Science and Information Science
Philadelphia, PA 19122

Degrees: BA, BS, BBA, MS, MS BA, PHD, PHD BA

Contact: Ms. Laurie Shteir
(215) 787-1681

Update: February 1990

Courses: Theorem Proving and Program Verification (675)
Codes: G P E X 1
Textbooks: An Introduction to the General Theory of Algorithms by Machtey, M. and Young, P.
The Design of Well-Structured and Correct Programs
by Alagic, Saud and Arbib, Michael A.

Software Engineering (690)
Codes: G N E X 3
Textbooks: Software Engineering: A Practitioner’s Approach by Pressman, Roger S.
Tools: OPSS
Pascal
VMS

Information Systems Analysis and Design (201)
Codes: U P R T 1
Textbooks: Elements of Systems Analysis by Gore, Marvin and Stubbe, John

Project in Information Science (301)
Codes: U P R T 1
Tools: AT&T 3B2
PCs

Software Design (338)
Codes: U P E Y 1
Textbooks: Reliable Software Through Composite Design by Myers, Glenford J.
Software Engineering: A Practitioner’s Approach by Pressman, Roger S.
Structured Design by Yourdon, Edward N. and Constantine, Larry L.
Tools: IBM 4381 PCs

Additional Information:
Business Administration programs with concentration in Computer and Information Science are offered.

The Pennsylvania State University
College of Science
Computer Science Department
Program in Computer Science
University Park, PA 19802

Degrees: BS, MS, PHD

Contact: Dr. Joseph M. Lambert
Department Head
(814) 865-9505

Update: June 1987

Courses: Software Design Methods (CMPSC 416)
Codes: B P E Y 4
Textbooks: Ada as a Second Language by Cohen, Norman H.
Software Engineering by Sommerville, Ian
Tools: IBM Ada
IBM 3090

University of Pennsylvania
School of Engineering and Applied Science  
Department of Computer and Information Science  
Program in Computer Science and Engineering  
Philadelphia, PA  19104

Degrees:  BSE

Contact:  Dr. Norman I. Badler  
Undergraduate Chair  
(215) 898-5862

Update:  January 1989

Courses:  Interactive System Design (CSE 280)  
Codes:  U P E B 1  
Textbooks:  *Interactive Programming Environments*  
by Barstow, David R., Shrobe, Howard E., and Sandewall, Erik  
Tools:  Color Graphics  
IBM PC/XT/AT  
VAX 8650

University of Pittsburgh  
School of Library and Information Science  
Interdisciplinary Department of Information Science  
Pittsburgh, PA  15260

Degrees:  BS, MS, PHD

Contact:  Dr. James G. Williams  
Chairman  
(412) 624-9418  
User ID:  JIM%idis.uucp@pitt.csnet  
Network:  CSNET

Update:  June 1987

Courses:  Information Systems Analysis, Design, and Evaluation (INF SC 272)  
Codes:  G P E O 6  
by Fitzgerald, Jerry and Fitzgerald, Arda  
Tools:  C, COBOL, FORTRAN, Pascal  
IBM PC  
Mac  
VAX 780  
VAX 8650

Software Engineering and Software Tools (INF SC 276)  
Codes:  G P E O 5  
Textbooks:  *Software Engineering: A Practitioner’s Approach, 2nd ed.*  
by Pressman, Roger S.

Additional Information:

Here are the projected schedules for the courses:
  
Information Systems Analysis, Design, and Evaluation
  1988-89 : Winter Term
  1989-90 : Fall Term
  1990-91 : Fall Term

Software Engineering and Software Tools
  1988-89 : Fall and Spring Terms
  1989-90 : Winter Term
  1990-91 : Spring Term
Villanova University
College of Liberal Arts and Sciences
Mathematical Sciences Department
Villanova, PA 19085

Degrees: BS CS, BS M, MS CS, MA M

Contact: Dr. Daniel Joyce
(215) 645-7344
User ID: djoyce@uvaxcom
Network: BITNET

Update: January 1989

Courses: Software Engineering (CSC 4700)
Codes: U P R Y 4
Textbooks: Software Engineering Concepts
by Fairley, Richard E.
The Mythical Man-Month: Essays on Software Engineering
by Brooks, Frederick P.
Tools: Logitech Modula-2/86, Turbo Pascal
Zenith 386
Modula-2

Software Engineering (CSC 8540)
Codes: G N E Y 4
Textbooks: Software Engineering: A Practitioner's Approach
by Pressman, Roger S.

Additional Information:
One of the requirements for the Master's degree in Computer Science is writing an independent study. This often assumes the form of a major project, sometimes a group project, embodying principles of software engineering.
South Carolina

Clemson University
College of Sciences
Department of Computer Science
Clemson, SC 29634-1906

Degrees: BS, BS CIS, MS, PHD CS

Contact: Dr. A. Joseph Turner
Professor and Chairman
(803) 656-3444
User ID: turner@clemson.edu
Network: Internet

Update: October 1987

Courses: Software Development Methodology (CpSc 472/672)
Codes: B P B T 5
Textbooks: Software Engineering
by Sommerville, Ian
Tools: VAX cluster with VMS & ULTRIX
C, Modula-2, Ada, C++
VAXset, dbx

Design and Programming Methodology (CpSc 872)
Codes: G P E T 3
Textbooks: Abstraction & Specification in Program Development
by Liskov & Guttag
Software Design: Methods and Techniques
by Peters, Lawerence J.
Tools: some tools

Software Verification, Validation, and Measurement (CpSc 873)
Codes: G P E Y 4
Textbooks: Selected readings

Introduction to Software Development (CpSc 372)
Codes: U P R T
Textbooks: Software Engineering: A Practitioner’s Approach
by Pressman, Roger S.
Tools: VAX cluster with VMS & ULTRIX
C, Modula-2, Ada
VAXset, dbx

Additional Information:
Software Development Methodology is offered once or twice per year. Software Verification, Validation, and Measurement is offered every 2 years when demand warrants.
East Tennessee State University
School of Applied Science and Technology
Department of Computer and Information Sciences
Programs in Computer Science and Information Science
Johnson City, TN 37614

Degrees: BS, MS

Contact: Dr. Gordon L. Bailes
Chairman
(615) 929-5332
User ID: I01BAILES@ETSUACE
Network: BITNET

Update: September 1988

Courses:

Software Engineering (222-3250)
Codes: U P R A 4
Textbooks: Software Engineering: A Beginner’s Guide
by Pressman, Roger S.
Tools: Cadre’s Teamwork
IBM PS/2 50, 80 -- OS/2 and MS-DOS
WordPerfect

Software Design (222-5300)
Codes: G N B Y 3
Textbooks: Software Engineering: A Practitioner’s Approach
by Pressman, Roger S.
Tools: IBM PS/2
Teamwork PCSA

Advanced Programming Techniques (222-3310)
Codes: U P R A
Textbooks: Modern Structured Analysis
by Yourdon, Edward N.
Structured Systems Design
by Page-Jones, Melilir
Tools: IBM PS/2 50’s and 80’s
Cadre’s Teamwork
Ada

Software Specification (222-5210)
Codes: G P E Y
Textbooks: The Specification of Complex Systems
by Cohen, Harwood, and Jackson
Tools: IBM PC
Pascal

Software Verification and Validation (222-5220)
Codes: G N B Y
Textbooks: Software System Testing and Quality Assurance
by Beizer, Boris
Tools: none used

