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| DEPARTMENT OF COMPUTER SCIENCE |
| **Unit Code & Name** | CSE 2423 Professional Practices & Ethics In Computing |
| **Prerequisite** | None |
| **Cohort** | BSE Y4S2, Jan. – Apr. 2020 |
| **Instructor** | Yvette Otukana |
| **Contact** | yotukana@gmail.com |

**Purpose;**

To enable the student appraise ethical issues relating to computing as a professional discipline.

**Learning outcomes;**

By the end of this course unit, the student should be able to:

1. Identify key ethical concerns of software engineers.
2. Identify issues of professional conduct in computing case studies.
3. Apply ethical procedures and behaviors in an organization in relation to software systems.

**Course Outline;**

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| **Topic** |
| **Introduction:** 1. Computing as Technology and Human Values
2. Computer related risks
3. Ethics defined
4. Ethical views
* Ethical relativism
* Utilitarianism
* Deontological Theories
1. Case Study
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| **Computing Professionals:** 1. Definition of Profession
2. Characteristics of a profession
3. The system of professions
4. Personal skills for computing professionals
5. Different kinds of responsibility in computing:
* Causal
* Role
* Legal
* Moral
1. Responsibilities of computing professionals
2. Case Study
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| **Ethical Guidelines for Computer Professionals:**1. Functions of professional code of ethics
2. Professional codes:
* IEEE-CS/ACM Software Engineering Code of Ethics and Professional Practice
* ACM
* CIPS – Canadian Information Processing Society
1. Characteristics of Code of Ethics
2. Additional ethical guidelines for computing professionals not highlighted in the professional codes.
3. Ethical Decision making for Computing Professionals – ethical dillemma
4. Case study
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| **Computer Misuse:**1. Forms of computer misuse
2. Computer hacking
3. Ethics of computer hacking
4. Mitigating computer misuse
5. Kenyan & International Laws governing computer use/misuse
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| **Privacy and Data Protection:**1. Privacy and data processing
2. Non-Obvious Relationship Awareness (NORA)
3. NORA and Privacy
4. Kenyan & International legislations on privacy
5. Case Study
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| **Software and Property**1. Intellectual property
2. Interllectual property protection: Copyright , Trade marks/ secrets, Patents
3. Software Copyright laws in kenya
4. Obtaining patent protection in kenya
5. Propritary vs free software
6. Case Study
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| **Overview of Software safety:**1. Safety vs reliability
2. Software safety
3. Safety critical software and function
4. Hazard analysis and categorization
5. Software fault tree
6. Safety verification and validation
7. Software failure modes: fail safe, fail operational, fail soft
8. Safety design principles
9. Case Study
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| **Assignment Presentation** |

**Teaching methodologies;**

Seminar Presentaions, Class discussions, Group activities, case studies

**Instruction materials/equipment;**

1. LCD Projector
2. Whiteboard

**Course Assessment;**

Continuous Assessment Tests 30%

End of Semester Examination 70%

**Course Textbooks**

1. Baase, S. & Henry, T. M (2017)*A Gift of Fire: Social, Legal, and Ethical Issues for Computing and the Internet*(5th ed.) Prentice-Hall; ISBN-10: 9780134615271
2. Quinn, M. J.(2016) *Ethics for the Information Age* (7th ed.) Pearson; ISBN-10: 9780134296548
3. Tavani, H. T. (2015) *Ethics and Technology: Controversies, Questions, and Strategies for Ethical Computing* (5th ed.) Wiley; ISBN-10: 1119355311

**Course Journals**;

1. Advances in Computational Mathematics ISSN 1019-7168
2. Advances in data Analysis and Classification ISSN1 1862-5347
3. Annals Of software Engineering ISSN 1022-7091

**Reference Textbooks;**

1. Bott, F.(2014) *Professional Issues in Information Technology*(2nd ed.) The British Computer Society; ISBN-10: 1780171803
2. Kizza, J. M. (2016) *Ethics in Computing: A concise module* (1st ed.) Springer; ISBN-10: 3319291041
3. O'Keefe, K. & Brien, D. (2018*) Ethical Data and Information Management: Concepts, Tools and Methods* (1st ed.) Kogan Page; ISBN-10: 0749482044

**Reference Journals**;

1. Journal of computer science and Technology ISSN 1000-9000
2. Journal of Science and Technology ISSN 1860-4749
3. Central European Journal Of Computer Science ISSN 1896-1533