NANYANG
THE INNOVATIVE POLYTECHNIC

Course Briefing

Specialist Diploma in Applied Artificial Intelligence

Mar Kheng Kok
(Course Manager)

Outline

1. Course Overview
2. Assessment Plan and Academic Policy
3. Admin Matters
4. Learning Management System
5. Q&A

Course Overview

Course Overview

- SDAAI 6th Intake: *17h April 2023 to 31st Feb 2024*
- Total Duration of course: ***300 hours***
- Consist of 2 Post-Diploma Certificates (PDC) of 150 hours each
  - PDC in AI Foundation and Machine Learning: ***17 April 23 – 31 Aug 2023***
  - PDC in Deep learning and AI Applications: ***16 Oct 23 – 31 Feb 2024***
- Five modules per PDC - total 10 modules
- 30 hours per module, total 10 sessions each
- 8 course-works and 2 project modules
- No final examinations for all modules – only in-course assessments (ICAs)

Learning Outcomes

Upon graduating from the course, you will be able to:

- Understand and explain artificial intelligence principles and practices, and its applications in different business domains
- Perform data gathering, extraction, transformation, visualization, training and testing for building machine learning models
- Develop, test and deploy AI solutions using machine learning and deep learning algorithms, AI services APIs, software frameworks and tools, in different problem domains
- Analyse, tune and optimize the data set, machine learning and deep learning models for performance improvements

PDC1 Course Structure

Module Code	Module Name	Module Hours	Instructors
ITI101	Introduction to Artificial Intelligence	30	**Mr Lee Ching Yuh** Mr Tin Aung Win
ITI102	Data Science Foundation	30	**Mr Wee Chee Hong** Mr Kee Li-Ren
ITI103	Essentials of Machine Learning	30	**Dr Veronica Lim** Mr Mar Kheng Kok
ITI104	Machine Learning Algorithms	30	**Dr Brandon Ooi** Dr Zhao Zhiqiang
ITI105	Machine Learning Project	30	**Mar Kheng Kok** All Instructors
	Duration of PDC-1	150	

**Bold* indicates Module Leader*

PDC1 Delivery Plan

Delivery Mode

Synchronous Online (Zoom) and F2F

Please check the individual module site for actual lesson type (F2F or Zoom)

Zoom link will be provided in the respective module site (on POLITEMall)

- Introduction to Artificial Intelligence
- Data Science Foundation
- Essentials of Machine Learning
- Machine Learning Algorithms
- Machine Learning Project

Week	Monday	Wednesday	Thursday
1	17 Apr 2023 (F2F)	19 Apr 2023(F2F)	20 Apr 2023 (F2F)
2	24 Apr 2023 (F2F)	26 Apr 2023	27 Apr 2023 (F2F)
3	*2 May 2023** (F2F)	3 May 2023	4 May 2023
4	8 May 2023	10 May 2023(F2F)	11 May 2023
5	15 May 2023 (F2F)	17 May 2023	18 May 2023 (F2F)
6	22 May 2023	24 May 2023	25 May 2023 (F2F)
7	29 May 2023	31 May 2023(F2F)	1 Jun 2023 (F2F)
8	5 Jun 2023	7 Jun 2023	8 Jun 2023 (F2F)
9-10	**Holiday-Break 12-23 Jun 2023**		
11	26 Jun 2023	28 Jun 2023	*30 Jun 2023* (F2F)*
12	3 Jul 2023	5 Jul 2023(F2F)	6 Jul 2023 (F2F)
13	10 Jul 2023 (F2F)	12 Jul 2023	13 Jul 2023 (F2F)
14	17 Jul 2023	19 Jul 2023	20 Jul 2023 (F2F)
15	24 Jul 2023	26 Jul 2023	27 Jul 2023 (F2F)
16	31 Jul 2023	2 Aug 2023	3 Aug 2023 (F2F)
17	7 Aug 2023	*10 Aug 2023**	*11 Aug 2023* (F2F)*
18	14 Aug 2023	16 Aug 2023	17 Aug 2023
19	21 Aug 2023	23 Aug 2023	

* *Make up for class for public holiday.*

ITI101 Introduction to Artificial Intelligence

Module Learning Outcomes

1. Describe how artificial intelligence are applied to various problem domains
2. Explain different AI approaches and techniques by comparisons of classical and modern AI systems.
3. Explain the ethical and legal aspects of AI technologies using case studies.