Software Project Management (222-5230)
Codes: G P O Y 2
Textbooks: Managing Programming People
by Metzger, P. W.
Selected readings
Tools: IBM PS/2 50's and 80's
Cadre’s Teamwork
Miscellaneous estimation and scheduling software
WordPerfect

Ethical Issues in the Use of Computers (222-5450)
Codes: G N E Y 1
Textbooks: Computer Ethics
by Johnson, Deborah
Selected readings

Fisk University
Natural Science and Mathematics
Department of Mathematics and Computer Science
Computer Science
Nashville, TN  37208-3051

Degrees: BS CS, BS M
Contact: Ms. Vivian J. Fielder
Assistant Professor
Update: February 1990
Courses: Introduction to Computer Science II (CS120)
Codes: U P R T 1
Textbooks: Computer Science
by Namee, Douglas
Pascal
by Dale and Weems
Software Engineering Concepts
by Fairley, Richard E.
Tools: Pascal
VAX 11/750, IBM PC

Special Topics - Introduction to Software Engineering (CS390)
Codes: U P E D
Textbooks: Software Components & Ada: Structures, Tools, and Subsystems
by Booch, Grady
Software Engineering & Ada
by Booch, Grady
Software Engineering Concepts
by Fairley, Richard E.
Tools: Pascal, Ada, C
IBM PS/2, IBM PC, VAX 11/750 with VMS

University of Tennessee at Chattanooga
School of Engineering
Department of Computer Science
Chattanooga, TN  37403

Degrees: BS CS, MS CS
Contact: Dr. Jack Thompson
Head, Computer Science
Update: July 1987

Courses: Software Engineering I (CpSc 350)
Codes: U P R Y 10
Textbooks: *Systems Development* by Eliason, Alan L.
Tools: Pascal
Briefcase, Excelerator, ISPF on PCs
IBM 4381

Software Engineering II (CpSc 450)
Codes: U P R Y 6
Textbooks: *Complete Guide to Software Testing* by Hetzel
*Software Engineering* by Sommerville, Ian
Tools: PL/I
IBM 4381

Software Project Management (CpSc 520)
Codes: G P E B 5
Textbooks: *Controlling Software Projects* by DeMarco, Tom
*Practical Project Management* by Page-Jones, Meiler

Additional Information:
Software Engineering I is offered twice per year.

Vanderbilt University
School of Engineering
Department of Computer Science
Nashville, TN 37235

Degrees: BA, BS, MS, ME, PHD

Contact: Dr. Stephen R. Schach
Associate Professor
(615) 322-2924
User ID: srs@vuse.vanderbilt.edu
Network: Internet

Update: November 1989

Courses: Software Engineering (CS 287)
Codes: B P E Y
Textbooks: *Software Engineering* by Sommerville, Ian
Tools: Verdix Ada
Sun 3/50, 3/80
Unix

Topics in Software Engineering (CS 387)
Codes: G P E Y 2
Texas

Baylor University
College of Arts and Sciences
Department of Engineering and Computer Science
Computer Science
Waco, TX  76798

Degrees:  BA CS, BS CS, BE, MS CS

Contact:  Dr. William B. Poucher
(817) 755-3871
User ID:  Poucher@Baylor
Network:  BITNET

Update:  January 1990

Courses:  Introduction to Software Engineering (CSI4344)
Codes:  B P B Y 4
Textbooks:  Software Engineering - A Practitioner’s Approach, 2nd ed.
by Pressman, Roger S.
The Mythical Man-Month: Essays on Software Engineering
by Brooks, Frederick P.
Tools:  Anatool, Prototyper
MacApp, MPW Pascal, Lightspeed Pascal
Object Pascal

Rice University
Department of Computer Science
Program in Computer Science
Houston, TX  77251-1892

Degrees:  BA CS

Contact:  Prof. Ken Kennedy
Chairman
(713) 527-4834
User ID:  ken@rice.edu

Update:  September 1988

Courses:  Programming Studio (COMP 310)
Codes:  X P X Y 3
Textbooks:  Abstraction and Specification in Program Development
by Liskov, Barbara and Guttag, John
Tools:  Powell’s Modula-2 compiler on VAX, moving to C++ compiler on Sun/UNIX
VAX 11/750
moving to Sun 3/50

Southwest Texas State University
School of Science
Department of Computer Science
San Marcos, TX  78666

Degrees:  BA, BS, MA, MS
Contact: Dr. C. J. Hwang
Chairman
(512) 245-3409

Update: June 1987

Courses: Software Engineering (CS 3398)
Codes: U P E Y 5
Textbooks: Software Engineering by Sommerville, Ian
Software Engineering: A Practitioner's Approach by Pressman, Roger S.
Tools: C, FORTRAN, Pascal
VAX 8600 with VMS

Advanced Software Engineering (CS 5398)
Codes: G P E Y 3
Textbooks: Principles of Information System Analysis and Design by Mills, Linger, and Hevner
Software Engineering with Ada by Booch, Grady
Tools: VAX Ada, VAX C
VAX 8600 with VMS

St. Edward's University
Physical, Biological Sciences
Computer Science
Austin, TX  78704

Degrees: BA CS, BS CS

Contact: Dr. Barbara Boucher Owens
Associate Professor of Computer Science
(512) 448-8463

Update: February 1990

Courses: Software Engineering (CS 39)
Codes: U P E Y 1
Textbooks: Software Engineering by Sommerville, Ian

Stephen F. Austin State University
School of Business Administration
Department of Computer Science
Nacogdoches, TX  75962

Degrees: BBA, BS, MS, MS CS

Contact: Dr. Jarrell C. Grout
Professor
(409) 568-1876
User ID: jcgrou@sfaustin
Network: BITNET

Update: October 1988

Courses: Software Development Principles (513)
Texas Christian University
AddRan College
Computer Science Department
Master’s of Software Design and Development
Ft. Worth, TX 76129

Degrees: MSDD

Contact: Dr. James R. Comer
Chairman
(817) 921-7166

Update: February 1990

Courses: Introduction to Software Design and Development (SODE 5143)
Codes: G N R Y 9
Textbooks: Software Engineering
by Pressman, Roger S.
Software Engineering: An Industrial Approach
by Radice, R. and Phillips, R.

Ada Design and Development (SODE 6013)
Codes: G P E D 4
Textbooks: Software Engineering with Ada
by Booch, Grady
Tools: DEC Ada
DEC VAX 11/780

Software Quality Assurance and Metrics (SODE 6043)
Codes: G P E D 4
Textbooks: Software Metrics
by Gilb, Tom

Security and Privacy (SODE 6053)
Codes: G P E D 4
Textbooks: Foiling the System Breakers: Computer Security and Access Control
by Lobel, Jerome

Modern Software Requirements and Design Techniques (SODE 6113)
Codes: G P R Y 8
Textbooks: Software Design: Methods and Techniques
by Peters, Lawrence J.
Structured Requirements Definition
by Orr, Kenneth T.

Applied Design, Programming and Testing Techniques (SODE 6123)
Codes: G P R Y 8
Textbooks: Software Evolution
by Arthur, L.
The Art of Software Testing
by Myers, Glenford J.

