

Hong Kong Observatory Summer Placement Programme 2017

Training Programme : A mentor from the Hong Kong Observatory with relevant expertise will supervise the student.

Training Period : 8 weeks, starting from **5 June 2017**.

General Requirements : Applicants should (1) be citizen of Hong Kong; (2) be undergraduate students; (3) have academic background and specific knowledge/skills as specified in Annex II; and (4) be fluent in both Chinese and English.

Scholarship : A scholarship for 8 weeks (with a current rate at HK\$ 9,600 per month) will be granted by the Observatory to the students who have successfully enrolled in the Programme. The Observatory reserves the right to choose to withdraw the scholarship, on a pro-rata basis, should the offer be terminated for any reasons.

Student Status : Students will receive training at the Observatory as student trainees and there is no employer-employee relationship. Their status as "registered students of their respective university" will be maintained.

Project Specifications : Please refer to Annex II

Application Procedures : Applicants should submit the application form (AnnexIII) together with copies of official transcript of studies (or other means of proof of studies containing academic results) and other information as required in Annex II, by email to essc@cuhk.edu.hk. The deadline for application is **7 April 2017**.

Note : Personal data provided by job applications will be used strictly in accordance with the HKSAR Government's personal data policies, a copy of which will be provided upon request.

Offer of Appointment : Successful candidates will be notified by **19 May 2017**. Those who have not been informed of the results of selection by this date shall assume that their applications are unsuccessful.

Briefing Session

3:00pm, (Fri) 24 Mar 2017

SC329

Hong Kong Observatory Summer Placement Programme 2017

Project Ref.	Project Title	Job description	Subject and year of study required	Specific knowledge / skills required / remarks
A1	Development of mobile application(s) to facilitate the use of aviation weather information and report of interesting weather situations both on ground and onboard an aircraft with WiFi connectivity	Recommend and implement mobile weather application(s) that can enhance the experience of pilots, crew and passengers of a flight both before departure/after arrival and during flight, in the latter case making use of the WiFi connection and additional information on available aircrafts	Computer Science or related disciplines. Completion of 2 nd year of study.	Genuine interest in meteorology. Knowledge and skills in iOS or Android programming are necessary.
A2	Critical behaviour in spatial distribution of rainfall	Spatial patterns of rainfall as observed from remote-sensing instruments e.g. satellite and radar exhibit many interesting features that could be studied using methods of modern statistical thermodynamics. This project aims to apply concepts of critical behaviour in exploring such naturally-occurring phenomena.	Physics or related disciplines Completion of 2 nd year of study.	Strong background in statistical physics; interest in applying physics knowledge to real-world observation data; experience in programming (Fortran, C++, R, etc.) an advantage but not essential.

D1a	Tropical cyclone rainfall in Hong Kong	<p>(1) Review different definitions of tropical cyclone (TC) rainfall in Hong Kong;</p> <p>(2) Update relevant statistics on TC rainfall using rainfall data of the Hong Kong Observatory and the Geotechnical Engineering Office; and</p> <p>(3) Examine the characteristics/trends of extreme TC rainfall event in Hong Kong.</p>	<p>Physics, Earth Science, Mathematics, Statistics, Computer Science, or related disciplines.</p> <p>Completion of 2nd year of study.</p>	<p>Strong interest in meteorology (especially tropical cyclone) research.</p> <p>Skillful in data processing and statistical analysis (including MS Excel or other statistical programming software).</p> <p>Proficiency in literature search and review.</p>
D1b	Development of casualty database of hazardous weather in Hong Kong	<p>(1) Design and build a casualty database based on various data types (e.g. weather warning, main causes of casualty, incident time/location, etc.);</p> <p>(2) Collect information on casualty and damage associated with different types of hazardous weather events in Hong Kong from historical newspapers and materials (since 1990 and subject to project progress); and</p> <p>(3) Conduct initial analysis of the data collected in (2).</p>	<p>Physics, Earth Science, Social Science, Geography, Mathematics, Statistics, Computer Science, or related disciplines.</p>	<p>Strong interest in meteorology (especially historical weather event) research.</p> <p>Skillful in data processing and statistical analysis (including MS</p>

