

TEACHING PLAN
ENG1003 FRESHMAN SEMINAR FOR ENGINEERING - FRESHMAN PROJECT

DESIGN OF PATH PLANNING ALGORITHM FOR AIRCRAFT OPERATION
(ONLINE TEACHING)

Instructors:

Dr. Li-Ta HSU, QR828, 3400-8061
lt.hsu@polyu.edu.hk
 Dr Weisong WEN, PQ408, 3400-8234
welson.wen@polyu.edu.hk

Teaching Assistant:

Mr. Man Hei CHENG (Melvin)
manhin.cheng@connect.polyu.hk

Teaching Assistants:

Miss Hiu Yi HO (Queenie)
hiu-yi.ho@connect.polyu.hk
 Miss Yan Tung LEUNG (Nikki)
weisong.wen@connect.polyu.hk

Sem. Week	Topics Taught	Planned Learning Outcomes	Assessment	Timetable, Venue Staff
Wk 3 (Sep 17)	<ul style="list-style-type: none"> Introduction to GitHub and how it can help in your study. Instruction on the installation of <i>Python</i> and the <i>Visual Studio Code</i> (a popular compiler of <i>Python</i> in Windows 10) Instruction on the installation of <i>GitHub</i> and the collaborative function in online platform <i>GitHub</i> website and <i>Visual Studio Code</i>. 	<ul style="list-style-type: none"> Understand the principle and applications of path-planning Global outlook Basic code programming Project management Work collaboration 		LEC/TUT: Friday 10:30-13:20, MS Team Li-Ta HSU Weisong WEN
Wk 4 (Sep 24)	<ul style="list-style-type: none"> Introduction to the importance of path planning in aviation and aerospace industries. Introduction to A* path planning algorithm. Introduction to the open-source code, Python Robotics, with path planning capability. Project management and collaboration 	<ul style="list-style-type: none"> Project management Hands-on coding experience Work collaboration Problem-solving skills Learning to learn skills 	Familiarization with GitHub and Python	LEC/TUT: Friday 10:30-13:20, MS Team Li-Ta HSU Weisong WEN

	<ul style="list-style-type: none"> Discussing the use of \$200 HKD budget to design and develop the path planning algorithm 			
Wk 5 (Oct 1)	Public Holiday			
Wk 6 (Oct 8)	<ul style="list-style-type: none"> Design the path planning algorithm considering different factors, distance, safety and economic cost. Idea on how to determine the factors in each location. (to extend the relationship of the study path in AE programme) 	<ul style="list-style-type: none"> Hands-on coding experience Work collaboration Problem-solving skills Learning to learn skills Creativity in engineering solution 		LEC/TUT: Friday 10:30-13:20, MS Team Li-Ta HSU Weisong WEN
Wk 7 (Oct 15)	<ul style="list-style-type: none"> Each group must finish their path planning algorithm before the end of next week. Introduction on the preparation of the manual of the code designed and developed by students 	<ul style="list-style-type: none"> Hands-on coding experience Work collaboration Problem-solving skills Learning to learn skills Creativity in engineering solution 		LEC/TUT: Friday 10:30-13:20, MS Team Li-Ta HSU Weisong WEN
Wk 8 (Oct 22)	<ul style="list-style-type: none"> Make a 10-minute video presentation (upload to GitHub). Discussion and outlook of the path planning for aviation and aerospace industries. 	<ul style="list-style-type: none"> Project management Problem-solving skills Technical Report and video presentation (every student shall present) Global Outlook 	<ul style="list-style-type: none"> Video Presentation (upload to GitHub) Report includes code manual and reflective essay (GitHub main page in Readme.md format) Confidential peer evaluation (Send to lt.hsu@polyu.edu.hk) 	LEC/TUT: Friday 10:30-13:20, MS Team Li-Ta HSU Weisong WEN

