

Briefing Session on Capstone Requirement



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Part I: Overview of capstone experience

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- Aims of capstone experience
- Forms of capstone experience
- List of capstone courses by major
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Overview of Capstone Experience

What is capstone experience?

- Capstone experience is an integral part of the major programme which focuses on integration and application of knowledge and skills gained in the early years of study.

Aims of capstone experience

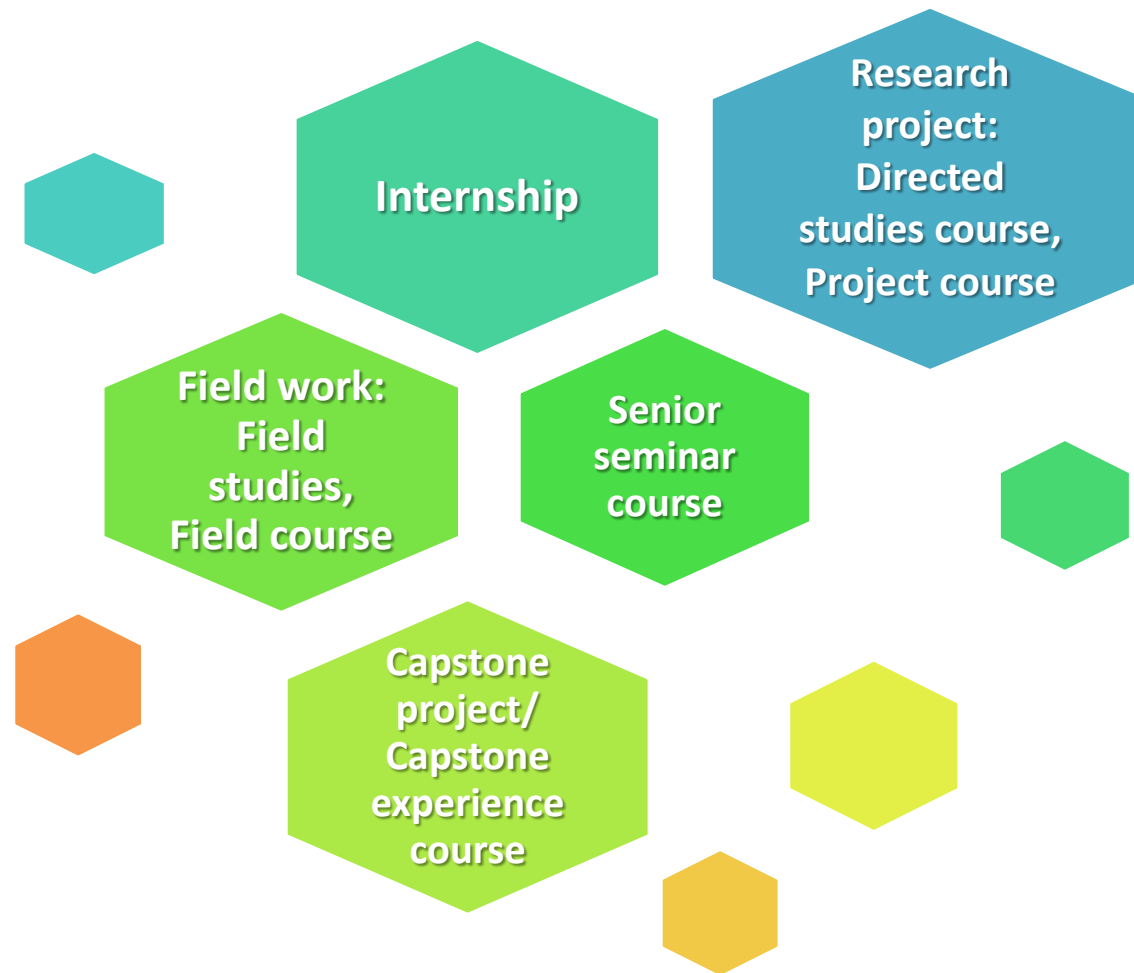
- Encourage students to demonstrate mastery of their knowledge and skills gained through their previous learning experiences by integrating them with important concepts from related disciplines;
- Enable students to reflect on their academic, personal, and social development before graduation, and to further enhance their metacognitive skills;
- Bring to conclusion culminating experience (curricular and co-curricular) of overall university life; and
- Facilitate transition from undergraduate studies to life beyond.

Requirement of capstone course

- Capstone course carries a minimum of 6 credits and students of 4-year curriculum must complete this for **fulfillment of the graduation requirements**.
- Capstone course is normally taken in the **senior years (year 3 or 4)** of study.
- The earliest that you are allowed to take a capstone course is your year 3 study, after the completion of **at least 24 credits of advanced level courses in the major (compulsory or core courses in the major)** (*please refer to the individual capstone course for the pre-requisites*).
- The capstone courses in each Science major may be different but a range of courses is offered to suit individual student's needs and interests.

