FIU211201

Engineering and Civilization

Konsep Keteknikan untuk Peradaban

BASIC INFORMATION

Course Credit	2 / 100 minutes per Week
Course Type	Required
Course Classification	General Education
Prerequisites	-

STUDENT AND LEARNING OUTCOMES

Covered Student Outcomes

Knowledge Contemporary and Issues (SK.2)

Engineering Awareness and Society (BH.2)

Professional and Ethical Responsibilities (BH.1)

Sustainable Learning (BH.3)

Learning Outcomes

LO1 Students are able to explain about the role of engineers in the civilization.

LO2 Students are able to explain about the holism epistemology within engineering.

LO3 Students are able to understand ethics and it code.

LO4 Students are able to understand Ethical code of Engineering in Indonesia.

COURSE DESCRIPTION

This course explains the soul and the role of engineering. It gives understanding of the big picture of engineering in human civilization. Also it reveals the ethical aspect of engineering.

TOPICS

1. **Forewords: Explaining about the history of Engineering Faculty. Also about understanding difference among scientists and engineers.**
2. **The contributions and importance of engineering in human civilization.**
3. **Introduction about system thinking.**
4. **Engineering Epistimologi from Social and Cultural Insight.**
5. **Engineering Epistimologi from Political and Economic Insight.**
6. **Engineering Epistimologi from Nature Perspective.**

7. Desain Principle

8. Case study: Industrial Engineering (Mechanical-Electrical-Chemical)

9. Case study: Earth Science (Geology-Geodetic)

10. Case study: Civil and Planning.

11. Case study: Energy.

12. Attitude of engineers.

13. Ethics in Engineering.

14. Vision and Mission of Engineering Faculty Graduates.

REFERENCES

[1] Anonim, 2000, Accreditation Board for Engineering and Technology

[2] Anonim, 2011, Engineering ethics in practice: a guide for engineers, The Royal Academy of Engineering, London SW1Y 5DG

[3] Hadikusumo, 2003, "Tagore, Kesatuan Kreatif" , Bentang, Yogyakarta.

[4] Harris C., Pritchard M., MICHAEL J. Rabins M.J., 2009, Engineering Ethics Concepts And Cases, Wadsworth, Cengage Learning

[5] Martin M.W. dan Schinzinger R., 2010, Introduction to Engineering Ethics, Published by McGraw-Hill

[6] Wahyudi, 2001, Sikap mental dan Etika Profesi Teknik, Buku Saku mahasiswa, Fakultas Teknik UGM