IEEE Computer Society and ACM Software Engineering Coordinating Committee (SWECC)

Overview

January 29 1999

Leonard L. Tripp, Chair
Dennis J. Frailey, Co-chair

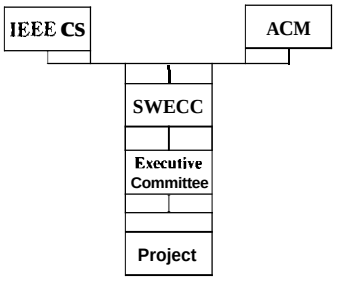
Contents

Charter

- Foster and maintain software engineering as a professional computing discipline

  - identify and validate the body of knowledge
  - develop a code of ethics for practitioners
  - develop a code of professional practice
  - establish and validate performance norms,
  - develop a model curriculum
  - recommend curriculum assessment criteria

Organization



SWECC Executive Committee

- Mark Ardis
- Doris Carver
- Dennis Frailey, co-chair
- Linda Northrop
- Karl Reed

Leonard Tripp, chair

Background

- The previous committee was formed in 1993.
- Accomplishments
  - Conducted pilot to demonstrate feasibility of developing a body of knowledge
  - Developed a code of ethics
  - Developed model accreditation criteria

Accreditation Criteria

- Quality and performance of student and graduates
- Educational objectives
- Program outcomes and assessments
- Professional component
- Faculty
- Facilities
- Institutional support
- Program criteria

Licensing Process

The process is similar in all States of the U.S.

BS Degree from an ABET Accredited Engineering Program

Morning Exam in Chemistry, Ethics Computers, Math, States Dynamics Electric Circuits Thermodynamics etc

Fundamentals of Engineering Examination

Afternoon Exam in Civil Chemical Electrical Industrial Mechanical or General Engineering

4 years Engineering Practice

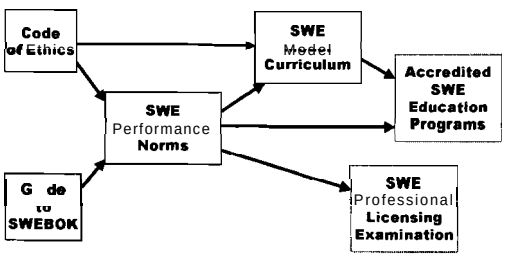
Apply for License

PE Exam in Specialty

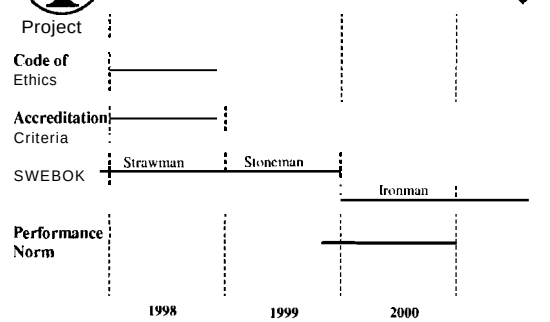
Agricultural Chemical Civil Control Electrical Fire Industrial Manufacturing Mechanical Metallurgical Mining Nuclear Petroleum or Structural

(Source Dennis Fraley)

Context



Schedule



Code of Ethics

- PUBLIC - Soltware engineers shall act consistently with the public interest.
- CLIENT AND EMPLOYER - Soltware engineers shall act in a manner that is in the best interests of their client and employer and thal is consistent with the public interest.
- PRODUCT - Software engineers shall ensure that their products and related modifications meet the highest prolessional standards possible.
- JUDGMENT - Software engineers shall maintain integrity and independence in their prolessional judgment.

Code of Ethics

- MANAGEMENT - Soltware engineering managers and leaden shall subscribe to and promote an ethical approach to the management of software development and maintenance.
- PROFESSION - Soltware engineers shall advance the integrity and reputation of the prolession consistent with the public interest.
- COLLEAGUES - Soltware engineers shall be lair to and supportive of their colleagues.
- SELF - Software engineers shall partieipale in lifelong learning regarding the practice of their prolession and pmmote an ethical approach to the practice of the profession.

