

Workshop/Training Topic 1 Object-Oriented Java Programming

工作坊/ 實驗課（主題一）：物件導向 **JAVA** 程式設計

Course Aims（目的）：

This topic is aimed at providing students with an understanding of the object-oriented design and programming techniques. Java, a prime object-oriented programming language, is used to illustrate this programming paradigm. Android mobile programming API is used to apply the Java programming knowledge in mobile application development.

Course Structure（課程架構）：

- ▶ Java Introduction & Basic
- ▶ Objects and Classes
- ▶ Inheritance and Polymorphism
- ▶ Abstract Classes and Interface
- ▶ Exceptions and Assertions
- ▶ Interactive User Interface

Intended Learning Outcomes（期望學習成果）：

- Apply object-oriented programming paradigm to system designs.
- Recognize common design patterns used in object-oriented applications.
- Understand the basic structure of mobile application programming.

Workshop/Training Topic 2 (Option A): Small Antenna Design for Mobile Devices

工作坊/ 實驗課（主題二）：移動設備微型天綫設計

Aims（目的）：

The trainings teach step-by-step in Theory, CAD design techniques, hand-on PCB fabrication and parameters measurement on Antenna Designs. Through the training, students should know how to design and fabricate a small antenna for their own mobile devices according to their desired frequency, gain, bandwidth or impedance

Course Structure（課程架構）：

- ▶ Introduction to Antenna Fundamentals
- ▶ Antenna design, using AutoCAD and IE3D
- ▶ Printed Circuit Board fabrication
- ▶ Antenna Testing
- ▶ Analysis of Measurements

Intended learning outcomes（期望學習成果）：

- Describe and explain basic Antenna theory
- Draw simple antennas using AutoCAD and import into IE3D
- Simulate simple antennas using IE3D
- Measure antennas using Network Analyzers and a Compact Range Antenna Anechoic Chamber

Workshop/Training Topic 2 (Option B): Mobile Product Design

工作坊/ 實驗課（主題二）：移動產品設計

Aims（目的）：

This topic is aimed at exposing student to the basic concept of mobile application design and providing hands-on experience using such as Java programming. It aims to arouse the student's creativity and business sense in application design.

Course Structure（課程架構）：

- ▶ Introduction to mobile systems
- ▶ Analysis of niche market
- ▶ Concepts of project management
- ▶ UI and UX design

Intended learning outcomes（期望學習成果）：

- ▶ Discover user habits and market needs on mobile applications.
- ▶ Generate functional and usable design to enhance user experience in mobile apps.
- ▶ Build a prototype application to demonstrate the feasibility.