ITI102 Data Science Foundation

Module Learning Outcomes

1. Identify and select the right data sources and data types for collection
2. Apply the data gathering, extraction and transformation techniques to process data based on the data modelling and visualization requirements
3. Apply software frameworks and tools to process and manage the big data
4. Explain issues relating to data privacy and security in the context of AI

ITI103 Essentials of Machine Learning

Module Learning Outcomes

1. Describe different categories of machine learning problems and algorithms using different application examples
2. Explain common machine learning issues and apply appropriate techniques to overcome them
3. Analyse input data for feature extraction in training machine learning models
4. Evaluate the performance of machine learning models using appropriate metrics

ITI104 Machine Learning Algorithms

Module Learning Outcomes

1. Explain essential theories and key concepts of different machine learning algorithms
2. Apply different techniques to diagnose learning issues to improve machine learning model
3. Apply dimensionality reduction and tuning techniques to speed up the training
4. Apply appropriate machine learning algorithms for different AI problems

ITI105 Machine Learning Project

Module Learning Outcomes

1. Identify and select a suitable machine learning model for a given problem and data set
2. Develop and deploy a machine learning application using appropriate software framework and tools
3. Apply model tuning and optimization to improve performance of machine learning systems
4. Evaluate machine learning models using appropriate metrics for efficiency and effectiveness

Our Teaching Staff

Mr Lee Ching Yuh
(ITI101)

Mr Tin Aung Win
(ITI101)

Mr Wee Chee Hong
(ITI102)

Mr Kee Li Ren
(ITI102)

Dr Veronica Lim
(ITI103)

Mr Mar Kheng Kok
(ITI103/ITI105)
Course Manager

Dr Brandon Ooi
(ITI104)
Course Coordinator

Dr Zhao Zhiqiang
(ITI104)

Software/Platform

Language	Python
Environment	Jupyter Notebook, Google Colaboratory
Frameworks/Libraries	Scikit-learn, Numpy, Pandas, Matplotlib, Tensorflow
AI services	Microsoft (PDC2)
Compute platform	GPU cloud server (PDC2 only), Docker

Assessment Plan and Academic Policy

Assessment

- On average, each module will have 3 assessment components (usually 1 non-proctored test, 1 proctored test, and 1 assignment)
- Penalty (deduction of marks) for late submission of assignment
- Absence from proctored test must be supported by valid reason, with documentary proof. Otherwise no make-up test will be conducted
- Not more than **2 assessments** per week
- Passing marks for each module: 50
- Need to pass ALL 5 modules to be awarded Post-diploma Certificate (PDC)
- Note that the module results will only be known at the end of the semester.

NYP Academic Integrity Policy

Policy statements

First Offence

A student who is caught cheating in any assessment (that affects the module score/grade) shall fail the module. It doesn't matter what the weightage of the assessment is.

Second Offence

A student who is caught cheating for a second time shall fail all the modules in the semester (PET students) or in the case of a CET student, any other modules registered in the system.

Third Offence

A student who is caught cheating for the third time shall be expelled from NYP.

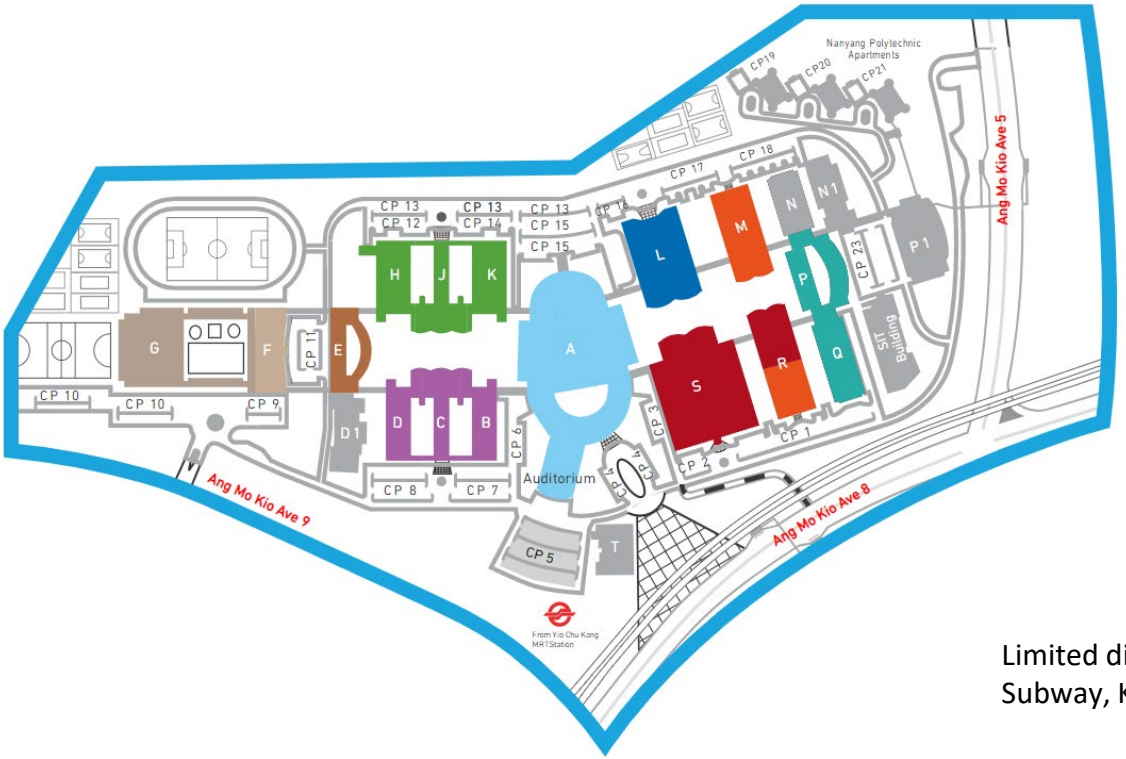
What is considered cheating?