Management of Software Development (SODE 6153)
Codes: G P R Y 8
Textbooks: Implementing Software Engineering Practices
by Buckley, Fletcher
Principles of Software Engineering Management
by Gilb, Tom

Economics of Software Development (SODE 6163)
Codes: G P R Y 8
Textbooks: Programming Productivity
by Jones, R.
Software Engineering Economics
by Boehm, Barry W.

Effective Communications in Small Groups (SODE 6193)
Codes: G P E D 3
Textbooks: Guide to Managerial Communication
by Munter

Software Implementation Project I (SODE 7113)
Codes: G P R Y 7
Textbooks: How to Write Macintosh Software
by Master, Scott
Tools: Apple Macintosh, ANATOOLS, MACSCHEDULE,
Prototyper, Think Pascal, MicroPlanner PLUS

Software Implementation Project II (SODE 7123)
Codes: G P R Y 7

Object Oriented Programming (SODE 6023)
Codes: B P E D

Texas Tech University
Computer Science Department
Lubbock, TX 79409-3104

Degrees: BS, MS, PHD

Contact: Dr. Donald J. Bagert, Jr.
Assistant Professor of Computer Science
(806) 742-1189
User ID: bedjb@ttacs1
Network: BITNET

Update: February 1990

Courses:

Senior Project Design (CS 4411)
Codes: U P R Y 3
Textbooks: CASE Using Software Development Tools
by Fisher, Alan S.
Software Engineering Concepts
by Fairley, Richard E.
Tools: Ada, Pascal (Turbo Pascal 5.5)
Excelerator on PCs

Senior Project Implementation Laboratory (CS 4412)
Codes: U P R Y 3
Textbooks: CASE Using Software Development Tools
by Fisher, Alan S.
Software Engineering Concepts
by Fairley, Richard E.
Tools: Ada, Pascal (Turbo Pascal 5.5)
Excelerator on PCs
**Principles of Software Development Systems (CS 5366)**

Codes: G P E Y

Textbooks: *Programming in Ada, 3rd Edition*
by Barnes, John Gilbert Presslie

*Software Engineering, 3rd Edition*
by Sommerville, Ian

Tools: Ada, Pascal, C
Excelerator/RTS on VAX and PCs

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**Software Development Systems (CS 5363)**

Codes: G P E Y 5

Textbooks: *Software Engineering, 3rd Edition*
by Sommerville, Ian

Tools: Ada, Pascal, C
Excelerator/RTS on VAX and PCs

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**The University of Texas at Arlington**

The College of Engineering
Department of Computer Science Engineering
Arlington, TX  76019

**Degrees:**

BS, MS CS, MS CSE, ME CSE, PHD CS, PHD CSE

**Contact:**

Dr. Paul C. Grabow
Assistant Professor
(817) 273-2348
User ID: cs-grabow@uta.edu

**Update:**

September 1988

**Courses:**

**Methods in Software Engineering** (CSE 4310)

Codes: U P E Y 6

Textbooks: *Software Engineering Concepts*
by Fairley, Richard E.

*The Mythical Man-Month: Essays on Software Engineering*
by Brooks, Frederick P.

Tools: Pascal
VAX 11/780

**Software Engineering** (CS 5324)

Codes: G P R O 6

Textbooks: *Software Engineering Concepts*
by Fairley, Richard E.

*The Mythical Man-Month: Essays on Software Engineering*
by Brooks, Frederick P.

Tools: Ada, Pascal
VAX 11/780
Gypsy, ISML, Prolog

**Advanced Software Engineering** (CS 6324)

Codes: G P E Y 6

Textbooks: *Applying Software Engineering Principles with FORTRAN*
by Marca, David

Tools: Ada, Pascal
VAX 11/780

**Software Engineering in Ada** (CSE 5321)

Codes: G P E O 2

Textbooks: *Programming in Ada*
by Barnes, John Gilbert Presslie
Managing System Development (CSE 5346)

Codes: G P E Y 1
Textbooks: Cost Estimation for Software Development by Londeix, B.
          Principles of Software Engineering Management by Gilb, T.
Tools: DEC Pascal
       VAX 8700

Additional Information:
Software Engineering is offered twice per year (spring and summer).
Software Engineering in Ada is offered intermittently.

The University of Texas at Austin
College of Natural Science
Department of Computer Science
Austin, TX  78712

Degrees: BA, BS, MS, PHD

Contact: Dr. Laurie Werth
         Professor
         (512) 471-9535
         User ID: lwerth@cs.utexas.edu

Update: November 1989

Courses: Software Engineering (CS373)
Codes: U P E T 7
Textbooks: Software Engineering: A Practitioner’s Approach by Pressman, Roger S.
          Hypercard, MacApp/MPW, Object Pascal
          HP9000 workstations
          Macintosh
          Ada, C, Smalltalk

Software Engineering Economics (EE 382M)
Codes: G N E Y 4
Textbooks: Software Engineering Economics by Boehm, Barry W.

Additional Information:
We integrate Software Engineering in the CS 1, CS 2 (Pascal) and Data Structures sequence at the undergraduate level.

The University of Texas at Dallas
School of Natural Sciences and Mathematics
Program in Computer Science
Richardson, TX  75083

Degrees: BS, MS, PHD

Contact: Dr. Simeon Ntafos
The University of Texas at El Paso

College of Engineering
Computer Science Department
El Paso, TX  79968-0518

Degrees:  BS CS, CE, EE; MS CS, EE; PhD CE

Contact:  Dr. Daniel Cooke
Assistant Professor
(915) 747-5470

Update:  February 1990

Courses:  Software Engineering I (CS 3410)
Codes:    U P R Y 4
Textbooks:  Software Engineering
by Sommerville, Ian
Tools:  Pascal, Prolog

Software Engineering II (CS 3411)
Codes:    U P R Y 4
Tools:  This is a project course. The tools and languages used vary depending upon the nature of the project.

Software Engineering (CS 3531)
Codes:    G P E Y

The University of Texas at San Antonio

College of Science and Engineering
Division of Mathematics, Computer Science and Systems Design
Program in Computer Science
San Antonio, TX  78285

Degrees:  BS, MS

Contact:  Dr. Barbara Boucher Owens
Associate Professor of Computer Science
(512) 448-8463

Update:  None
Courses: **Programming Methodology** (CS 3773)
Codes: U P R O 1
Textbooks: *Automated Data Systems Documentation Standards*  
by unknown  
*Software Engineering: A Practitioner's Approach*  
by Pressman, Roger S.  
*The Elements of Programming Style*  
by Kernighan, Brian and Plauger, P.J.
Tools: IBM 4381 with CMS  
VAX 11/780 with VMS

Software Design (CS 5103)
Codes: G P E O 1
Textbooks: *The Program Development Process: Part II: The Programming Team*  
by Aron, Joel D.
Tools: IBM 4381 with CMS

Software Configuration Management (CS 5143)
Codes: G P E O 1
Textbooks: *Software Configuration Management: An Investment in Product Integrity*  
by Bersoff, Edward et al.

Software Testing (CS 5133)
Codes: G P E O 1
Textbooks: *The Art of Software Testing*  
by Myers, Glenford J.
Tools: VAX 11/780 with VMS

Additional Information:
Programming Methodology is offered in Fall and Spring semesters. Software Design, Software Configuration Management, and Software Testing are offered together in regular semester rotation. The graduate courses (5103, 5133, 5143) comprise a depth area of study for graduate students, who must develop at least 3 such areas in their course of study.

