

Chapter 2: Licensing of Software Engineers and Safety Critical Systems

Review Sheet

The following are points of information that the participant should be familiar with on completion of the chapter.

1. Software engineering is a field that includes the knowledge, tools, and methods for defining software requirements and software design, writing, testing, and maintenance.
2. Software development is one component of computer system development.
3. All aspects of computer system development, including software development, require safety measures.
4. Some of the reasons for the licensing software engineers include a higher quality of work and greater accountability.
5. Those opposed to licensing argue that software engineering is not a field of engineering, that licensing would increase the number of lawsuits, and that it would not necessarily improve on the quality of work.
6. The two major professional organizations involved in the issue of licensing of software engineers, the ACM and IEEE, disagree on the issue of licensure.
7. There is a comprehensive exam in existence at present for other types of engineers to get licensed; this exam does not reflect the subject of software.
8. Safety critical systems are computer systems in which malfunction can affect people's lives.
9. Ariane 5 and Therac-25 are two case studies of safety critical systems in which software malfunction caused significant damage and/or deaths of innocent people.

10. Each person should develop a stance with regard to whether software engineers should be licensed based on the information and case studies presented.