Cheating	Fabrication	Deception	Plagiarism
Attempting to get or provide unauthorised assistance in an assessment including: • Copying another candidate's answers • Providing or assisting another candidate with answers • Referring to documents that are not allowed in the assessment • Referring to information kept in electronic or mobile devices that are not allowed in the assessment • Using any devices (such as mobile phones, programmable calculators, smart devices, etc.) when they are not allowed in the assessment	Falsifying data, information, or citations.	Asking another person to complete the work that the candidate is supposed to do.	The act of taking and using the whole or any part of ideas, words or works of other people and passing it off as one's own work, without acknowledgement of the original source.

Admin Matters

Getting to NYP

CAMPUS MAP



Venue for lessons

L.424 (Level 4)
Block L, School of IT, Nanyang Polytechnic
180 Ang Mo Kio Ave 8
Singapore 569830

Blk L glass door (near carpark)
Close at 6.30pm.
Need admin card to open

Gate at (from YCK MRT)
close at 7.00pm.
Need admin card to open

Limited dining options available until 7.00pm (e.g. Subway, Koufu food court)

Collection of Admin Cards

- Admin card will be issued to you during 1st lesson

Course/PDC/Module Deferment

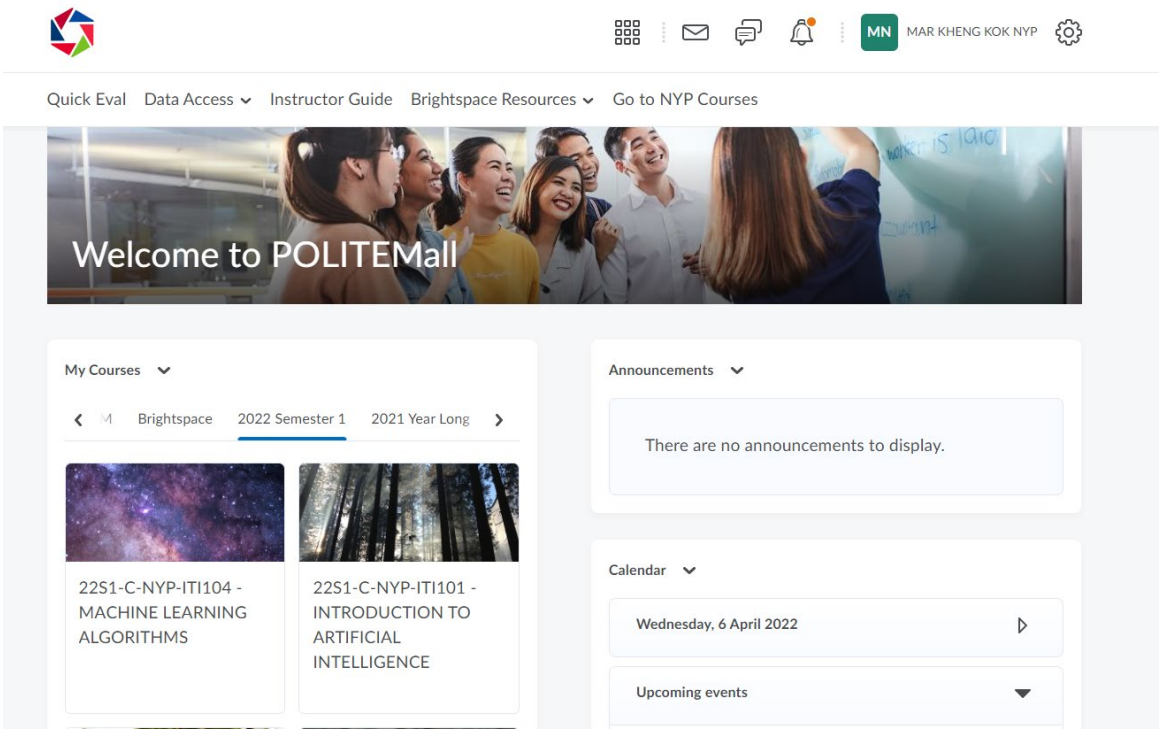
- No cut-off date for deferment.
- If deferment happens >**14 days after** commencement of PDC/Module, you are deemed to have consumed the subsidy for the PDC/Module
- Refund policy
  - fees are refundable **before** commencement of PDC
- No refund if student does not return to resume
- Maximum candidature – 2 years.

