Course Code	TKU314
Course Name	Engineering Planning
Course Instructors	Avrin Widiastuti; Sasongko Pramono Hadi;
Course Type	Required
Course Classification	Engineering Topics
Credit / Contact Hour per Week	2 / 100 minutes per Week
Course Description	Engineering Planning course put forward Capstone Design Project method with case example in lecture. It is expected that after students complete this course students are able to apply and design an effective product and the principles of applicable standards in the field of engineering.
Prerequisites Courses	-
Covered Student Outcome	**Engineering Design (c)** **Effective Communication (g)** **Multidisciplinary Teamwork (h)** **Engineering Awareness and Society (j)**

Learning Outcome

No	Learning Outcome	Study Program Student Outcome
1.	Be able to identify ideas and use techniques to run preliminary design with appropriate methods	Engineering Design
2.	Capable of doing a management project in Capstone Design and executing basic management strategies	Multidisciplinary Teamwork
3.	Able to explain the concept of sustainability of an engineering work	Engineering Awareness and Society
4.	Able to compare project engineering using standard economic methods	Engineering Awareness and Society
5.	Able to explain an engineering project in relation to social and environmental aspects.	Effective Communication

Topic

1. understanding engineering design
2. engineering design process
3. determination of the object or tool needed
4. selection and decision-making
5. introduction to project management (general)
6. initial design (concept)
7. planning and design (detailed)
8. project management
9. project management process, WBS
10. Gant chart, network planning, PERT
11. TOR, technical proposal and MS Project applications
12. Engineering & Professional Ethics
13. PKM and presentation

Direct Asessment

Direct Asessment Plan	**Measured Learning Outcome**
FGD (Focus Group Discussion)	LO2
Papers	LO1,LO3,LO4
Assignments	LO1,LO3,LO5

Indirect Assesment: Questionnaire (EDOM)

References

[1] Vick, Steven G. Planning, design, and analysis of tailings dams. BiTech, 1990.

[2] Pahl, Gerhard, and Wolfgang Beitz. Engineering design: a systematic approach. Springer Science & Business Media, 2013.

[3] Arciszewski, Tomasz. Inventive Engineering: Knowledge and Skills for Creative Engineers. CRC Press, 2016.

Panduan Penyusunan Silabus

Dasar penyusunan

1. Silabus disarankan ditulis dalam Bahasa inggris agar dapat digunakan untuk keperluan ABET dan BAN
2. Learning outcome disusun dengan aturan maksimum enam learning outcome
3. Direct assessment plan meliputi
    a. Assignment (tugas)
    b. Quiz (kuis)
    c. Summative Assessment (Mid / Final Exam)

Cara pengisian:

1. Course code: diisi dengan kode mata kuliah. Kode mata kuliah bisa dilihat didokumen kurikulum
    a. Kurikulum TE http://sarjana.jteti.ugm.ac.id/media/1825/dokumen-kurikulum-2016-te-v2.pdf
    b. Kurikulum TIF http://sarjana.jteti.ugm.ac.id/media/1826/dokumen-kurikulum-2016-ti-v2-sp1.pdf
2. Course Name: nama kuliah
3. Course instructors: dosen yang memiliki kesesuaian bidang ilmu dan terlibat dalam penyusunan. Apabila lebih dari satu dosen dipisahkan dengan tanda ';' (titik koma)
4. Course Type: pilih sesuai tipe
    a. Required: wajib prodi, departemen, dan Universitas
    b. Required elective: wajib konsentrasi
    c. Elective: pilihan
5. Course classification: pilih sesuai klasifikasi konten, DTETI menganut hubungan satu mata kuliah ke satu klasifikasi saja.
    a. Basic Science & Matematika: Mata kuliah sains yang diperoleh di DTETI
    b. Engineering Topics: Mata kuliah terkait dengan Program Studi dan Keteknikan
    c. General Education: Mata kuliah yang berfokus pada soft skill dan Pengembangan karakter
6. Credit: jumlah SKS
7. Course Description: deskripsi mata kuliah.
8. Prerequisites Courses: mata kuliah yang menjadi dasar mata kuliah terdahulu
9. LO berisi detail learning outcome seperti yang sudah dijabarkan di workshop mengikuti aturan Bloom dan Student Outcome
10. Topik. Berisi aktivitas mata kuliah yang akan disampaikan dalam satu semester
11. Direct assessment meliputi pemetaan antara *assessment* yang akan dilakukan dengan LO yang akan diukur.
12. Indirect assessment mengikuti standar Universitas yakni melalui EDOM.
13. Referensi buku yang dapat dicari
    a. Pearson Education http://www.pearsoned.co.uk/bookshop/
    b. Wiley Bookshop https://www.wiley.com/WileyCDA/Section/id-352010.html
    c. Amazon di http://amazon.com

Informasi lebih lanjut: http://ridi.staff.ugm.ac.id/2018/01/14/5-cara-mudah-menyusun-learning-outcome/