

# HKU Summer Institute 2019

## High School Programmes

Course Details													
<b>Course Code</b>	MATH1641												
<b>Course Title</b>	Mathematical Laboratory and Modeling												
<b>Credit Bearing Programme</b>	6 credits Upon satisfactory completion of the course, students would be awarded 6 credits. These credits would be counted towards the students' studies in the Faculty of Science at HKU (by applying for an advanced standing of the course). Recognition by other HKU Faculties would be subject to the approval of individual Faculties.												
<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. Students may need to bring their own notebooks.												
<b>Course Outline</b>	In this course, we shall  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.												
<b>Learning Outcomes</b>	On successful completion of this course, students should be able to:  <table border="1" data-bbox="456 1178 1424 1654"> <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												
<b>Study Load</b>	36 contact hours + 120 learning hours												
<b>Assessments</b>	Assignments / in-class activities (20%), two midterm tests (30%) and one written examination (50%) No supplementary examination will be offered.												
<b>Language of Instruction</b>	English												

Class Schedule	
<b>Course Period</b>	July 15 - August 2, 2019
<b>Class Day &amp; Time</b>	Monday, Tuesday, Thursday & Friday 09:30 - 12:30 <ul style="list-style-type: none"> <li>▪ There would be one more lecture on July 24 or 31</li> <li>▪ Examination: August 2, 2019 (Friday)</li> </ul>
<b>Venue</b>	The University of Hong Kong

Application	
<b>Pre-requisite</b>	Form 5 or above, or Equivalent. Applicants should provide a list of current courses plus the examination results of the first, second and third most recent semesters.
<b>Remarks</b>	Students without Permanent HK Identity Cards may require visas to study in HKU. For student visa, please visit <a href="#">Here</a> .  HKU accommodation is also available, with priority given to students not residing in Hong Kong. For details, please visit <a href="#">Here</a> .
<b>Online Application</b>	Please visit the <b><u>webpage of "MATH1641 Mathematical Laboratory and Modeling" for Online Application.</u></b>
<b>Course Fee</b>	HK\$4,400
<b>Early Bird Offer</b>	Apply on or before February 28, 2019: 5% discount on course fee (the early bird offer is not valid in conjunction with other discounts)
<b>Deadline for Application</b>	March 31, 2019 <b>(The course is FULL. For students who are interested in taking the course, we welcome your early application in 2020 summer. Thank you for your attention.)</b>

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