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University of Houston - Clear Lake  
School of Natural and Applied Sciences  
Department of Computer Science and Information Systems  
Program in Computer Science  
Houston, TX  77058

Degrees:  
BA CIS, BS CS, MA CIS, MS CS

Contact:  
Dr. George C. Collins  
Assistant Dean and Director of Student Affairs  
(713) 488-9386

Update:  
September 1988

Courses: **Ada Programming Language** (CSCI 3432)
Codes: U P R T 1
Textbooks: *Ada as a Second Language*  
by Cohen, Norman H.  
*Reference Manual for the Ada Programming Language*  
by ANSI/MIL-STD-1815A
Tools: VAX 11/785

Software Design Methodologies (CSCI 4432)
Codes: U P E Y 3
Textbooks: *A Unified Methodology for Developing Systems*  
by Wallace, Stockenberge and Charette
Tools: 
Ada (DEC) 
VAX 11/785

Software Design Tools (CSCI 5435)
Codes: G P E Y 1
Textbooks: Software Engineering by Sommerville, Ian
Tools: Ada (DEC) 
VAX 11/785

Additional Information:
UH-CL has a strong emphasis on the engineering of computer automated systems, which includes the integration and trade-off studies of issues involving software, hardware, and people. Therefore, several research projects and these have a strong component of software engineering. In addition, two system-level courses offered annually that contain such a component are Computer Automated Systems (CTEC 4532) and Synthesis of Computer Networks (CTEC 6532).
Utah

Brigham Young University
College of Math and Applied Sciences
Department of Computer Science
Provo, UT  84602

Degrees:  BS CS, MS CS, PHD CS

Contact:  Prof. Scott N. Woodfield
Associate Professor
(801) 378-2915

Update:  November 1987

Courses:  Introduction to Software Design (CS 327)
Codes:  U P R O 10
Textbooks:  Composite Structure Design
by Myers, Glenford J.
Software Engineering
by Sommerville, Ian
Tools:  UNIX (VAX, Sun Microsystems, 3B2)
Ada, Eiffel

Software Testing (CS 429)
Codes:  U P E O 10
Textbooks:  Software Testing Techniques
by Beizer, Boris

Systems Analysis (CS 425)
Codes:  U P E O 10
Textbooks:  Structured Analysis and System Specification
by DeMarco, Tom
Structured Systems Analysis: Tools and Techniques
by Gane, Chris and Sarson, Trish

Software Development and Maintenance (CS 525)
Codes:  G P E O 4
Textbooks:  IEEE Tutorial on Software Design Techniques
by Freeman, Peter and Wasserman, Anthony I.

Software Management and Quality Assurance (CS 527)
Codes:  G P E O 4
Textbooks:  IEEE Tutorial: Software Configuration Management
by Bryan, William, Chadbourne, Christopher, and Siegel, Stan
Software Cost Estimation and Life-Cycle Control
by Putnam, Lawrence H.
Software Quality Assurance: A Practical Approach
by Chow, Tsun S.

Theory of Software Engineering (CS 627)
Codes:  G P E O 4

Additional Information:
Introduction to Software Design is offered 3 times each year. Software Testing and
Systems Analysis are offered once or twice per year. Software Development and
Maintenance, Software Management and Quality Assurance, and Theory of Software
Engineering are offered once every 3 semesters.
University of Utah
Department of Computer Science
Salt Lake City, UT  84112

Degrees:  MS, PHD
Contact:  Susan Jenson
          Administrative Officer
          (801) 581-8224

Update:  February 1990

Courses:  Software Engineering Laboratory (CS 451,CS 452,CS 453)
          Codes:  U P X X
Software Engineering (CS 631)
          Codes:  B P X X
Software Engineering (CS 632)
          Codes:  B P X X
Textbooks:  Abstraction and Specification in Program Development
            by Liskov, Barbara and Guttag, John
            Selected readings

Utah State University
College of Science
Department of Computer Science
Logan, UT  84322-4205

Degrees:  BS, MS
Contact:  Prof. Greg Jones
          Associate Professor
          (801) 750-3267

Update:  October 1988

Courses:  Software Development/Implementation (CS 655-6)
          Codes:  G P E O 9
          Textbooks:  Software Engineering Concepts
                      by Fairley, Richard E.
          Tools:  TeleSoft Ada
                  HP 9000
                  Macintosh
                  PC clones
                  VAX 8500

Software Systems (CS 456)
          Codes:  U P R O 8
          Textbooks:  Software Engineering Methodology
                      by Turner, Ray
          Tools:  VMS
                  VAX 8500
                  Pascal

Additional Information:
  Software Development/Implementation is offered twice a year and Software
  Systems is offered 3 times each year.
Virginia

College of William and Mary
School of Arts and Sciences
Department of Computer Science
Williamsburg, VA 23185

Degrees: BS CS, MS CS, PHD CS

Contact: Dr. Robert E. Noonan
Professor
(804) 221-3456
User ID: noonan@cs.wm.edu
Network: Internet

Update: September 1988

Courses: Software Engineering (CS 435, 535)
Codes: B P E Y 1
Textbooks: Software Engineering: A Practitioner's Approach
by Pressman, Roger S.
Tools: Pascal, Ada, C
IBM PC-AT

Formal Methods in Software Engineering (CS 555)
Codes: G P E Y 2
Textbooks: Software Engineering: A Practitioner's Approach
by Pressman, Roger S.
Tools: Sheffield Pascal
Primes

Human Factors (CS 575)
Codes: G P E B 5
Textbooks: Software Psychology: Human Factors in Computer and Information Systems
by Shneiderman, Ben
Tools: Sheffield Pascal
Primes

Theory of Program Correctness (CS 552)
Codes: G P B O 5
Textbooks: The Science of Programming
by Gries, David
Tools: Sheffield Pascal
Primes

Program Testing (CS 605)
Codes: G P E B 5
Tools: Sheffield Pascal
Primes

Additional Information:
Software Engineering and Theory of Program Correctness are offered once every 3 semesters.

George Mason University
SITE
Information Systems & Systems Engineering  
Fairfax, VA  22030

Degrees:  BCS, MCS, MSE, PHD CS

Contact:  Prof. Paul Ammann  
Assistant Professor  
(703) 764-4664  
User ID:  pammann@gmuvax2.gmu.edu  
Network:  Internet

Update:  February 1990

Courses:  Formal Methods and Models in Software Engineering (CS 623)  
Codes:  G P R T 4

Software Construction (CS 619/SWSE 619)  
Codes:  G P R T

Software Design (SWSE 621)  
Codes:  G P R T 1

Software Project Lab (SWSE 626)  
Codes:  G P R T 1

Software Project Management (SWSE 625)  
Codes:  G P R T 1

Software Requirements and Prototyping (SWSE 620)  
Codes:  G P R T 1  
Textbooks:  Science of Programming  
by Gries, David  
Selected readings  
Software Construction in Ada  
by Sanden  
Software Engineering:  A Practitioner’s Guide  
by Pressman, Roger S.  
Software Requirements:  Analysis & Specification  
by Davis  
Tutorial:  Software Engineering Project Management  
by Thayer, Richard  
Tools:  WICOMO, COSTMODL  
SuperProject Plus

Advanced Software Requirements (SWSE 720)  
Codes:  G P E Y  
Textbooks:  Selected readings

University of Virginia  
School of Engineering and Applied Science  
Department of Computer Science  
Charlottesville, VA  22903

