UNIVERSITI MALAYA	**MAKLUMAT KURSUS UNTUK SEMESTER/PENGGAL SEMASA** ***COURSE INFORMATION FOR CURRENT SEMESTER/TERM***

Sesi Akademik *Academic Session*	2020/2021
Semester/Penggal *Semester/Term*	1
Kod Kursus *Course Code*	KIE3005
Tajuk Kursus *Course Title*	Analisa Berangka *Numerical Analysis*
Bahasa Pengantar *Medium of Instruction*	Bahasa Inggeris *English*
Rujukan Utama *Main Reference*	1. S.C. Chapra, R.P. Canale (2014), *Numerical Methods for Engineers*, 7th Edition, McGraw-Hill International Edition. 2. G.R.Lindfield, J.E.T Penny (2012), *Numerical Methods using MATLAB*, 3rd Edition, Academic Press. 3. J.L. Buchanan, P.R. Turner (1992), *Numerical Methods and Analysis*, McGraw-Hill.
Strategi Pembelajaran *Learning Strategies*	Kuliah dan Tutorial *Lectures and Tutorials*
Masa Pembelajaran Pelajar *Student Learning Time*	Bersemuka / *Face to face* : 45 jam/*hours* Tidak Bersemuka / *Non Face to face*: 0 jam/*hour* Masa Persediaan Pelajar / *Student Preparation Time*: 75 jam/*hours*
Kemahiran Boleh Pindah Transferable Skills	Programming of numerical methods using MATLAB
Pensyarah / *Lecturer* Bilik / *Room* Telefon/e-mel *Telephone/e-mail*	Prof. Madya Ir. Dr. Mahidzal Dahari Bilik , Tingkat 2 7967 / mahidzal@um.edu.my
Sesi Kuliah / *Lecture Session:* Hari/Masa / *Day/Time* Tempat / *Venue*	Rujuk kepada myum.um.edu.my. *Refer to* myum.um.edu.my.
Sesi Tutorial/Amali: *Tutorial/Practical Session:* Hari/Masa / *Day/Time* Tempat / *Venue*	Tiada *No*
Perincian Pemberatan Penilaian *Detail of Assessment Weightage*	Penilaian Berterusan / *Continuous Assessment* : 40% Peperiksaan Akhir / *Final Examination* : 60%

Jadual Pengajaran / *Teaching Schedule*

Minggu *Week*	Topik & Aktiviti *Topic & Activities*	Rujukan *References*
1	*Introduction to numerical methods for engineering analysis and the significance of using computers as tools for solutions.* *Basic graphical user interface*	*Ref [1], lecture note*
2	*Errors in computing: accuracy and precision, binary representation, significant figures.*	*Ref [1], lecture note*
3	*Errors in computing: round off errors, truncation errors, blunders, data uncertainty, computational stability, condition numbers, error analysis and estimation,*	*Ref [1], lecture note*
4	*Roots of equations: bracketing methods*	*Ref [1], lecture note*
5	*Roots of equations: open methods*	*Ref [1], lecture note*
6	*Roots of equations: nonlinear equations, polynomials, multiple roots- Newton Raphson*	*Ref [1], lecture note*
7	*Continuation from week 6*	*Ref [1], lecture note*
8	*Integration and differentiation*	*Ref [1], lecture note*
9	*Integration methods*	*Ref [1], lecture note*
10	*Differentiation methods*	*Ref [1], lecture note*
11	*Ordinary differential equations: Euler's method*	*Ref [1], lecture note*
12	*Ordinary differential equations: Runga-Kutta*	*Ref [1], lecture note*
13	*Curve fitting: regression techniques*	*Ref [1], lecture note*
14	*Curve fitting: interpolation techniques*	*Ref [1], lecture note*