

Course Specification

Name of Institution Mahidol University
Campus/Faculty/Department -

Section 1: General Information

- 1. Course Code and Title** Physical Metallurgy SCME 203
- 2. Number of Credits** 3 (3-0-6)
(numbers of hours/week: lecture-laboratory-self study)
- 3. Program and Course Category**
3.1 Programs Bachelor's degrees (Materials Science and Nanoengineering)
International program
3.2 Course Category Required core course
- 4. Course coordinator and Lecturers**
Dr. Kittitat Subannajui
- 5. Semester/Year of Study** Second Semester of Second Year
- 6. Course Conditions** No condition
- 7. Pre-requisite** None
- 8. Co-requisite** None
- 9. Venue of study** Mahidol University, Salaya Campus
- 10. Date of Course Initiation or Latest Revision** 5 January, 2024

1. Teaching Plan

Week	Topic/Description	No. of Hrs.	Teaching Activity	Instructor
10 Jan	Introduction	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui
17 Jan	Atomic Bonding of Metal, Crystal Structure and Symmetry in Metals	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui
24 Jan	Electrical conduction and heat conduction in metals	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui
31 Jan	Magnetic property in metals	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui

Week	Topic/Description	No. of Hrs.	Teaching Activity	Instructor
7 Feb	Defects in Metal	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui
14 Feb	Basic Mechanical Properties of Metals and Strengthening Mechanism	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui
21 Feb	Phase Diagram of Metals	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui
Midterm Exam Week				

Week	Topic/Description	No. of Hrs.	Teaching Activity	Instructor
6 Mar	Ferrous Alloy and TTT Diagram	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui
13 Mar	Ferrous Alloy and TTT Diagram	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui
20Mar	Non-Ferrous Alloy	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui
27Mar	Non-Ferrous Alloy(Continue)	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui
3 Mar	Solidification of Metals,	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui
10 Apr	Solidification of Metals(Continue)	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui
17 Apr	Heat Treatment, Segregation, and Diffusion	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui
24 Apr	Failure in metals	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui
Final Exam week				