THE CHINESE UNIVERSITY OF HONG KONG
Print Course Catalog Details

Academic Org: Fac Office of Engineering – Subject: Courses offered by Fac of Erg

Course: ENGG1003 **Course ID:** 013936 **Eff Date:** 2022-07-01 **Crse Status: Active** **Apprv. Status:** Approved **[**Course Rev**]**
Digital Literacy and Computational Thinking—P 數碼素養及計算思維—P

This is an introductory level course on digital literacy and its applications. The course first covers basic information technology skills and spreadsheet usage. Then basic statistics and data science concepts for working with data from digital sources will be introduced. Computational thinking techniques for solving problems with data (e.g., automation, textual analysis, data visualization, etc.) will be covered. Demonstrations on solving real-life problems creatively will be provided. Case studies in social media usage will be included to illustrate how to interpret data properly and identify false information. The course focuses on hands-on practices using relevant software toolboxes, without covering the inner-working details.

本入門級科目是關於數碼素養及其應用。本科首先涵蓋基本的資訊科技和試算表軟件應用，然後介紹一些基本統計和數據科學概念以用於處理數碼數據。本科亦包括運用計算思維解決一些數據相關問題（如自動化、文本分析、數據視覺化等），並為創意地解決一些現實生活中的問題提供示範，包括社交媒體使用案例研究，以說明如何正確演繹數據和識別虛假信息。本科側重於使用有關軟件工具的實用練習，而不涉及其內部運作細節。

Grade Descriptor:

DI

Student demonstrates the ability that far exceeds expectations in all the learning outcomes and all the assessment tasks, which include assignments, lab exercises, project and active participation. Student also demonstrates the ability in the extended learning outcomes, including but not limited to completing any bonus part(s) in the assessment tasks gracefully.

有關等級說明的資料，請參閱英文版本。

PA

Student demonstrates the ability in all the learning outcomes. Student meets the expectations in a majority of the assessment tasks, which include assignments, lab exercises, project and active participation.

有關等級說明的資料，請參閱英文版本。

FA

Student fails to demonstrate the ability in any of the learning outcomes.

有關等級說明的資料，請參閱英文版本。

Equivalent Offering:
Units: 3 (Min) / 3 (Max) / 3 (Acad Progress)
Grading Basis: Distinction/Pass/Failure
Repeat for Credit: N
Multiple Enroll: N
Course Attributes:

Topics:

COURSE OUTCOMES

Learning Outcomes:

Upon successful completion of the course, students will be able to

1. use spreadsheet to organize and process data;
2. describe the importance of information security and data privacy;
3. apply methods and tools to obtain and use data properly;
4. solve problems in a computational thinking style;
5. process and analyse textual data using software packages;
6. interpret and present data accurately to suit different application scenarios.

Course Syllabus:

This is an introductory level course on digital literacy and its applications. The course first covers basic information technology skills and spreadsheet usage. Then basic statistics and data science concepts for working with data from digital sources will be introduced. Computational thinking techniques for solving problems with data (e.g., automation, textual analysis, data visualization, etc.) will be covered. Demonstrations on solving real-life problems creatively will be provided. Case studies in social media usage will be included to illustrate how to interpret data properly and identify false information. The course focuses on hands-on practices using relevant software toolboxes, without covering the inner-working details.

The course covers the following topics:

- Introduction to Digital Literacy, Basic IT, and Basic Spreadsheet Usage
- Basics of Data Science and Common Misinterpretations of Statistics
- Computational Thinking
- Textual Analysis
- Data Visualization
- Demonstrations on Solving Real-Life Problems

Week 1 – 3 Introduction to Digital Literacy, Basic IT, and Basic Spreadsheet Usage
Week 4 – 6 Basics of Data Science and Common Misinterpretations of Statistics
Week 7 – 8 Computational Thinking
Week 9 – 10 Textual Analysis
Week 11 – 12 Data Visualization
Week 13 Demonstrations on Solving Real-Life Problems

Assessment Type:

Homework or assignment	: 40%
Lab reports	: 20%
Project	: 30%
Participation	: 10%

Feedback for Evaluation:

Students may provide their feedback through office hours and course evaluation.

Required Readings:

N/A

Recommended Readings:

1. Dawn Griffiths, Head First Statistics: A Brian-Friendly Guide, O'Reilly, 2008
2. Wes McKinney, Python for Data Analysis, 2nd Edition, O'Reilly, 2017
3. https://www.python.org
4. Python Tutorial, https://www.w3schools.com/python/default.asp
5. Digital Intelligence, https://www.dqinstitute.org/

OFFERINGS

1. ENGG1003 — Acad Organization=ENO; Acad Career=UG

COMPONENTS

LAB : Size=50; Final Exam=N; Contact=1
LEC : Size=50; Final Exam=N; Contact=2

ENROLMENT REQUIREMENTS

1. ENGG1003

Enrollment Requirement Group:
Not for students who have taken ENGG1004.

Additional Information

eLearning hrs for blended cls	0
No. of micro-modules	0
Research components (UG)	0%

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