(1) **Kod Kursus:** **KKKP4163**
Course Code:

(2) **Nama Kursus:** **Kaedah Unsur Terhingga untuk Pembuatan**
Course Title *Finite Element Method in Manufacturing*

(3) **Taraf kursus:** **Jabatan (Elektif)**
Course definition: *Department (Elective)*

(4) **Sinopsis:**
Synopsis:

Kursus ini akan menerangkan asas kepada penggunaan kaedah unsur terhingga dalam pembuatan. Ianya bermula dengan konsep asas kaedah unsur terhingga seperti pembahagian jasad, jenis-jenis unsur, pecahan jasad kepada unsur dan nod, penyediaan jejaring, matriks keanjalan. Pengenalan kepada perisian unsur terhingga dan penggunaan kaedah unsur terhingga dalam industri pembuatan (seperti pengacuanan plastik dan komposit, penuangan logam). Kursus ini terdiri daripada dua bahagian iaitu teori asas kaedah unsur terhingga dan penggunaan perisian yang ada di pasaran untuk menyelesaikan masalah kejuruteraan.

This course provides basic application of finite element method in manufacturing. It starts with the basic concepts of finite element method such as division of body, types of element, dividing body to element and node, web preparation, and elastic matriks. Introduction to finite element and its application in manufacturing industry (example molding of plastic and composite, metal casting). This course is divided into two parts, basic concepts of finite element and the application software available in the market to solve engineering problem

(5) **Pra-keperluan (jika ada)**:
Pre-requisite (if any):

(6) Bacaan Asas:
References:

Chanpupatla, T.R and Belengundu A.D. 2002. *Introduction to Finite Element*. 3nd ed. New Jersey: Prentice Hall.
Bickford W. B.2001, *A First Course in the Finite Element Method.* 2nd ed. Boston: Irwin.
Ansel C 2002, *Advanced Strength and Applied elasticity*, Prentice Hall
Incropera 2007, *Introduction to Heat transfer*, John Wiley and Sons
Champion E. R. 1992. *Finite Element Analysis in Manufacturing: A PC Approach*. London: MCGraw Hill
Cook R.D., 2001. *Concepts and Application of Finite Element Analysis*, 4th Edition, Wiley
Thompson E.G., 2004. *Introduction to the Finite Element Method: Theory, Programming and Applications*, Wiley