Degrees:  MS CS, MCS, PHD

Contact:  Prof. Robert P. Cook  
Chairman  
(804) 924-7605

Update:  June 1987
Courses: Software Engineering Laboratory (CS 485)
Codes: U P R Y 6
Textbooks: Software Engineering Concepts
by Fairley, Richard E.
Tools: Sheffield Pascal
Prime

Software Engineering (CS 685)
Codes: G P E Y 6
Textbooks: Software Engineering Concepts
by Fairley, Richard E.
Tools: AT&T C, Sheffield Pascal
AT&T 3B5s
Prime
Ada

Software Engineering (CS 885)
Codes: G N E D 1

Virginia Commonwealth University
School of Arts and Sciences
Department of Mathematical Sciences
Program in Computer Science
Richmond, VA  23284

Degrees: BA, BS, MA, MS

Contact: Dr. William E. Haver
Department Chairman
(804) 257-1301

Update: None

Courses: Software Engineering (591)
Codes: B P E D 1
Textbooks: Software Engineering
by Sommerville, Ian
Tools: IBM 3170
IBM PC
IBM PC/AT
Pyramid mini-computer network
Washington

Eastern Washington University
Mathematical Sciences & Technology
Computer Science
Cheney, WA 99004

Degrees: MCS, BCS, BS CIS, BA CSED, MED, BA M/CS

Contact: Prof. Ray E. Hamel
Chair, Department of Computer Science
(509) 359-6260

Update: February 1990

Courses: Senior Seminar (CSCD 498)
Codes: U P R Y 4
Textbooks: Software Engineering Concepts
by Fairley, Richard E.
Tools: Pascal, C
Course Builder
MacProject, TeamWork
Sun, PC, Macintosh

Software Engineering (CSCD 524)
Codes: G P R Y 4

Seattle University
School of Science and Engineering
Department of Software Engineering/Computer Science
Program in Software Engineering
Seattle, WA 98122

Degrees: MSE

Contact: Dr. Everald E. Mills
Director of Software Engineering
(206) 296-5510
User ID: mills%sumax.uucp@beaver.cs.washington.edu

Update: September 1988

Courses: Technical Communication (SE 508)
Codes: G N R Y 9
Textbooks: The Elements of Style
by Strunk and White
Writing for the Technical Professions
by Trzyna, T.
Tools: Encore
Macintosh
PCs
C, Pascal

Software Systems Analysis (SE 510)
Codes: G P R Y 9
Textbooks: Modern Structured Analysis
by Yourdon, Edward N.
Tools: Encore
Macintosh
PC
Various languages

System Design Methodology (SE 512)
Codes: G P R Y 9
Textbooks: The Practical Guide to Structured Systems Design
by Page-Jones, Meilir
Tools: Encore
Macintosh
PC
Various languages

Programming Methodology (SE 514)
Codes: G P R Y 9
Textbooks: Writing Efficient Programs
by Bentley, Jon Louis
Tools: Encore
Macintosh
PC
Various languages

Software Quality Assurance (SE 516)
Codes: G P R Y 9
Textbooks: Testing Software Development
by Ould and Unwin
The Art of Software Testing
by Myers, G.
Tools: Encore
Macintosh
PC
Various languages

Software Metrics (SE 518)
Codes: G P R Y 9
Textbooks: Software Engineering Metrics and Models
by Conte, S.D., Dunsmore, H.E., and Shen, V.Y.
Tools: Encore
Macintosh
PC
Various languages

Software Project Management (SE 531)
Codes: G P R Y 9
Textbooks: Dynamic Project Management: A Guide for Managers and Engineers
by Kezborn & Schilling
Managing a Programming Project
by Metzger, P.
Tools: Encore
Macintosh
PC
Various languages

System Procurement and Contract Acquisition (SE 533)
Codes: G P E Y 9
Textbooks: Data Processing Contracts: Structure, Contents, and Negotiations
by Brandon, Dick H. and Segelstein, S.
Tools: Encore
Macintosh
PC
Various languages
Formal Methods (SE 543)
Codes: G P R Y 9
Textbooks: *Structured Programming: Theory and Practice*
by Linger, Richard C., Mills, Harlan D., and Witt, Bernard I.

Human Factors in Computing (SE 560)
Codes: G P E Y 9
Textbooks: *Designing the User Interface*
by Schneiderman, B.
*Elements of Friendly Software Design*
by Heckel, P.
Tools: Encore
Macintosh
PC
Various languages

Data Security and Privacy (SE 562)
Codes: G P E Y 9
Textbooks: *Security, Accuracy, and Privacy in Computer Systems*
by Martin, James
Tools: Encore
Macintosh
PC

Software Engineering Project 1, 2, 3 (SE 585, SE 586, SE 587)
Codes: G P R Y 9
Tools: Varies by project

Special Topics (SE 591, SE 592, SE 593)
Codes: G P E D 9
Textbooks: Varies by topic
Tools: Varies by topic

Independent Study (SE 596, SE 597, SE 598)
Codes: G P E D 9
Textbooks: Varies by topic
Tools: Varies by topic

Additional Information:
At Seattle University, Software Engineering is viewed as an academic/professional
discipline, which has its principal academic basis in computer
science. Thus, the following graduate courses in computer science are also
offered as technical electives in the MSE program:

- ESW 500 Information Structures and Algorithms
- ESW 501 Computer Systems Principles
- ESW 541 Database Systems
- ESW 551 Distributed Computing
- ESW 553 Artificial Intelligence
- ESW 564 Computer Graphics
- ESW 566 Real Time Systems

University of Washington
College of Arts and Sciences
Department of Computer Science
Seattle, WA 98195

Degrees: BS CS, MS CS, PHD CS
Contact: Prof. Richard E. Pattis
Assistant Professor
(206) 545-3798
User ID: pattis@cs.washington.edu

Update: October 1988

Courses: Software Engineering (CSci 503)
Codes: G P E Y 3
Textbooks:
  - *Software Engineering Concepts* by Fairley, Richard E.
  - *The Mythical Man-Month: Essays on Software Engineering* by Brooks, Frederick P.
Tools: Turbo Pascal, UNIX C, Xerox XDE
IBM PC/AT
MicroVAX II
VAX 8550
Xerox Dandelion
Mesa

Washington State University
College of Sciences and Arts
Department of Computer Science
Pullman, WA 99164

Degrees: BS, MS, PHD

Contact: Dr. David B. Benson
Professor
(509) 335-2706

Update: None

Courses: Software Development (CptS 422)
Codes: U P E Y 1
Textbooks:
  - *C: An Advanced Introduction* by Gehani, Narain
  - *Introducing the UNIX System* by McGilton, Henry and Morgan, Rachel
  - *Software Engineering: A Practitioner's Approach* by Pressman, Roger S.
  - *The Mythical Man-Month: Essays on Software Engineering* by Brooks, Frederick P.
  - *The UNIX C Shell Field Guide* by Anderson, Gail and Anderson, Paul
Tools: UNIX systems

Software Development Lab (CptS 423)
Codes: U P E Y 1
Textbooks:
  - *C By Dissection: The Essentials of C Programming* by Kelley, Al and Pohl, Ira
  - *Introducing the UNIX System* by McGilton, Henry and Morgan, Rachel
Tools: UNIX systems

Verification (CptS 522)
Codes: G P E Y 1
Textbooks:
  - *The Science of Programming* by Gries, David

Additional Information:
Research opportunities in system software engineering, software test concepts, distributed computing concepts, especially theory are available.
West Virginia

West Virginia College of Graduate Studies (WVCOGS)
Engineering and Science Division
Information Systems
Institute, WV 25112

Degrees: MS
Contact: Prof. Robert N. Hutton
         Associate Professor
Update: May 1987

Courses: Systems Analysis Techniques (IS 605)
         Codes: G N R Y 5
         Textbooks: Structured Analysis
                     by Yourdon, Edward N.

