Essential Components of General Education

Subject Code	DDDD1Q01-15 (please refer to Appendix I for details of each subject code)
Credit Value	0
Level	1
Name of BlackBoard courses	1. Essential Components of General Education (AI and Data Analytics) 2. Essential Components of General Education (Innovation and Entrepreneurship) 3. Essential Components of General Education (National Education) 4. Essential Components of General Education (Academic Integrity)

Objectives

To allow Senior Year and advanced standing students (i.e., those who have been waived from taking the LEAD subjects) to acquire the basic knowledge about "National Education (NE)", "Academic Integrity (OTAI)", "Artificial Intelligence and Data Analytics (AIDA)" and "Innovation and Entrepreneurship (IE)" within their first year of study.

This subject entitled "Essential Components of General Education" will form part of the SY GUR curriculum.

General Information

This subject comprises four different e-learning modules and each module has its own objectives, syllabus and assessment requirements. The four e-learning modules are:

Artificial Intelligence and Data Analytics (AIDA) (3 hours)

This module aims to introduce students to the basic concept and practice of Artificial Intelligence and Data Analytics (AIDA).

For details, please refer to Appendix II.

Innovation and Entrepreneurship (IE) (3 hours of e-lectures plus 7 hours of self-study)

This module aims to introduce students to essential aspects of Innovation and Entrepreneurship in a digital world. The objective is to prepare students with an entrepreneurial mindset and apply innovative strategies to find creative solutions that benefit both organizations and society in the age of digital transformation.

For details, please refer to Appendix III.

National Education (NE) (3 hours of e-lectures plus 7 hours of self-study)

This module introduces students to the basic concepts and theories related to law-abiding leadership as well as the importance of law-abiding leadership to different professions and the daily lives of the students. It also provides a brief overview of modern Chinese history, the Constitution, the Basic Law and the Hong Kong National Security Law.

For details, please refer to Appendix IV.

Online Tutorial on Academic Integrity (OTAI) (2 hours)

PolyU recognizes academic integrity as one of the core values important to our students. We strive to provide an environment which encourages students to maintain academic honesty throughout your university study life. This online tutorial is one of the various vehicles for our journey to academic and professional competence.

This online tutorial aims to explain to students our expectations for honest academic behaviour in your work for all areas, subjects, and levels of study. Students will learn about why it is important to be academically honest, what might constitute academic dishonesty, and ways to stay clear from academic misconduct and plagiarism.

Upon completion of the Online Tutorial on Academic Integrity, students will receive a copy of eCertificate via PolyU Connect email account.

For details, please refer to Appendix V.

Requirements

This subject is graded on a Pass/Fail basis. Students are required to complete and pass all four e-learning modules in order to pass this subject for graduation. Each module has its own requirement and assessment methods. If students fail the subject, the 'Fail' grade for this subject would be shown on the transcript of studies. Please refer to the appendices for details about each e-learning module.

Completion Timeline

Students are required to take "Essential Components of General Education", and complete and pass the individual e-modules of the four components **within the first year of study (Semesters 1 and 2)**. The "Online Tutorial on Academic Integrity" should be completed **by Week 5 of Semester 1.**

Retake Arrangements

Students are only required to retake the incomplete or failed e-module(s) when retaking the subject. The e-module(s) that have been previously completed or passed are not required to be retaken.

Subject code	Combination
DDDD1Q01	NE+OTAI+AIDA+IE
DDDD1Q02	NE+OTAI+AIDA
DDDD1Q03	NE+OTAI+IE
DDDD1Q04	NE+AIDA+IE
DDDD1Q05	OTAI+AIDA+IE
DDDD1Q06	NE+OTAI
DDDD1Q07	NE+AIDA
DDDD1Q08	NE+IE
DDDD1Q09	OTAI+AIDA
DDDD1Q10	OTAI+IE
DDDD1Q11	AIDA+IE
DDDD1Q12	NE
DDDD1Q13	OTAI
DDDD1Q14	AIDA
DDDD1Q15	IE

The “DDDD” of subject code is representing the abbreviation of the name of Department/School.

Information Scheme

Artificial Intelligence and Data Analytics (AIDA)

E-learning Module

General Information

Objective	This e-learning module aims to introduce students to the basic concept and practice of Artificial Intelligence and Data Analytics (AIDA).
Requirements	Students should: - watch the video lectures; - complete the end-of-video exercises; - complete the lab tasks with the AIDA interactive playground; Students are required to take an online test of 20 multiple-choice questions. Students must complete the test and get 65% quiz (13 out of 20 questions) correct. Multiple attempts are allowed and the last attempt will be counted.
Expected Study	- 3-hour online learning