Body of Knowledge Project

- Project Objectives
- Intended Audience
- Underlying Principles of the Project
  Project Approach
  Project Scope
  Project Process
  Initial Set of Knowledge Areas

Project Objectives

- Characterize the contents of the Software Engineering Body of Knowledge
  Provide a topical access to the Software Engineering Body of Knowledge
- Promote a consistent view of software engineering worldwide

Project Objectives

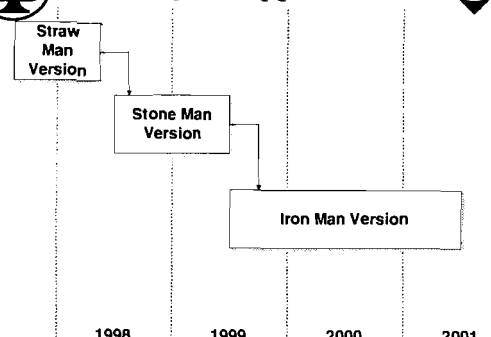
- Clarify the place of, and set the boundary of, software engineering with respect to other disciplines such as computer science, project management, computer engineering and mathematics
- Provide a foundation for curriculum development and individual certification and licensing material

intended Audience

Public and private organizations
Practicing software engineers

- Makers of public policy
  Professional societies
- Software engineering students
  Educators and trainers

Project Approach



Project Principles

- ***Transparency:*** the development process is itself published and fully documented
- ***Consensus-building:*** the development process is designed to build, over time, consensus in industry, among professional societies and standards-setting bodies and in academia

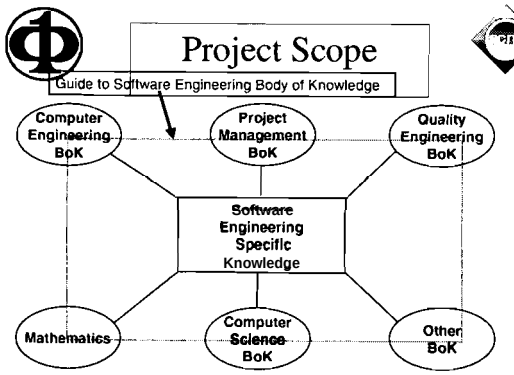
Project Team

- Editorial team
- Industrial Advisory Board
  Knowledge Area Specialists
- Reviewers
- Members of the software engineering community

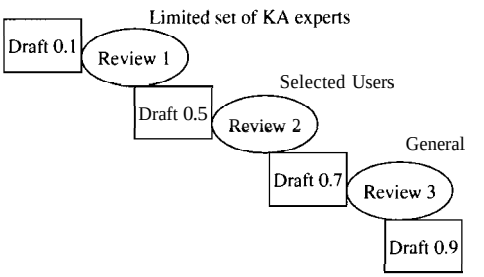
Industry Advisory Board

- Provide input to ensure relevance to various audiences
- Review and approve strategy and deliverables
  Oversee development process
- Assist in promoting the Guide to the Software Engineering Body of Knowledge
  Lend credibility to the project

Project Scope



Project Process



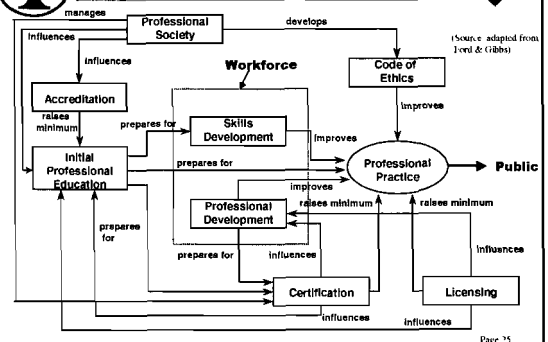
Knowledge Areas (1199)

- Software Requirements Analysis
  Software Design
- Software Construction
- Software Testing
- Software Maintenance

Knowledge Areas (1/99)

- Software Configuration Management
- Software Quality Analysis
- Software Engineering Management
- Software Engineering Infrastructure
- Software Engineering Process

Components of a Profession



(Source: adapted from Ford & Gibbs)

Summary

- **Transition to new committee structure complete**
- **SWEBOK project endorsed by SWECC**
- **Acquisition of funds ahead of schedule**
- **SWEBOK project on schedule**
- **Need help with:**
  - **Review by licensing authority**
  - **Contacts with NCEES**