**Handouts of Lecture 10 Professional Practices (IT)**

**Lecture Title: Professional Ethics (Cont.)**

**PRINCIPLE 3: PRODUCT**

Software engineers shall ensure that their products and related modifications meet the

Highest professional standards possible. In particular, software engineers shall, as appropriate:

***3.01 Strive for high quality***, acceptable cost and a reasonable schedule, ensuring significant tradeoffs are clear to and accepted by the employer and the client, and are available for consideration by the user and the public.

***3.02*** Ensure proper and achievable goals and objectives for any project on which they work or propose.

***3.03*** Identify, define and address ethical, economic, cultural, legal and environmental issues related to work projects.

***3.04*** Ensure that they are qualified for any project on which they work or propose to work by an appropriate combination of education and training, and experience.

***3.05*** Ensure an appropriate method is used for any project on which they work or propose to work.

***3.06*** Work to follow professional standards, when available, that are most appropriate for the task at hand, departing from these only when ethically or technically justified.

***3.07*** Strive to fully understand the specifications for software on which they work.

***3.08*** Ensure that specifications for software on which they work have been well documented, satisfy the users’ requirements and have the appropriate approvals.

***3.09*** Ensure realistic quantitative estimates of cost, scheduling, personnel, quality and outcomes on any project on which they work or propose to work and provide an uncertainty assessment of these estimates.

***3.10*** Ensure adequate testing, debugging, and review of software and related documents on which they work.

***3.11*** Ensure adequate documentation, including significant problems discovered and solutions adopted, for any project on which they work.

***3.12*** Work to develop software and related documents that respect the privacy of those who will be affected by that software.

***3.13*** Be careful to use only accurate data derived by ethical and lawful means, and use it only in ways properly authorized.

***3.14*** Maintain the integrity of data, being sensitive to outdated or flawed occurrences.

***3.15*** Treat all forms of software maintenance with the same professionalism as new development.

**PRINCIPLE 4: JUDGMENT**

Software engineers shall maintain integrity and independence in their professional judgment.

In particular, software engineers shall, as appropriate:

***4.01*** Temper all technical judgments by the need to support and maintain human values.

***4.02*** Only endorse documents either prepared under their supervision or within their areas of competence and with which they are in agreement.

***4.03*** Maintain professional objectivity with respect to any software or related documents they are asked to evaluate.

***4.04*** Not engage in deceptive financial practices such as bribery, double billing, or other improper financial practices.

***4.05*** Disclose to all concerned parties those conflicts of interest that cannot reasonablybe avoided or escaped.

***4.06*** Refuse to participate, as members or advisors, in a private, governmental or professional body concerned with software related issues, in which they, their employers or their clients have undisclosed potential conflicts of interest.

**PRINCIPLE 5: MANAGEMENT**

Software engineering managers and leaders shall subscribe to and promote an ethical approach to the management of software development and maintenance. In particular, those managing or leading software engineers shall, as appropriate:

***5.01*** Ensure good management for any project on which they work, including effective procedures for promotion of quality and reduction of risk.

***5.02*** Ensure that software engineers are informed of standards before being held to them.

***5.03*** Ensure that software engineers know the employer’s policies and procedures for protecting passwords, files and information that is confidential to the employer or confidential to others.

***5.04*** Assign work only after taking into account appropriate contributions of education and experience tempered with a desire to further that education and experience.

***5.05*** Ensure realistic quantitative estimates of cost, scheduling, personnel, quality and outcomes on any project on which they work or propose to work, and provide an uncertainty assessment of these estimates.

***5.06*** Attract potential software engineers only by a full and accurate description of the conditions of employment.

***5.07*** Offer fair and just remuneration.

***5.08*** Not unjustly prevent someone from taking a position for which that person is suitably qualified.

***5.09*** Ensure that there is a fair agreement concerning ownership of any software, processes, research, writing, or other intellectual property to which a software engineer has contributed.

***5.10*** Provide for due process in hearing charges of violation of an employer’s policy or of this Code.

***5.11*** Not ask a software engineer to do anything inconsistent with this Code.

***5.12*** Not punish anyone for expressing ethical concerns about a project.

**PRINCIPLE 6: PROFESSION**

Software engineers shall advance the integrity and reputation of the profession consistent with the public interest. In particular, software engineers shall, as appropriate:

***6.01*** Help develop an organizational environment favorable to acting ethically.

***6.02*** Promote public knowledge of software engineering.

***6.03*** Extend software engineering knowledge by appropriate participation in professional organizations, meetings and publications.

***6.04*** Support, as members of a profession, other software engineers striving to follow this Code.

***6.05*** Not promote their own interest at the expense of the profession, client or employer.

***6.06*** Obey all laws governing their work, unless, in exceptional circumstances, such compliance is inconsistent with the public interest.

***6.07*** Be accurate in stating the characteristics of software on which they work, avoiding not only false claims but also claims that might reasonably be supposed to be speculative, vacuous, deceptive, misleading, or doubtful.

***6.08*** Take responsibility for detecting, correcting, and reporting errors in software and associated documents on which they work.

***6.09*** Ensure that clients, employers, and supervisors know of the software engineer’s commitment to this Code of ethics, and the subsequent ramifications of such commitment.

***6.10*** Avoid associations with businesses and organizations which are in conflict with this code.

***6.11*** Recognize that violations of this Code are inconsistent with being a professional software engineer.

***6.12*** Express concerns to the people involved when significant violations of this Code are detected unless this is impossible, counter-productive, or dangerous.

***6.13*** Report significant violations of this Code to appropriate authorities when it is clear that consultation with people involved in these significant violations is impossible, counter-productive or dangerous.

***Reference:***

***Lecture topic: Professional Ethics slides***

***Gao, Y. (2012). Ethics for the Information Age by Michael J. Quinn. World Libraries, 20(1).***