Online Lecture Details

VIDEO LECTURES	Time	126 minutes
	Details	- The video lectures consist of 7 lessons, each taking 18 – 30 mins. Lesson 1 to 6 will introduce a single topic in AIDA by a professor from COMP. Lesson 7 contains several supplementary clips to provide a practical view with the use of AI tools. The topics to be included are: o *Introduction to Artificial Integellience and Data Analytics (by Dr. Jing Li)* o *Introduction to Multi-Objective Optimization (by Dr. Bo Li)* o *Introduction to Big Data Computing (by Prof. Song Guo)*

		○ *Introduction to Natural Language Processing (by Prof. Wenjie Li)* ○ *Introduction to Computer Vision and Pattern Recognition (by Prof. Changwen Chen)* ○ *Introduction to Machine Learning (by Dr. Bo Yang)* ○ *Deep Learning and ChatGPT (Supplementary Clips)* - The video lectures would cover the essential and trendy content in AIDA, such as basic concepts and knowledge, applications and impacts, societal implications, discipline-related ones, etc. - After each introductive clip, there is an interactive Q&A session to enhance students' comprehension of the lecture content.
TUTORIAL	Time	10 minutes
	Details	- The tutorial is a short clip showing how to use the AIDA interactive playground for building and training a neural network with simple user interactions. - The playground is a web application. Students can access it through the university's intranet.
LAB	Time	24 minutes
	Details	- The playground provides a few basic components of a general neural network, and students can select their preferred modules to build their models. - Students are required to experience the interactive playground following the procedure introduced in the tutorial and complete a report based on the outcome.
TEST	Time	20 minutes
	Details	Students are required to take an online test of 20 multiple-choice questions. Students must complete the test and get 65% quiz (13 out of 20 questions) correct. Multiple attempts are allowed and the last attempt will be counted.

Information Scheme

Innovation and Entrepreneurship (IE)

E-learning Module

General Information

Objective	This module introduces students to essential aspects of Innovation and Entrepreneurship in a digital world. The objective is to prepare students with an entrepreneurial mindset and apply innovative strategies to find creative solutions that benefit organizations and society in the age of digital transformation.
Requirements	Students are required to: - watch video lectures; - do after-class exercises and tests. Students must complete and pass the above requirements to pass the module. Multiple attempts are allowed.
Expected Study	- 3-hour online learning - 7-hour self-study

Online Lecture Details

Module	Topic	Contents
A	Introduction (2 videos, ~9 minutes)	PPT by Prof PK Wong: "Introduction to Entrepreneurship and Innovation." Reading on Innovation and Entrepreneurship (Hisrich, R. 2014) Well-known Examples of IE Success An interview with Humphrey Leung, with a sharing of the creativity and entrepreneurship

		model, plus a one-minute corporate background video Students will take a quiz and fill in a survey for Part A.
B	Innovation and Entrepreneurship Toolkit (4 videos, ~40 minutes)	Introduction of Design Thinking Video 1: Why a start-up fails? Video 2: Application of Design Thinking: Pillpack Video 3: Application of Design Thinking: IKEA Video 4: Application of Design Thinking:: Embrace Students will write learning journals. Students will fill in a survey for Part B.
C	Applications and implications of artificial intelligence on entrepreneurship and innovation (9 videos, ~ 24 minutes)	Students will study the PPT "Introduction to Artificial Intelligence and its Applications on Entrepreneurship and Innovation." Video 1 & 2: Learning games incorporated with machine learning algorithms and human-computer interaction help predict and prevent Dyslexia, plus a one-minute corporate background video Video 3 & 4: A robot for older people with embedded AI, machine learning and cloud computing with corporate background. Students will write the learning journal 1. Video 5 & 6: An AI-powered customer journey automation platform with a corporate background Video 7 & 8: An AI-powered takeaway ordering platform with a corporate background Video 9:A pitching video for a start-up competition acted by a postgraduate student team

		Ethics in AI Fundamental concepts of AI. Students will write the learning journal 2. Students will take a quiz and fill in a survey for Part C.
D	Applications and implications of blockchain technology on entrepreneurship and innovation (4 videos, ~30 minutes)	Introduction to Blockchain Technology Video 1: Overview of blockchain technology Video 2: Applications of blockchain technology in human resources and smart contracts Video 3: Applications of blockchain technology in supply chains Video 4: Benefits and risks of deploying blockchain technology A video about Blockchain Examples of NFTs Students will take a quiz and fill in a survey for Part D.
E	Applications and implications of the Internet of Things technology on entrepreneurship and innovation (4 videos, ~32 minutes)	An Introduction to the Internet of Things Video 1: Overview of Internet of Things Technology Video 2: Applications of IoT technology in smart home, manufacturing and retail Video 3: Applications of IoT technology in smart city Video 4: Benefits and risks of deploying IoT technology A video about the smart delivery system of Hai Robotics Students will take a quiz and fill in a survey for Part E.
F	How to manage IE (1 video, ~7 minutes)	Video 1: Managing technology for competitive advantage in a digital world

		Students will take a quiz and fill in a survey for Part F.
	Achievements	Students will earn a badge for each part after completing the basic components, quiz and survey. Students will earn an e-certificate after completing all parts and the end-of-course survey.
	Tests	Students must complete an online exercise of 20 multiple-choice questions. Students are required to get 80% (16 out of 20 questions) correct. Multiple attempts are allowed.

