國立東華大學

# 教學計劃表 Syllabus

| | | | | | |
|---|---|---|---|---|---|
| 課程名稱(中文)<br>Course Name in Chinese | 電機機械原理與控制 | | | 學年/學期<br>Academic Year/Semester | 114/2 |
| 課程名稱(英文)<br>Course Name in English | Electric Machinery and Its Control | | | | |
| 科目代碼<br>Course Code | EE__33620 | 系級<br>Department & Year | 學三 | 開課單位<br>Course-Offering Department | 電機工程學系 |
| 修別<br>Type | 學程 Program | 學分數/時間<br>Credit(s)/Hour(s) | 3.0/3.0 | | |
| 授課教師<br>Instructor | /謝欣然 | | | | |
| 先修課程<br>Prerequisite | | | | | |

課程描述 Course Description

Study on fundamentals of electric machines, including transformers and DC/AC machines. This course contains synchronous generators/motors, induction motors, DC motors/generators, and control of motor drives.

課程目標 Course Objectives

學習電動機械之基礎設計與驅動原理，提供相關理論分析、算式計算、以及電動機械模擬之方法

圖示說明Illustration ：● 高度相關 Highly correlated ○中度相關 Moderately correlated

授 課 進 度 表 Teaching Schedule & Content

| 週次Week | 內容 Subject/Topics | 備註Remarks |
|---|---|---|
| 1 | Introduction to electric machines and control<br>Introduction to grade evakuation method | 02/23 |
| 2 | DC machinery fundamentals I | 03/02 |
| 3 | Suspended for holiday | 03/09 |
| 4 | DC machinery fundamentals II<br>DC motors I | 03/16 |
| 5 | DC motors II | 03/23 |
| 6 | DC generators I | 03/30 |
| 7 | Day off | 04/06 |
| 8 | DC generators II | 04/13 |
| 9 | 1st Exam | 04/20 |
| 10 | Transformers I | 04/27 |
| 11 | Transformers II | 05/04 |
| 12 | AC machinery I | 05/11 |
| 13 | 2nd Exam (Tentative) | 05/18 |
| 14 | AC machinery II | 05/25 |
| 15 | Synchronous motors and generators I | 06/01 |

| | | |
|---|---|---|
| 16 | Synchronous motors and generators II | 06/08 |
| 17 | 3rd Exam (written exam or homework) | 06/15 |
| 18 | Special issues on electric machinery and control | 06/22 |

## 教 學 策 略 Teaching Strategies

☑ 課堂講授 Lecture ☐ 分組討論Group Discussion ☐ 參觀實習 Field Trip

☐ 其他Miscellaneous:

## 教 學 創 新 自 評 Teaching Self-Evaluation

創新教學(Innovative Teaching)

☑ 問題導向學習(PBL) ☐ 團體合作學習(TBL) ☑ 解決導向學習(SBL)

☐ 翻轉教室 Flipped Classroom ☐ 磨課師 Moocs

社會責任(Social Responsibility)

☐ 在地實踐Community Practice ☐ 產學合作 Industy-Academia Cooperation

跨域合作(Transdisciplinary Projects)

☐ 跨界教學Transdisciplinary Teaching ☐ 跨院系教學Inter-collegiate Teaching

☐ 業師合授 Courses Co-taught with Industry Practitioners

其它 other:

| 學期成績計算及多元評量方式 Grading & Assessments | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 配分項目<br>Items | 配分比例<br>Percentage | 多元評量方式 Assessments | | | | | | | |
| | | 測驗<br>會考 | 實作<br>觀察 | 口頭<br>發表 | 專題<br>研究 | 創作<br>展演 | 卷宗<br>評量 | 證照<br>檢定 | 其他 |
| 平時成績(含出缺席)<br>General Performance<br>(Attendance Record) | 10% | | ✓ | | | | | | |
| 期中考成績 Midterm Exam | | ✓ | | | | | | | |
| 期末考成績 Final Exam | | ✓ | | | | | | | |
| 作業成績 Homework and/or Assignments | | | | | ✓ | | | | |
| 其他 Miscellaneous<br>(_____) | | | | | | | | | |

評量方式補充說明
Grading & Assessments Supplemental instructions

Semester grade: 20%(exam), 30%(exam), 40%(exam), 10%(Attendance)

教科書與參考書目（書名、作者、書局、代理商、說明）
Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)

Electric Machinery Fundamentals, McGraw-Hill, 2012.
Authors: S. J. Chapman
東華書局/新月圖書 代理

課程教材網址(含線上教學資訊,教師個人網址請列位於本校內之網址)
Teaching Aids & Teacher's Website(Including online teaching information.
Personal website can be listed here.)

其他補充說明 (Supplemental instructions)