System Design (IS 610)
Codes: G P R Y 6
Textbooks: Computer Information Systems Development: Design and Implementation
            by Adams, Powers, and Mills
Tools: VM/CMS
       VAX

Software Engineering Principles (IS 625)
Codes: G P E Y 4
Textbooks: Software Engineering with Ada
           by Booch, Grady
Tools: VAX Ada

Ada Programming (IS 525)
Codes: B N E Y 4
Textbooks: Programming in Ada
           by Barnes, John Gilbert Presslie
Tools: VAX Ada

West Virginia University
Department of Statistics and Computer Science
Program in Computer Science
Morgantown, WV 26506

Degrees: BS, MS, PHD
Contact: Dr. Donald F. Butcher
         Professor and Chairman
         (304) 293-3607
         User ID: dfb@b.cs.wvu.wvnet.edu
         Network: Internet
Update: February 1990

Courses: Software Engineering (CS 275)
         Codes: U P E Y 2
         Textbooks: Software Engineering
                     by Sommerville, Ian
         Tools: VAX

For an explanation of course codes, see page 19.
Ada

**Ada with Software Engineering** (CS 291/391)

**Codes:** B P E Y 3  
**Textbooks:** *Software Engineering with Ada*  
by Booch, Grady  
**Tools:** Digital Ada  
VAX 11/780 under VMS

**Principles of Software Development** (CS 170)

**Codes:** U P E Y 5  
**Tools:** PL/I optimizing compiler on VAX PL/I  
PL/I optimizing compiler in IBM  
IBM 3081  
VAX 11/780  
PL/I and system utilities

**Software Engineering in Data Communications** (CS 350)

**Codes:** G P E Y 4  
**Tools:** ALSYS Ada, IBM PC Assembler, Lattice C, RT-11 Assembler, VAX UNIX C  
IBM PC/AT  
IBM PC/XT  
IBM PCs  
PDP 11/23s  
VAX 11/750  
Assembly

**Systems Analysis** (CS 270)

**Codes:** U P E Y  
**Textbooks:** *Modern Structured Analysis*  
by Yourdon, Edward N.

**Additional Information:**
Courses numbered 0-99 are Freshman and Sophomore level courses. Courses numbered 100-299 are Junior and Senior level courses. Up to 4 200-level courses may count as credit towards the MS degree for graduate students. Courses numbered 300-399 are MS level courses, and courses numbered 400-499 are Ph.D. level courses. All 200-level courses have CS 1, 2, 50 and 51, a year of calculus, and a course in discrete mathematics as prerequisites.
Wisconsin

Marquette University
College of Engineering
Department of Electrical and Computer Engineering
Program in Electrical Engineering
Milwaukee, WI 53233

Degrees: BS EE, MS EE, PHD EE

Contact: Dr. Russell J. Niederjohn
Professor and Chairman
(414) 224-6820
User ID: NIEDERJOHN@MUCSD
Network: BITNET

Update: February 1990

Courses: Software Engineering (EECE-211)
Codes: G N E T 11
Tools: Pascal
       VAX

Additional Information: Other courses on compilers, advanced software, database, operating systems, and architecture are offered.

University of Wisconsin-Madison
College of Engineering
Department of Industrial Engineering
Madison, WI 53706

Degrees: MS, PHD

Contact: Prof. M. Smith
Department Chairman
(608) 262-3768

Update: October 1987

Courses: Computer Methods in Industrial Engineering (490-612-9)
Codes: G N B Y 9
Textbooks: Selected readings
Tools: Turbo Pascal
       IBM PC

University of Wisconsin-Milwaukee
School of Engineering and Applied Science
Department of Electrical Engineering and Computer Science
Milwaukee, WI 53201

Degrees: BS, MS, PHD

Contact: Dr. K. Vairavan
Chair, Computer Science

CMU/SEI-90-TR-4 For an explanation of course codes, see page 19. 147
Update: June 1988

Courses: Introduction to Software Engineering (262-536)
Codes: B P R O 8
Textbooks: Software Engineering, A Practical Approach
         by Pressman, Roger S.
         Software Engineering in C
         by Darnell, Peter A. and Margolis, Philip E.
Tools: 68000 based, VAX 11/750, MicroVAX 2000 running X11

Software Engineering Laboratory (262-438)
Codes: B P E Y 1
Textbooks: None -- project based course
Tools: VAX 11/750, 68000 based, MicroVAX 2000
       UNIX/C under X11

Additional Information:
262-536 Introduction to Software Engineering is offered twice/year.

University of Wisconsin-Stout
Mathematics Department
Applied Mathematics / Concentration in Software Development
Menomonie, WI 54751

Degrees: BS M

Contact: Prof. Bruce W. Johnston
         Professor of Computer Science
         (715) 232-2481
         User ID: Johnston@uwstout
         Network: BITNET

Update: February 1990

Courses: Software Engineering (354-448)
Codes: U P B T 6
Textbooks: Software Engineering
          by Sommerville, Ian
          Software Engineering with Ada
          by Booch, Grady
Tools: VAX and Zenith 286 PCs running Ada with Telesoft and Meridian compilers
Wyoming

University of Wyoming
College of Arts and Sciences
Computer Science Department
Program in Computer Science
Laramie, WY 82071

Degrees: BS CS, BA CS, BS MIS, MS CS, PHD CS

Contact: Prof. John Rowland
(307) 766-6475

Update: September 1988

Courses:

Software Engineering (COSC 684)
Codes: B P O B 1
Textbooks: Software Engineering
by Sommerville, Ian
Tools: Ada on VAX 8800
PC
VAX 11/785
VAX 8800

Software Engineering Management (COSC 884)
Codes: G P O B 1
Textbooks: Managing the Software Process
by Humphrey, W.S.
Tools: Ada
VAX 8800

Software Engineering Laboratory (COSC 685)
Codes: B P O B 1

Software Management Laboratory (COSC 885)
Codes: G P E B

Additional Information:
COSC 885 Software Management Laboratory is pending. It would be operated jointly with the Software Engineering Laboratory; members of this class would act as team leaders.
Australia

Victoria

Royal Melbourne Institute of Technology
Information Technology Division
Melbourne, VC 3001 Australia

Degrees: BS CS, MS CS

Contact: Prof. Anthony Y. Montgomery
Head
660-2943
User ID: aym%goanna.oz@uunet.uu.net

Update: March 1990

Courses:

**Software Engineering 1** (CS280)
Codes: U X R X 1

**Software Engineering 2** (CS381)
Codes: U X E X 1
Textbooks: *Models and Measurements for Quality Assessment of Software* by Mohanty, S.N.