Note: No capstone course will be offered in the 1st semester of 2014-15.

Forms of capstone experience



Forms of capstone experience

Internship

offer students the opportunities to gain work experience in the industry related to their major of study

Project Course: engage in an in-depth study or research on a specific topic under the supervision of a staff member

Directed Studies Course: undertake a self-managed study under the supervision of a staff member

Research project:
Directed studies
course,
Project course

Forms of capstone experience

**Field work:
Field
studies,
Field course**

provide students with first-hand, on-site learning which is not possible inside a classroom or a laboratory

undertake private study of material, usually research articles or books that are designated by the teacher. Students are required also to take turns to give presentations in class meetings, and to participate in discussions during such meetings.

**Senior
seminar
course**

**Capstone
project/
Capstone
experience
course**

students apply what they have learnt in classroom and conduct literature search in the project-based course.

List of capstone courses by major

BSc - Major	Recognized Capstone Courses
1. Biochemistry	1. BIOC3999 Directed studies in biochemistry (6) 2. BIOC4966 Biochemistry internship (6) 3. BIOC4999 Biochemistry project (12)
2. Biological Sciences	1. BIOL3955 Biological sciences field course (6)
3. Food & Nutritional Science	2. BIOL3999 Directed studies in biological sciences (6)
4. Molecular Biology & Biotechnology	3. BIOL4966 Biological sciences internship (6) 4. BIOL4999 Biological sciences project (12)
5. Chemistry	1. CHEM3999 Directed studies in chemistry (6) 2. CHEM4910 Chemistry literacy and research (6) 3. CHEM4911 Capstone experience for chemistry undergraduates: HKUtopia (6) 4. CHEM4966 Chemistry internship (6) 5. CHEM4999 Chemistry project (12)
6. Earth System Science	1. EASC4911 Earth system: contemporary issues (6)
7. Ecology & Biodiversity	1. BIOL3955 Biological sciences field course (6) 2. BIOL3999 Directed studies in biological sciences (6) 3. BIOL4911 Conservation science in practice (6) 4. BIOL4966 Biological sciences internship (6) 5. BIOL4999 Biological sciences project (12)
8. Environmental Science	1. ENVS3999 Directed studies in environmental science (6) 2. ENVS4955 Environmental science in practice (6) 3. ENVS4966 Environmental science internship (6) 4. ENVS4999 Environmental science project (12)
9. Geology	1. EASC4955 Integrated field studies (6)

List of capstone courses by major

BSc - Major	Recognized Capstone Courses
10. Mathematics	<ol style="list-style-type: none"> 1. MATH3999 Directed studies in mathematics (6) 2. MATH4910 Senior mathematics seminar (6) 3. MATH4911 Mathematics capstone project (6) 4. MATH4966 Mathematics internship (6) 5. MATH4999 Mathematics project (12)
11. Mathematics / Physics	<ol style="list-style-type: none"> 1. MATH3999 Directed studies in mathematics (6) 2. MATH4910 Senior mathematics seminar (6) 3. MATH4911 Mathematics capstone project (6) 4. MATH4966 Mathematics internship (6) 5. MATH4999 Mathematics project (12) 6. PHYS3999 Directed studies in physics (6) 7. PHYS4966 Physics internship (6) 8. PHYS4999 Physics project (12)
12. Astronomy 13. Physics	<ol style="list-style-type: none"> 1. PHYS3999 Directed studies in physics (6) 2. PHYS4966 Physics internship (6) 3. PHYS4999 Physics project (12)
14. Risk Management 15. Statistics	<ol style="list-style-type: none"> 1. STAT3799 Directed studies in statistics (6) 2. STAT4710 Capstone experience for statistics/risk management undergraduates (6) 3. STAT4766 Statistics internship (6) 4. STAT4799 Statistics project (12)

Application for exemption from taking a Capstone course in the second (Science) major

- If students take the second major in Science and the capstone experience in the first major requires the integration or application of knowledge from both their first and second majors, students may apply for the exemption from taking a Capstone course in the second (Science) major.
- Students have to complete the form **“Application for exemption from taking a capstone course in the second (Science) major”** at [http://webapp.science.hku.hk/student/servlet/download?frmId=showFile&fname=Form \(Capstone Exemption\) V4.pdf](http://webapp.science.hku.hk/student/servlet/download?frmId=showFile&fname=Form%20(Capstone%20Exemption)%20V4.pdf) and seek the written endorsement from the **Major coordinator of both majors**.

Application for exemption from taking a Capstone course in the second (Science) major

- The completed form should then be returned by the students to the Faculty Office for approval by the deadline of course selection period (*August 12, 2014 (4:00 pm)*) or add/drop periods (*September 12, 2014 (4:00 pm)* in the first semester).
- If such application is approved, students have to take a 6-credit advanced level course in the second (Science) major to fulfill the credit requirement of the capstone experience.