Information Scheme

National Education (NE)

E-learning Module

General Information

Objective	1. To introduce the basic concepts and theories related to law-abiding leadership and socially responsible leadership; 2. To introduce the importance of law-abiding leadership and socially responsible leadership to professions and daily lives; 3. To enable students to develop and enhance law-abiding leadership and socially responsible leadership; and 4. To provide an overview of the background and provision of National Security Law and related issues.
Requirements	Students are required to: - watch a 3-hour video lecture; - study the materials related to the lecture - complete a quiz with 20 multiple choice questions Students must complete and pass the quiz (getting correct answers in 16 or more MCQs) in order to pass the module. Multiple attempts are allowed.
Study requirement	- 3-hour online learning - 7-hour self-study

Online Lecture Details

Module	Topic	Contents
A	Introduction	Intended Learning Outcomes and course arrangements
B	Law-Abiding Leadership	**Part I: Concepts of Law-Abiding Leadership (1)**

		(i) Introduce the basic concepts of law-abiding leadership (ii) Introduce the theories explaining reasons for abiding by the laws. These include Social Contract Theory and Fair Cooperation Theory (iii)Provide the definition of law-abiding behavior **Part I: Concepts of Law-Abiding Leadership (2)** (i) Introduce the concepts related to law-abiding leadership, including socially responsible leadership, corporate compliance, and corporate social responsibility. **Part II: Importance of Law-Abiding Leadership**
C	Hong Kong National Security Law	**Part III: National Security Law (concepts of national security and national security law)** (i) Introduce the basic concepts of national security (ii) Explain national security in economy, politics, and environment with examples and some reflection questions (iii)Explain consequences of failed state regarding national security with examples (iv)Briefly introduce modern Chinese history as a typical example of failed state (instruct students to read notes for more details) and highlight the importance of having national security law (simply flip through the slides on the history) **National Security Law (NSL in different places and the background information of NSL in Hong Kong)** (i) Introduce concepts of national security law and briefly mention such laws in different places, highlight that having NSL in Hong Kong is in line with the

		common practice worldwide (ii) Briefly introduce some background information of NSL in Hong Kong (reason, date of implementation) (iii)Highlight the aim of education about NSL (nurturing law-abiding leadership among students) **National Security Law (Four major offenses listed in NSL in Hong Kong)** (i) Overview of NSL in Hong Kong, instruct students to read lecture notes for more details (ii) Details of 4 major offenses including categories of activities, penalty and real-life examples. A multiple-choice question is asked after introducing each offense (iii)Briefly mention the impacts of NSL implementation and the procedure of trial

Information Scheme

Online Tutorial on Academic Integrity (OTAI)

E-learning Module

General Information

Objective	1. To help students understand what academic integrity is. 2. To help students understand why academic integrity is important. 3. To give students guidelines on honest behaviour in academic, research and team work. 4. To teach students ways to reference information correctly to avoid plagiarism.
Requirements	Students are required to: - attempt the Pre-test; - study all five modules and complete the exercises; - obtain 75% or more in the Post-test; - sign the Honour Declaration; Students must complete and pass the above requirements in order to pass the module.
Expected Study	- 2-hour online learning

Online Lecture Details

PRE-TEST	Time	10 minutes
	Details	Students are required to take the Pre-test of 10 multiple-choice questions to prepare themselves for OTAI. The Pre-test score does not affect the final score of OTAI.
MODULES	Time	85 minutes

	Details	Students are required to learn from the five modules to enhance their understanding of academic integrity and ways to avoid dishonest behaviour and plagiarism, by reading the explanations and doing the exercises. - The five modules include: o *Understanding Academic Integrity (15 mins)* o *Understanding Plagiarism (20 mins)* o *Avoiding Plagiarism (20 mins)* o *In-text and End-of-text Referencing (15 mins)* o *Generative Artificial Intelligence (GenAI) and Academic Integrity (15 mins)*
POST-TEST	Time	20 minutes
	Details	Students are required to take the Post-test of 20 multiple-choice questions to check their understanding of academic integrity. The pass mark for the Post-test is 75% (i.e. 15 out of 20 questions).
HONOUR DECLARATION	Time	3 minutes
	Details	After passing the Post-test, students are required to read and check each statement in the Honour Declaration and sign the Honour Declaration to receive an eCertificate for successful completion of OTAI.