**Software Engineering 3** (CS 387)
Codes: U X E X 1
Textbooks: *The Mythical Man-Month: Essays on Software Engineering* by Brooks, Frederick P.
Canada

Alberta

The University of Alberta
School of Science
Department of Computing Science
Edmonton, AB T6G 2H1 Canada

Degrees: BS, MS, PHD

Contact: Dr. Paul Sorenson
Chairman

Update: December 1989

Courses: Software Engineering (CMPUT 401)
Codes: U P R T 4
Textbooks: Software Engineering Concepts
by Fairley, Richard E.
Tools: Modula-2, Pascal
Macintosh
Sun workstations (UNIX OS)

Interactive Programming Environments (CMPUT 652)
Codes: G P E B 3
Textbooks: Interactive Programming Environments
by Barstow, David R., Shrobe, Howard E., and Sandewall, Erik
Tools: Cornell program synthesizer generator, Smalltalk
VAX systems (UNIX OS)

Software Testing (CMPUT 501)
Codes: G P E B 3
Textbooks: Computer Program Testing
by Chandrasekaran, B. and Radicchi, Sergio
Software Testing Techniques
by Beizer, Boris
Tools: VAX systems (UNIX OS)

Specification and Verification (CMPUT 508)
Codes: G P E Y 3
Textbooks: Communicating Sequential Processes
by Hoare, C.A.R.
The Logic of Programming
by Hehner, E.C.
The Science of Programming
by Gries, David
Tools: VAX computer systems (UNIX OS)
Various specification languages
British Columbia

University of Victoria
School of Arts and Sciences
Department of Computer Science
Victoria, BC V8W 2Y2 Canada

Degrees: BS, MS

Contact: Dr. Daniel Hoffman
Assistant Professor
(604) 721-7222

Update: June 1987

Courses: Software Engineering (CSC 365)
Codes: U P R T 6
Textbooks: The Mythical Man-Month: Essays on Software Engineering
by Brooks, Frederick P.
Tools: C, Pascal on Unix 4.2
Pyramid
VAX 11/780

Implementation of Software Engineering Methods
Codes: B P E Y 3
Tools: C
Pyramid
Sun
VAX

Additional Information:
Software Engineering/Education Cooperative Project is a joint project with IBM Canada. It's aim is to advance the state of the art in educational software.
Nova Scotia

Acadia University
Jodrey School of Computer Science
Department of Computer Science
Wolfville, NS B0P 1X0 Canada

Degrees: BCS, MS

Contact: Dr. Leslie H. Oliver
Professor and Director
(902) 542-2201 x331
User ID: oliver@acadiau.ca
Network: BITNET

Update: October 1988

Courses: **Software Engineering** (Comp 3653)
Codes: U P B Y 4
Textbooks: *Software Engineering: A Practitioner’s Approach*
by Pressman, Roger S.
Tools: Turbo Pascal, UNIX C
PC-Compatibile
Sun
Excelerator

Additional Information:
Acadia University also offers degrees in BCS H, BCSS Software, and BCSS Business Data Processing.
Ontario

Queen's University
Faculty of Arts and Science
Department of Computing and Information Science
Kingston, ON K7L 3N6 Canada

Degrees: BS, MS

Contact: Dr. David A. Lamb
Assistant Professor
(613) 545-6067
User ID: dalamb@qucis.wiscvm
Network: BITNET

Update: June 1987

Courses: Modules and Specifications (CISC 322)
Codes: U P E Y 2

Software Engineering (CISC 422/CISC 838)
Codes: B P E Y 4
Textbooks: Software Engineering: Planning for Change
by Lamb, David
Tools: IBM Pascal/VS
IBM 3081 under VM/CMS

Additional Information:
As a senior thesis, computing majors take CISC-499, a course where
(working by themselves, supervised by a faculty member) they complete
a substantial programming project.

University of Ottawa
Faculty of Science
Department of Computer Science
Program in Computer Science
Ottawa, ON K1N 9B4 Canada

Degrees: BS, MCS

Contact: Dr. H. Ural
Associate Professor
(613) 564-5092
User ID: HURSL@UOTTAWA
Network: BITNET

Update: October 1988

Courses: Software Engineering I (CSI 3111)
Codes: U P R Y 4
Textbooks: Software Engineering: A Practitioner's Approach
by Pressman, Roger S.
Software Engineering Concepts
by Fairley, Richard E.
Tools: Pascal, Ada, Prolog

Software Engineering II (CSI 4112)
Codes: U P R Y 6
Textbooks: 
Software Engineering: A Practitioner’s Approach  
by Pressman, Roger S.
Software Engineering Concepts  
by Fairley, Richard E.
Tools: 
VAX 750
C, Ada

Software Testing: Theory and Practice (CSI 5111)
Codes: G N E Y 7
Textbooks: Selected readings

Software Engineering (CSI 5112)
Codes: G N E Y 5
Textbooks: Selected readings
Tools: 
VAX 750
Modula II, Ada

Additional Information:
The University of Ottawa also offers the following programs:
B.Sc. Major and Honours with General Computer Science
B.Sc. Major and Honours with Information and Management System
Software Engineering (offered in the Winter and Summer terms)
Software Engineering I (offered twice a year)
courses in Ada (Ada Language Concepts, CSI 2161) and Modula-2
(Modula-2 Language Concepts, CSI 2169) are also offered.

University of Waterloo
Faculty of Mathematics
Department of Computer Science
Waterloo, ON N2L 3G1 Canada

Degrees: BM, MM, PHD

Contact: Dr. David Taylor
(519) 888-4432
User ID: dtaylor@saugeen.waterloo.edu

Update: October 1988

Courses: 
Applications Software Engineering (CS 430)
Codes: U P E Y 1
Textbooks: Software Engineering: A Practitioner’s Approach, 2nd ed.
by Pressman, Roger S.

Business System Analysis (CS 432)
Codes: U P E O 1
Textbooks: Information Systems Analysis: With an Intro to 4th Generation Technologies
by Hall, V.J. and J.W. Mosevich
Tools: IBM PC

Software System Design and Implementation (CS 446 and CS 646)
Codes: B P E T 1
Textbooks: Software Engineering: A Practitioner’s Approach, 2nd ed.
by Pressman, Roger S.

Techniques in Systems Analysis (CS 482)
Codes: U P E T 1
Textbooks: Information Systems Analysis: With an Intro to 4th Generation Technologies
by Hall, V.J. and J.W. Mosevich

**Additional Information:**
Applications Software Engineering and Techniques in Systems Analysis are offered in the Fall and Spring terms.
Quebec

Concordia University
Faculty of Engineering and Computer Science
Department of Computer Science
Montreal, PQ H3G 1M8 Canada

Degrees: BCS, MCS, PHD

Contact: Prof. Pankaj Goyal
Associate Professor
(514) 848-3018

Update: March 1990

Courses: Software Engineering (COMP 354)
Codes: U P R T 2
Textbooks: Software Engineering Concepts
by Fairley, Richard E.
Tools: Sun-C, Sun-Pascal
Sun workstations (network)

Additional Information:
We offered an Ada-Language Laboratory during the 1987-88 academic year.
Several compilers were under evaluation.