Course/PDC Withdrawal

- No cut-off date for withdrawal
- If withdrawal happens **>14 days after** commencement of PDC, you are deemed to have consumed the subsidy for the PDC
- Refund policy: No refund after commencement of PDC.

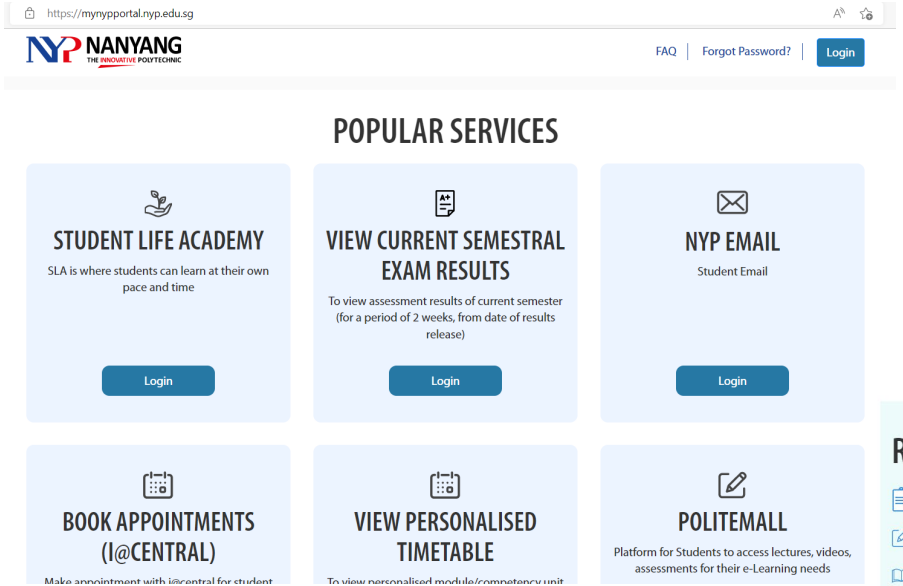
POLITEMail and Student Portal

LMS (Learning Management System) - POLITEMALL



- Delivery Plan
- Module materials (e.g. lecture notes, lecture recordings)
- Assessments (Tests, Assignments)
- Announcements
- Discussion forum

NYP Student Portal



- Check the semestral results
- Student resources

Accessing NYP resources

- Student Portal / POLITEMall / Email
  - Your login ID is your Office 365 email ID, which is: <admin_no>@mymail.nyp.edu.sg. Example: If you admin no is A123456, then the ID is A123456@mymail.nyp.edu.sg. If you do not know your admin no, pls let us know.
  - Your initial login password would be the combination of 'NYP', Date-of-Birth(DDMMYY) and last 3- alphanumeric of your NRIC number, Passport number or any other identification number you have used during your course application. e.g. NYP31011045A, if your DOB is 31st Jan 2010, NRIC: S1012345A. You should change your password first at NYP students' portal at https://mynypportal.nyp.edu.sg/
- Computer Lab PC Login
  - Login ID is your admin number, e.g. A123456 (not email ID)
  - Password is your registered mobile number

URLs
Student Portal : https://mynypportal.nyp.edu.sg/
POLITEMall: https://politemall.polite.edu.sg/

Q&A

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www.nyp.edu.sg