

HKU Summer Institute 2020

Undergraduate Programmes

Course Details													
Course Code	MATH1641												
Course Title	Mathematical Laboratory and Modeling												
Credit Bearing Programme	6 credits												
Course Description	This course introduces elementary mathematical modeling techniques. Also, a powerful and free software Scilab would be taught and used to study models in Physics, Chemistry, Biology, Ecology and Management. Students may need to bring their own notebooks.												
Course Outline	In this course, we shall <ol style="list-style-type: none"> 1. introduce fundamental programming techniques in Scilab, 2. demonstrate how mathematical models are formulated, and 3. how to interpret these models with the help of computer. Some basic techniques in calculus and linear algebra will be covered in due course.												
Learning Outcomes	On successful completion of this course, students should be able to: <table border="1" style="width: 100%;"> <thead> <tr> <th colspan="2">Course Learning Outcomes (CLO)</th> </tr> </thead> <tbody> <tr> <td>CLO 1</td> <td>recognize the importance of numerical methods in mathematical modeling</td> </tr> <tr> <td>CLO 2</td> <td>demonstrate basic algebraic and arithmetic computations in the Scilab environment</td> </tr> <tr> <td>CLO 3</td> <td>write and interpret programs in Scilab programming language</td> </tr> <tr> <td>CLO 4</td> <td>solve simple numerical problems by using interactive Scilab commands</td> </tr> <tr> <td>CLO 5</td> <td>solve moderately complicated numerical problems by writing Scilab programs</td> </tr> </tbody> </table>	Course Learning Outcomes (CLO)		CLO 1	recognize the importance of numerical methods in mathematical modeling	CLO 2	demonstrate basic algebraic and arithmetic computations in the Scilab environment	CLO 3	write and interpret programs in Scilab programming language	CLO 4	solve simple numerical problems by using interactive Scilab commands	CLO 5	solve moderately complicated numerical problems by writing Scilab programs
Course Learning Outcomes (CLO)													
CLO 1	recognize the importance of numerical methods in mathematical modeling												
CLO 2	demonstrate basic algebraic and arithmetic computations in the Scilab environment												
CLO 3	write and interpret programs in Scilab programming language												
CLO 4	solve simple numerical problems by using interactive Scilab commands												
CLO 5	solve moderately complicated numerical problems by writing Scilab programs												
Study Load	36 contact hours + 120 learning hours												
Assessments	Assignments / in-class activities (20%), two midterm tests (30%) and one written examination (50%) No supplementary examination will be offered.												
Language of Instruction	English												

Class Schedule	
Course Period	July 13 - 31, 2020
Class Day & Time	Monday, Tuesday, Thursday & Friday 09:30 - 12:30 (live or pre-recorded lectures, live Q&A sessions; dates of live classes would be announced in late June or early July) <ul style="list-style-type: none"> ▪ There would be one more live lecture / Q&A session on July 22 or 29, 2020
Venue	This course will be conducted via Zoom or other platforms (to be announced).

Application	
Target Students	Non HKU Postgraduate Students, Non HKU Undergraduates
Pre-requisite	High score in NCEE (Gaokao) math or in AP Calculus, or Good grade in IB Math (DP) or in GCE A-level Further/Pure math, or Equivalent. Applicants should provide a list of current courses and past exam result sheets or transcripts.
Remarks	Accommodation: Not Applicable
Online Application	Please visit the <u>webpage of "MATH1641 Mathematical Laboratory and Modeling"</u> for Online Application .
Course Fee	HK\$14,500 (This course will be switched to online teaching. A special discount of 20% off will be applied)
Discount	10% off for students from HKU exchange partners
Early Bird Offer	Apply on or before March 1, 2020 <ul style="list-style-type: none"> ▪ 12% discount on course fee (HKU partners' students) ▪ 5% discount on course fee (non HKU partners' students)
Deadline for Application	June 30, 2020

Enquiries
<p>Tel: 2241 5199 / 2859 2250 Email: AMGS@maths.hku.hk Url: http://www.math.hku.hk/ Department of Mathematics, The University of Hong Kong</p>