

Subject Numbering	TMA-MEE216E
Year	2021
Subject	(IMAC-U)Materials Science I
Credit(s)	2
Instructor	KAZUHISA SATO YUJI ICHIKAWA

Language	English														
Object in Class subject and Object and summary of class and Goal of study(J)															
Object in Class subject and Object and summary of class and Goal of study	This course will provide concise introduction to the microstructures and processing of materials and how these are related to the properties of engineering materials. In this course, although we mostly deal with metals, properties of other engineering materials will also be discussed. The goal of this course is understanding of basic properties of materials, of how properties are related to microstructures, of how microstructures are controlled by processing, and of how materials are formed and joined.														
Other subject is relevant and complete a point to notice(J)															
Other subject is relevant and complete a point to notice	Mechanics of Materials I, Thermodynamics														
Contents and progress schedule of class(J)															
Contents and progress schedule of class	<ol style="list-style-type: none"> 1. Course Introduction and Orientation 2. Properties and Structures of Metals 1 3. Properties and Structures of Metals 2 4. Equilibrium Constitution and Phase Diagrams 5. Case Studies in Phase Diagrams 1 6. Case Studies in Phase Diagrams 2 7. Driving Force for Structural Change 8. Kinetics of Structural Change 1 9. Kinetics of Structural Change 2 10. Case Studies in Phase Transformation 1 11. Case Studies in Phase Transformation 2 12. Carbon Steels 13. Alloy Steels 14. Production, Forming, and Joining 15. Review and Final Exam 														
self study(J)															
self study															
Record and evaluation method(J)															
Record and evaluation method	Evaluation will be based on "class participation and homework assignment" and "final exam".														
Textbook and references	<table border="1"> <thead> <tr> <th>No</th> <th>Title</th> <th>Author</th> <th>Publisher</th> <th>Year</th> <th>ISBN/ISSN</th> <th>Classification</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>『Engineering Materials 2』</td> <td>M. F. Ashby and D. R. H. Jones</td> <td>ELSEVIER</td> <td>2006</td> <td></td> <td></td> </tr> </tbody> </table>	No	Title	Author	Publisher	Year	ISBN/ISSN	Classification	1.	『Engineering Materials 2』	M. F. Ashby and D. R. H. Jones	ELSEVIER	2006		
No	Title	Author	Publisher	Year	ISBN/ISSN	Classification									
1.	『Engineering Materials 2』	M. F. Ashby and D. R. H. Jones	ELSEVIER	2006											
URL															

Attached file	
Office hours(J)	
Office hours	12:00–13:00 on Thursday
Notes	When remote lecture system (Google Classroom) is used, the class code is "xqcd2bz".
Practical business	
In addition	
Last Update	2021/08/23 16:04
	<p>1単位の授業科目は、45時間の学修を必要とする内容をもって構成することを標準としています。1単位の修得に必要な学修時間の目安は、「講義・演習」については15～30時間の授業および授業時間外学修(予習・復習など)30～15時間、「実験、実習及び実技」については30～45時間の授業および授業時間外学修(予習・復習など)15～0時間です。</p> <p>One-credit courses require 45 hours of study. In lecture and exercise-based classes, one credit consists of 15–30 hours of class time and 30–15 hours of preparation and review outside of class. In laboratory, practical training, and practical skill classes, one credit consists of 30–45 hours of class time and 15–0 hours of preparation and review outside of class.</p>