Guidelines on Internship Course

Internship Course as a form of Capstone Experience

Internship is considered as a form of capstone experience recognized to fulfill the capstone requirements for the following majors / programme offered in the Faculty of Science:

- BSc (Actuarial Science)
- BSc
 - Major in Astronomy
 - Major in Biochemistry
 - Major in Biological Sciences
 - Major in Chemistry
 - Major in Ecology & Biodiversity
 - Major in Environmental Science
 - Major in Food & Nutritional Science
 - Major in Mathematics
 - Major in Mathematics/Physics
 - Major in Molecular Biology & Biotechnology
 - Major in Physics
 - Major in Risk Management
 - Major in Statistics

Internship course by major

Students who wish to engage in internship must enroll in an internship course in order to have their work recognized to fulfill the capstone requirements of some of these majors / programme in the BSc 4-year curriculum. The following internship courses are currently offered in the BSc of 4-year curriculum :

Major	Internship Course
Biochemistry	BIOC4966 Biochemistry internship
Biological Sciences Ecology & Biodiversity Food & Nutritional Science Molecular Biology & Biotechnology	BIOL4966 Biological sciences internship
Chemistry	CHEM4966 Chemistry internship
Earth System Science Geology	EASC4966 Earth sciences internship (not considered as a capstone course for Earth System Science and Geology majors)
Environmental Science	ENVS4966 Environmental science internship
Mathematics	MATH4966 Mathematics internship
Mathematics/Physics	MATH4966 Mathematics internship PHYS4966 Physics internship
Astronomy Physics	PHYS4966 Physics internship
Statistics Risk Management	STAT4766 Statistics internship
Actuarial Science	STAT4767 Actuarial science internship

Content of Internship Course

- It aims to offer students the opportunities to gain work experience in the industry related to their major of study. The workplace learning experience would be of great benefits to the students to apply their knowledge gained in the study to the real work environments.
- Students have to take on **at least 160** hours of internship work either within the University or outside the University arranged by the Faculty/ School/Departments.
 - Within the university: The student will be supervised by a staff member (Supervisor), working on a project or various tasks as instructed by the Supervisor.
 - Outside the university: The student will work in an external agency related to the major of study. The student will be supervised under a staff member of the external agency (the External Supervisor) and a staff member of the Department/School of the student (the Internal Supervisor). The work to be performed by the student will normally be instructed by the External Supervisor, with prior agreement of the Internal Supervisor.

Requirement of Internship Course

- As all internships are enrolled under an internship course of a specific major discipline, the work carried out by the student in the internship must be **relevant to the major**.
- Students have to work **at least 160 hours** (lunch hour excluded) in at least 20 working days
- As the internship course is a level 4 course, and is considered as a form of Capstone experience to fulfill the capstone requirements (except EASC4966), students should have **passed at least 4 advanced courses** (24 credits with codes starting with 3 or above) **in their primary major curriculum before** they take up the internship.
- Internship courses should be taken in or after the summer following the completion of year 3 in general, **but not earlier than the 2nd semester of the third year**.

Assessment of Internship Course

- Upon completion of the internship, each student is required to submit a written report and to give a presentation on their internship experience. Supervisors are required to assess the students based on their performance during the internship period (in the case of internships outside the university, the Internal Supervisor will assess the student based on the feedback by the External Supervisor).
- Satisfactory completion of this 6-credit course will be counted towards the Capstone requirement (except EASC4966). Details of internship will be recorded on the student's transcript.
- This course will be assessed on 'Pass, Fail and Distinction' basis and will not be counted in the calculation of CPGA.

Enrollment of Internship Course

- The Faculty will only recognize students who have formally enrolled in the internship courses offered to fulfill the capstone requirement (except EASC4966).
- Due to the nature of the course, the Faculty will not open the internship course for students to enroll during the on-line course selection period.
- Students who wish to enroll in the internship course should **submit the application form of internship course to the Course Coordinator of the internship course for approval BEFORE the commencement of the internship**, and no later than
 - July 15 for summer semester
 - November 15 for 1st semester
 - April 15 for 2nd semester
- Respective School/Departments will then provide the enrollment information to the Faculty.

Leave Application for Full-time Internship Course

- If the internship takes place as a full-time position during the first or second semester, students have to apply to the Faculty for leave of absence with the submission of a letter with the copy of contract in advance.
- The enrolment of the course will be shown in the semester following the leave period.

Guidelines on Internship for Students

- For further details on internship course, please refer to the “**Guidelines on Internship for Students (4-year curriculum)**” at <http://www.scifac.hku.hk/ug/current/bsc/curriculum/capstone-req/guidelines>
- **Internship Course Application Form** can also be found in the same webpage

Frequently Asked Questions on Capstone Experience

The Faculty has added a new section of FAQ on capstone requirement in the Faculty website at <http://www.scifac.hku.hk/ug/current/faq/capstone-req>.



Thank you