

## Course Content

Course Title (English)	Practical IoT Security Assessment
Course Title (Chinese)	物聯網資安檢測實務
Credit	3
Instructor	Adjunct Assistant Prof. Chin-Wei Tien 田謹維 兼任助理教授
Outline	<p>This course aims to conduct security testing and standard assessment for the entire IoT (Internet of Things) system. The course topics are designed at the four major aspects of the IoT ecosystem, including endpoint software and hardware, communication protocol and cloud virtualization environment. Conducting and discussion to IoT cyber security threats, the security testing standards and industry best practice requirements, this course would let students understand the industry technical requirements for IoT security assessment and have real experience of IoT vulnerability exploitation in real-world IoT devices.</p> <p>Topics Description</p> <ol style="list-style-type: none"><li>1 Course Preliminary</li><li>2 Intro. to cloud security standards</li><li>3 Cloud infrastructure and pentesting</li><li>4 Intro. to mobile App security standards</li><li>6 Android App security assessment (1) – Static analysis</li><li>7 Android App security assessment (2) – Dynamic analysis</li><li>8 iOS App security assessment (1) - Static analysis</li><li>9 Midterm</li><li>10 iOS App security assessment (2) – Dynamic analysis</li></ol>

	<p>11 Intro. to IoT device security standards.</p> <p>12 IoT Firmware analysis and pentesting (1) – Firmware preliminary</p> <p>13 IoT Firmware analysis and pentesting (2) – Firmware reversing and analysis</p> <p>14 IoT network security assessment</p> <p>16 IoT network protocol fuzzing</p> <p>17 Security assessment for Real-world IoT devices</p> <p>18 Finals</p>
Goal	<ul style="list-style-type: none"> <li>• Identify vulnerabilities in IoT device architectures, firmware, apps, networking and the cloud using software and hardware pentesting techniques.</li> <li>• Improve IoT security development, security testing concepts and technical capabilities to quickly integrate with the industry demands.</li> </ul>
English Teaching	<input type="checkbox"/> YES <span style="margin-left: 200px;"><input checked="" type="checkbox"/> NO</span>
Teaching Material	<input checked="" type="checkbox"/> English <span style="margin-left: 150px;"><input type="checkbox"/> Chinese</span>