**FUNH 5000 L02**

**Introduction to Function Hub For Sustainable Future**

**Fall 2024**

**Instructors:** Dr. Qichun Yang (W4 317, [qichunyang@hkust-gz.edu.cn](mailto:qichunyang@hkust-gz.edu.cn), 020-88332801)

**Office hours:** Monday, Tuesday, Thursday, and Friday 15:00-16:00 or by appointment

**Course format:** 110-minute lectures on **Tuesday 9:00-10:50 am**

**Location:** **Lecture Hall B, HKUST-GZ**

**Teaching Assistant**: QIU, Zhicong (office hour: Mon. 15:00-16:00); JI, Tian (office hour: Mon. 9:00-10:00)

**Course Description:**

This course covers background knowledge of the Function Hub thrusts, including Advanced Materials (AMAT), Earth, Ocean and Atmospheric Sciences (EOAS), Microelectronics (MICS), and Sustainable Energy and Environment (SEE). Students will learn about the overall academic structure of HKUST-GZ and the role Function Hub plays in supporting the academic goal of HKUST-GZ. Students will also learn how the 4 Function Hub Thrusts contribute to addressing challenges facing our society through innovative research.

**Course Objective:**

* Help students understand the fundamentals of the physical world.
* Enrich students’ knowledge of the interplays between human activities and the environment.
* Develop students’ creative thinking skills to conduct interdisciplinary research.
* Broaden students’ horizons by applying state-of-the-art technologies to solve environmental problems.

**Course Assessment:**

***4 essays, 25 points each.*** Students will be required to finish four essays on topics related to the course lectures. Essay topics will be provided at the end of 2nd, 5th, 8th, and 11th lectures. Late submissions will get a reduction of 10 points. Each essay should have more than 750 words, excluding references.

**Deadlines for essays**

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| Essay 1 | Sep 29th, Sunday |
| Essay 2 | Oct 27th, Sunday |
| Essay 3 | Nov 17th, Sunday |
| Essay 4 | Dec 15th, Sunday |

**Schedule of lectures**

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| **Lecture #** | **Date** | **Topics** | **Instructor** |
| 1 | Sep 3rd, Tuesday | Introduction: Function Hub research in HKUST-GZ/ Material and Civilization | Qichun Yang |
| 2 | Sep 10th, Tuesday | Superconducting Materials | Guest Lecture (Prof.Haoxiang Li) |
| 3 | Sep 24th, Tuesday | Graphene | Qichun Yang |
| 4 | Oct 8th, Tuesday | Climate Change | Qichun Yang |
| 5 | Oct 15th, Tuesday | Water | Qichun Yang |
| 6 | Oct 22st, Tuesday | Ocean | Qichun Yang |
| 7 | Oct 29th, Tuesday | Renewable Energy | Qichun Yang |
| 8 | Nov 5th, Tuesday | Electric Vehicle | Qichun Yang |
| 9 | Nov 12th, Tuesday | Green Building | Qichun Yang |
| 10 | Nov 19th, Tuesday | Computer History | Qichun Yang |
| 11 | Nov 26th, Tuesday | From Sand to Chips | Qichun Yang |
| 12 | Dec 3rd, Tuesday | Supercomputing | Qichun Yang |

**ACADEMIC INTEGRITY:** All members of the university community share responsibility for maintaining and promoting the principles of truth and academic honesty. Cheating or plagiarism in any form will NOT be tolerated. Cheating includes but is not limited to, copying work or allowing your work to be copied.

Students are allowed to use artificial intelligence (AI) tools (e.g., ChatGPT) to enhance their learning experience and course performance. **However, if AI tools or software (e.g., Grammarly) are adopted for any assignment or report, students must provide a statement briefly describing how the AI tool(s) was used, including the exact prompts used and the rationale for the choices made in submitted files.** Screenshots of the prompts and outputs should also be attached.

**If no AI tools or software are used to assist your writing, you should also provide a statement to explain how the essays are prepared**. AI content detectors will be employed to check those submissions. **False statements will be treated as cheating.**

Plagiarism includes resubmitting previously graded homework/essays/reports from previous semesters, even if it was your own work. If academic dishonesty has occurred on any homework, test, or other assignments, the incident will be reported to Academic Registry Services (ARS) and Vice President Teaching & Learning Office (VPTLO). Students involved in cheating or plagiarism will receive NO credit (a score of zero) for this course. A second incident of cheating or plagiarism may result in dismissal from the university.

**ATTENDANCE:** Absence without leave will result in a reduction of **15** points from the final score. Requests for leave need to be made before lectures.