McGill University
School of Computer Science
Montreal, PQ H3A 2K6 Canada

Degrees: MS, PHD

Contact: Prof. Nazim H. Madhavji
Professor
(514) 398-7073

Update: None

Courses: Advanced Topics (Software Engineering) (308-762A)
Codes: G P E Y 5
Textbooks: Software Development: A Rigorous Approach
by Jones, C.B.
Software Engineering
by Sommerville, Ian
Software Engineering Environments
by Hunke, H.
Software Engineering with Modula-2 and Ada
by Wiener, Richard and Sincovec, Richard
Tools: Cambridge Modula-2, Modula-2/68, Powell Modula-2
Sun 3
VAX 11/780

Advanced Topics (Programming Environments) (308-767B)
Codes: G P E Y 3
Textbooks: Interactive Programming Environments
by Barstow, David R., Shrobe, Howard E., and Sandewall, Erik
Tools: Cambridge Modula-2, Modula-2/68, Powell Modula-2
Additional Information:
The School offers research study (M.Sc. and Ph.D.) in software engineering as well as offering software engineering projects for masters students.

University of Quebec at Montreal
Computer Science
Departement of Mathematics and Computer Science
Montreal, QC H3C 3P8 Canada

Degrees: PHD M/CS, MS M/CS/CIS, BS M/CS/CIS

Contact: Dr. Philippe J. Gabrini
Head, Computer Science Section
(514) 987-3087
User ID: R23414@VQAM.bitnet
Network: BITNET

Update: March 1990

Courses: Software Engineering (INF 5050)
Codes: U P R B 5
Textbooks: Software Engineering by Sommerville, Ian
Tools: Modula-2
Sun workstations, PCs

Software Engineering I (INF 7410)
Codes: G N E Y 4
Textbooks: Selected readings
Tools: Modula-2
CASE tools

Software Engineering II (INF 7420)
Codes: G N E Y 4
Textbooks: Selected readings
Tools: Modula-2
CASE tools
Saskatchewan

University of Regina  
Faculty of Science  
Department of Computer Science  
Regina, SK S4S 0A2 Canada

Degrees: BA, BS, MS

Contact:  
Dr. R. B. Maguire  
Department Head  
(306) 584-4632

Update: October 1988

Courses:  

Business Information Systems (CS 270)  
Codes: U P R T 11  
Textbooks: Elements of Systems Analysis, 4th ed.  
by Gore, Marvin and Stubbe, John W.  
Tools: IBM PC AT  
Excelerator InTech

Advanced Systems Analysis and Design (CS 372)  
Codes: U P E Y 4  
Textbooks: Introduction to Systems Analysis and Design: A Structured Approach  
by Kendale, Penny A.  
Tools: Unix C  
Berkeley 4.2 Unix on VAX 750  
C programming language

Project Management for Data Processing Applications (CS 373)  
Codes: U P E T 5  
Textbooks: Managing Computer Resources, 2nd ed.  
by Hussain and Hussain

Advanced Topics in System Software (CS 430)  
Codes: U P E O  
Textbooks: Distributed Databases, Principles & Systems  
by Stefano, Ceri, Giuseppe and Pelagatti

Advanced Topics in Database Systems (CS 470)  
Codes: U P E Y  
Textbooks: An Introduction to Database Systems, 3rd ed.  
by Date, C.J.  
Tools: INGRES, DB2/SQL

Introduction to Database Systems and Document Storage and Retrieval (CS 375)  
Codes: U P E T  
Textbooks: The Database Book  
by Loomis, Mary E.S.  
Tools: INGRES

Additional Information:  
CS 430 is offered every other year.
Mexico

Instituto Technologico y de Estudios Superiores de Monterrey
Graduates and Research
Informatics Graduate Program
Monterrey, NL  64849  Mexico

Degrees:  MS

Contact:  Dr. Carlos Scheel
58-20-00 x5011
User ID:  SCHEEL@TECMTYVM
Network:  BITNET, Internet

Update:  March 1990

Courses:  Software Engineering (SI-151)
Codes:  G P R Y 4
Textbooks:  Software Engineering: A Practitioner’s Approach
by Pressman, Roger S.
Software Engineering Concepts
by Fairley, Richard E.
Tools:  Modula-2, C, 4th Dimension
VAX, MICRO-VAX, IBM 4381
IBM PS/2 Model 50/80
ALTOS

Advanced Programming Techniques (SI-150)
Codes:  G P R Y 4
Textbooks:  Fourth Generation Languages, vol. I-III
by Martin, James
Interactive Programming Environments
by Barstow and Shrobe
Tools:  Oracle, Linc, IEW
VAX 3681, UNISYS A3, IBM 4381

Programming Design (CB-150)
Codes:  G N R B 4
Textbooks:  Programming by Design
by Miller and Miller
Software Tools in Pascal
by Kernighan, Brian and Plauger
Tools:  Pascal, C
IBM PS/2 Model 50/80
IBM 4381

Information Engineering (SI-154)
Codes:  G P R Y 1
Textbooks:  Information Engineering
by Martin, J. and Finkelstein, C.
Strategic Data-Planning Methodologies
by Martin, J.
Tools:  C, Pascal, Oracle
IBM 4381, IBM PS/2 Model 50/80
VAX
United Kingdom

Scotland

University of Stirling
Department of Computing Science
Stirling, SL FK9 4LA United Kingdom

Degrees: BS, MS

Contact: Dr. David Budgen
(44) 786 73171
User ID: db@uk.ac.stir.cs
Network: JANET

Update: March 1990

Courses: Software Engineering (31W7)
Codes: UNBY7
Textbooks: Software Engineering, 3rd Edition
by Sommerville, Ian
The Craft of Software Engineering
by Macro, Allen and Buxton, John
The Mythical Man-Month: Essays on Software Engineering
by Brooks, Frederick P.
Tools: CASE Tools: Teamwork

Formal Specification (SE2)
Codes: GNRY3
Textbooks: Introduction to Discrete Mathematics for Software Engineering
by Denvir, Tim
Tools: 3B15 Computer
HP UNIX Workstations

Additional Information:
Our degree programmes are fairly structured, and so we can put a software engineering bias into many of the course units that are not specifically concerned with software engineering themes (e.g., the course unit on concurrency). The two course units listed are those that concentrate on specific areas of software engineering itself.

University of Strathclyde
Faculty of Science
Department of Computer Science
Program in Computer Science
Glasgow, SL G1 1XH United Kingdom

Degrees: BCS, BIE

Contact: Dr. Robin B. Hunter

Update: April 1990

Courses: Software Engineering (52.302)
Codes: UPRY7
Textbooks: *Software Engineering*
by Sommerville, Ian

Tools: Pascal
Sequent
Ada

**Systems Analysis and Design** (52.304)
Codes: UNRY16
Textbooks: *Basic Systems Analysis*
by Daniels, Alan and Yeates, Donald
*Information Systems Design*
by Brookes, Cyril H. P.
*Software Engineering with Systems Analysis and Design*
by Steward, Donald V.
*Systems Analysis and Design: A Structured Approach*
by Davis, William S.
*Systems Analysis and Design for Computers*
by Millington, Ellis, Horwood

**Software Engineering** (52.415)
Codes: UPEY6
Textbooks: *Software Engineering*
by Sommerville, Ian

**Formal Methods** (52.415)
Codes: UN E Y 11
Textbooks: *Program Verification Using Ada*
by McGettrick, Andrew D.
Tools: Sequent
Ada/Anna

**Systems Design**
Codes: GNRY6
Textbooks: *Introduction to Systems Analysis and Design: A Structured Approach*
by Kendall, Penny A.
Tools: Turbo Pascal
IBM PC

**Software Engineering**
Codes: GNEY6
Textbooks: *Software Engineering*
by Sommerville, Ian
Tools: Ada, Pascal
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