			Completion of 2 nd year of study.	Excel or other statistical programming software). Proficiency in historical information and literature search (Chinese and English), both online and in library.
F1	A study of the occurrence of fire incidents in Hong Kong in relation to weather and societal activities	Review the relationship between the occurrence of fire incidents in Hong Kong, in particular hill fires, and various factors including weather conditions, dryness of vegetation, and societal activities, with a view to reviewing the operation of the fire danger warning of the Hong Kong Observatory and refining the criteria of warning issuance and cancelation.	Physics, Earth System Science, Mathematics, Statistics or related disciplines. Completion of 2 nd year of study.	Knowledge in data management and skills in the use of statistical analysis tools.
F3a	Study on convective initiation using satellite data and potential application in precipitation nowcasting	Review literatures on the subject. Examine cases of convective initiation and identify associated signatures using Himawari-8 geostationary satellite data. Design algorithms to enhance nowcasting of significant convection with	Meteorology, Earth System Science, Physics, Mathematics, Statistics,	Genuine interest in meteorology. Knowledge in data analysis and use of statistical tools

		candidates of parameters for further investigation.	Computer Science or related disciplines. Completion of 2 nd year of study.	preferred.
F3b	Enhancement of location-specific temperature forecast	Develop multi-parameter post-processing model to improve surface temperature forecast. Verify its performance for automatic weather stations in Hong Kong including hilltop sites.	Meteorology, Earth System Science, Physics, Mathematics, Statistics, Computer Science or related disciplines. Completion of 2 nd year of study.	Genuine interest in meteorology. Knowledge in data analysis and use of statistical tools preferred.
F3c	Blending of cloud cover forecast using satellite and computer weather model data	Verify cloud cover product from Himawari-8 meteorological satellite. Develop algorithm to blend the satellite cloud product with cloud cover forecast from computer weather models.	Meteorology, Earth System Science, Physics, Mathematics, Statistics, Computer Science or related disciplines. Completion of 2 nd	Genuine interest in meteorology. Experiences in computer programming and data analysis are preferable.

			year of study.	
R2	Development of an ebook on radiation basics and emergency response	Process and present public education materials on radiation related knowledge in the form of an ebook for access on the Observatory's website and mobile platforms. Develop interactive educational game(s) for inclusion in the ebook.	Physics, Computer Science or related disciplines. Completion of 2nd year of study.	Strong background in interactive web page design. Skills in Photoshop and HTML5 would be an advantage
R3	Field comparison of soil moisture measurements in Hong Kong	Conduct measurements of soil moisture using tensiometers installed at different soil depth and evaluate their performances. Carry out comparison of soil moisture measurement results obtained from tensiometers and time-domain reflectometry soil moisture sensors.	Physics, Earth System Science, Mathematics, Statistics, Computer Science or related disciplines. Completion of 2 nd year of study.	Genuine interest in meteorology. Knowledge in data management and skills in the use of statistical analysis tools (e.g. MatLab or Microsoft Excel) preferred.
R4a	Analysis of past ambient gamma dose rate data	Carry out statistical analysis of past ambient gamma dose rate data. Study and document historical cases of interest with marked variation in the gamma dose rate.	Statistics, Mathematics or related disciplines. Completion of 2 nd year of study.	Use of Microsoft EXCEL in data analysis and graph plotting. Knowledge in Microsoft SQL would be an advantage.
R4b	Revamp of the Ultra-Violet	Revamp the Observatory's UV Radiation Information	Computer	Knowledge in

	(UV) Radiation Information webpage	webpage to enhance the presentation of information and improve user experience.	Science, Information Engineering or Computer Engineering. Completion of 2 nd year of study.	JavaScript, Ajax, HTML, CSS and responsive web design. Understanding of website user experience principles, accessibility and browser compatibility issues.
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**Application Form for
Hong Kong Observatory Summer Placement Programme 2017**

Project reference applied : _____
 Title of Project
(leave it blank for applying multiple projects) : _____

Personal Particulars of Applicant

Name of applicant (English) : _____
 (Chinese) : _____
 Gender : _____
 Identity Card / Passport number : _____
 Contact telephone number : _____
 E-mail address : _____
 University : _____
 Department : _____
 Year of Study : _____
(in academic year 2016/17)

Academic Results of Applicant

List of Courses Completed (please attach official transcript of studies):

First Year Courses :

(1) _____	(2) _____
(3) _____	(4) _____
(5) _____	(6) _____
(7) _____	(8) _____
(9) _____	(10) _____
(11) _____	(12) _____

Second Year Courses :

(1) _____	(2) _____
(3) _____	(4) _____
(5) _____	(6) _____
(7) _____	(8) _____
(9) _____	(10) _____
(11) _____	(12) _____

Third Year Courses :

(1) _____	(2) _____
(3) _____	(4) _____
(5) _____	(6) _____
(7) _____	(8) _____
(9) _____	(10) _____
(11) _____	(12) _____

Working Experience of Applicant (including summer employment & part time jobs)

<u>Period</u>	<u>Name of Company</u>	<u>Position Held</u>	<u>Nature of Work</u>
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Technical Knowledge and strengths of Applicant (e.g. Java programming)

(1) _____	(2) _____
(3) _____	(4) _____
(5) _____	(6) _____
(7) _____	(8) _____
(9) _____	(10) _____

Extra-curricular activities of Applicant (Optional)

(1) _____	(2) _____
(3) _____	(4) _____
(5) _____	(6) _____
(7) _____	(8) _____
(9) _____	(10) _____

Date : _____

Signature : _____