

UNIVERSITI MALAYSIA PAHANG (UMP)
FAKULTI KEJURUTERAAN MEKANIKAL

COURSE INFORMATION

1	Course Code and Name	BMM1523/BHA1113 Engineering Materials
2	Semester and Year Taught	Semester 1/2 Year 1
3	Program Level/Category	Degree
4	Unit	3 Credits
5	Prerequisite	Nil
6	Teaching Methods	Lecture: 3 units (3 hours X 14 weeks) Tutorial: 0 unit (0 hour X 14 weeks) Laboratory: 0 unit (0 hour X 14 weeks)
7	Course Synopsis	This course introduce students to the fundamentals of engineering materials which includes its crystal structure of materials, mechanical properties, heat treatment, strengthening mechanism, ferrous and non-ferrous alloys, ceramics, polymers, composites, and advanced materials.
8	Learning Outcome	By the end of semester, students should be able to: CO1: Understand the classification of engineering materials together with its structures. CO2: Analyse and evaluate the mechanical properties of metals, its phase diagram and strengthening mechanism CO3: Explain the difference between ferrous and non-ferrous alloys CO4: Analyse and define the ceramics materials, polymeric materials CO5: Analyse and define the composites materials and advanced materials.
9	References	<ol style="list-style-type: none"> 1. William D. Callister, David G. Rethwisch, 2014, Materials Science and Engineering, 9th Edition, John-Wiley & Sons. 2. William F. Smith, Javad Hashemi, 2006, Foundation of Materials Science and Engineering, Fourth edition, McGraw Hill. 3. Budinski, K.G, 2006, Engineering Materials Properties and Selection, 8th edition, Prentice Hall. 4. Shackelford, J.F, 2005, Introduction to Materials Science for Engineers, 6th edition, Prentice Hall. 5. G. E. Dieter, 1986, Mechanical Metallurgy, McGraw-Hill.