

## Teaching Tips: OSE3 - Introduction to Software Engineering Ethics

1. The OSE3 module is appropriate for students that have completed (or almost completed) a first course in programming. They should have had an introduction to software engineering, similar to the content of module OSE1, and some knowledge about software engineering professional issues, similar to the content of module OSE2.
2. The lecture slides include a listing of all the elements of each of the eight principles of the “Software Engineering Code of Ethics and Professional Practice”. I would not suggest reading each of these aloud to the class, but rather picking one or two elements from each area and posing a question to the class about the element and engaging in a class discussion about the principles. Here are some example questions:
  - a. PUBLIC
    - > 1.01 - How do you think the term “Accept full responsibility for their own work” should be interpreted if one is working on a team project?
    - > 1.05 - What is meant by “matters of grave public concern caused by software”?
  - b. CLIENT & EMPLOYER
    - > 2.02. - Does this apply to you?
    - > 2.09. - What would be an example of promoting an “interest adverse to their employer or client”?
  - c. PRODUCT
    - > 3.03. – If you had to “Identify, define and address” these issues for a program you were assigned, how would you go about this task?
    - > 3.08. – What do you do if you are working on a project where someone else has the responsibility for ensuring that the specifications are “well documented, satisfy the users’ requirements and have the appropriate approvals”?
    - > 3.10. – What is “adequate testing, debugging, and review of software and related documents”?
  - d. JUDGMENT
    - > 4.03. – What is meant by “professional objectivity”?
    - > 4.06. – What is an example of a “potential conflict of interest” for a software engineer?
  - e. MANAGEMENT
    - > 5.05. - What is an “uncertainty assessment”?
    - > 5.07. - Who should determine whether remuneration is “fair and just”?
  - f. PROFESSION

- > 6.01. - What can a software engineer do to “Help develop an organizational environment favorable to acting ethically”?
  - > 6.02. - How could one “Promote public knowledge of software engineering”?
  - g. COLLEAGUES
    - > 7.02. – In what ways can a software engineer “Assist colleagues in professional development”?
  - h. SELF
    - > 8.01. - How can software engineers “Further their knowledge ...”?
    - > 8.07. – Is there such a thing as a “relevant prejudice”?
3. Here are some comments and suggestions for the case study exercise:
- a. Teams of three or four seem to work best.
  - b. Where possible, form teams of students who have not worked together before.
  - c. One approach that has been used, with some success, is to form teams of four and assign the following roles for the team members:
    - > team leader/facilitator
    - > pro-ethical – argues behavior is ethical
    - > con-ethical - argues behavior is unethical
    - > judges/presenter – judges whether the behavior is ethical or not, and reports on the team’s discussion and deliberation
  - d. Class discussion of the case, after a team reports its results, is very valuable. The class usually finds this interesting and it highlights key points about the code discussed in the lecture.
  - e. Suggest that the teacher not take a stand on the ethics of a case – certainly, not until the teams have presented their results and the class has discussed the case.