

HKU Summer Institute 2022

High School Programmes

Programme Details													
Programme Code	HS-MATH1641												
Programme Title	Mathematical Laboratory and Modeling												
Credit Bearing Programme	<p>6 credits</p> <p>Upon satisfactory completion of the programme, 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 programme). Recognition by other HKU Faculties would be subject to the approval of individual Faculties.</p>												
Programme Description	This programme 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.												
Programme Outline	<p>In this programme, we shall</p> <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. <p>Some basic techniques in calculus and linear algebra will be covered.</p>												
Learning Outcomes	<p>On successful completion of this programme, students should be able to:</p> <table border="1"> <thead> <tr> <th colspan="2">Programme Learning Outcomes (PLO)</th></tr> </thead> <tbody> <tr> <td>PLO 1</td><td>recognize the importance of numerical methods in mathematical modeling</td></tr> <tr> <td>PLO 2</td><td>demonstrate basic algebraic and arithmetic computations in the Scilab environment</td></tr> <tr> <td>PLO 3</td><td>write and interpret programs in Scilab programming language</td></tr> <tr> <td>PLO 4</td><td>solve simple numerical problems by using interactive Scilab commands</td></tr> <tr> <td>PLO 5</td><td>solve moderately complicated numerical problems by writing Scilab programs</td></tr> </tbody> </table>	Programme Learning Outcomes (PLO)		PLO 1	recognize the importance of numerical methods in mathematical modeling	PLO 2	demonstrate basic algebraic and arithmetic computations in the Scilab environment	PLO 3	write and interpret programs in Scilab programming language	PLO 4	solve simple numerical problems by using interactive Scilab commands	PLO 5	solve moderately complicated numerical problems by writing Scilab programs
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Study Load	36 contact hours + 120 learning hours												
Assessments	<p>Assignments / in-class activities (20%), two midterm tests (30%) and one written examination (50%)</p> <p>No supplementary test and examination will be offered.</p>												
Language of Instruction	English												

Class Schedule	
Programme Period	July 11 - 29, 2022
Class Day & Time	Monday, Tuesday, Thursday & Friday 09:30 - 12:30 (Note: Online lectures and tutorials + some pre-recording lectures. All the live lectures and tutorials will be recorded and uploaded on the Moodle after class. There will be online tests and exam.)
Venue	This programme will be conducted online .

Application	
Pre-requisite	S5-S6, or Equivalent, in the academic year 2021-2022. Applicants should provide a list of current programmes plus the examination results of the first, second and third most recent semesters.
Remarks	This programme is the same as the summer programme MATH1641 offered to non HKU undergraduate students. Accommodation: Not Applicable
Online Application	Please visit the webpage of "MATH1641 Mathematical Laboratory and Modeling" for Online Application .
Programme Fee	HK\$8,520
Early Bird Offer*	Apply on or before February 28, 2022 <ul style="list-style-type: none"> 5% discount on programme fee
Summer Scholarships offered by HKU Academy for the Talented*	Academy members <ul style="list-style-type: none"> 20% discount of the programme fee
Discount offered to HKUSI Alumni*	<ul style="list-style-type: none"> 20% discount of the programme fee
Discount offered to referral by HKUSI Alumni and HKU members*	<ul style="list-style-type: none"> 10% discount of the programme fee
Deadline for Application	June 10, 2022

*All discounts are not in conjunction with any other discounts.

Enquiries
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