

# HKU Summer Institute 2021

## Undergraduate Programmes

Course Details													
<b>Course Code</b>	MATH1641												
<b>Course Title</b>	Mathematical Laboratory and Modeling												
<b>Credit Bearing Programme</b>	6 credits												
<b>Course Description</b>	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.												
<b>Course Outline</b>	<p>In this course, we shall</p> <ol style="list-style-type: none"> <li>1. introduce fundamental programming techniques in SciLab,</li> <li>2. demonstrate how mathematical models are formulated, and</li> <li>3. how to interpret these models with the help of computer.</li> </ol> <p>Some basic techniques in calculus and linear algebra will be covered in due course.</p>												
<b>Learning Outcomes</b>	<p>On successful completion of this course, students should be able to:</p> <table border="1"> <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
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<b>Study Load</b>	36 contact hours + 120 learning hours												
<b>Assessments</b>	<p>Assignments / in-class activities (20%), two midterm tests (30%) and one written examination (50%)</p> <p>No supplementary examination will be offered.</p>												
<b>Language of Instruction</b>	English												

Class Schedule	
Course Period	July 12 - 30, 2021
Class Day & Time	Monday, Tuesday, Thursday & Friday 09:30 - 12:30 (Note: Pre-recorded lectures, plus live lectures and live tutorials which would be recorded. Arrangement of Tests and exam is not fixed yet; but it would be in-class or would be held in evening.)
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 <b>webpage of "MATH1641 Mathematical Laboratory and Modeling"</b> for <b>Online Application</b> .
Course Fee	HK\$11,600
Early Bird Offer	Apply on or before February 28, 2021 <ul style="list-style-type: none"> <li>▪ 5% discount on course fee</li> </ul>
Partnership Discount*	<ul style="list-style-type: none"> <li>▪ 10% discount on course fee (HKU Exchange Partners' students)</li> </ul> *This discount is not in conjunction with other discounts
Deadline for Application	June 14, 2021

Enquiries
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