清華大學 清華學院 國防菁英組 大三下軍事素養教育必修課

112 20 THC3304 國防資訊概論(1 學分)

Introduction of Defense Information Science (1-Credit Course)課程大綱

課程資訊 (Course Information)					
科號 Course Number	112 20 THC3304	學分 Credit	1	人數限制 Class Size	10
中文名稱 Course Title	國防資訊概論				
英文名稱 Course English Title	Introduction of Defense Information Science				
任課教師	劉慶元(LIU, CHING-YUAN)				
上課時間 Time	Sn	上課教室 Room	教育館 103 教室		
英語授課 Lecture by English	■是 □否				
學生修課條件 (選課系統之備註欄)	/Offered in English 將星計畫組必修,將星生優先修習,餘額予本國籍生選修但無法折抵役期,加退選加簽選課,Native Students Only				

本課程依國防部致清華大學「國人培育字第 1090193121 號」函：《國防部委託國立大學辦理國防學士班選訓合約書》附件「國內國立大學校院國防學士班教育中心運作實施規定」為大三軍事素養教育必修課。

Core capability to be cultivated by this course:

- ■ Enhancing ability to communicate and express oneself (70%)
- ■ Logical reasoning & critical thinking (10%)
- ■ Scientific thinking & reflection (10%)
- ■ Art & humanity (5%)
- ■ Diverse views & social practices (5%)

Course keywords:

Digital Battlefield, Artificial Intelligence in Defense, Cyber Warfare and Electronic Warfare, Information Security and Smart Defense. Course Description

課程簡述	Requested by the Ministry of Defense that all university Reserve Officers Training Corps (ROTC) cadets have to take this course compulsorily in order to strengthen cadets' knowledge of defense information science
	This course aims to prepare cadets' advanced knowledge of defense information science, of the evolution of war, of digital battlefield and

課程目標	transformation. Cadets learn artificial intelligence, cloud service, internet of things (IOT), and geographic information system in defense. Cadets need to learn cyber warfare and electronic warfare, radar system, command, control, communication, computer, intelligence, surveillance, and reconnaissance (C4ISR). Cadets also learn function of security operation center (SOC) and computer emergency response team (CERT), trend of defense information technology, and asymmetric warfare and smart defense. Finally, cadets can give answers of laws, threats, protection, management, and policy for the information security

A. Instructor: Dr. LIU, CHING-YUAN (劉慶元助理教授), NTHU Assistant Professor (清華大學清華學院兼任助理教授)

B. Credit: 1, Lecture given in English

C. Time: Sn

D. Lecture Room: Educational Hall, Room#103(教育館 103 室)

E. Students: 10, preference is given to compulsory third-year Defense Bachelor Program cadets, remaining quota for elective university students with ROC citizenship.

F. Reference Book: 施威銘，《最新計算機概論2020》出版日期：2020年6月 (旗標出版社，台北市) ISBN 978 986 3125 90 9. All the pertinent lecture notes are posted in advance ay the campus platform: https://eeclass.nthu.edu.tw

G Teaching Method(教學方式)

Lecture, Group Discussion, Assigned Project, no AI is applied.

H. Weekly Syllabus

Week of	Weekly Syllabus
1	Future Information Science/The Evolution of War: Digital Transformation and Digital Battlefield
2	Concept of Data, Information, and Information Dominance
3	The New Digital Technology and Application of Digital Battlefield
4	Artificial Intelligence in Defense
5	Cloud Service in Defense
6	Internet of Things (IOT) in Defense
7	Introduction for Computer/Geographic Information in Defense
8	Cyber Warfare and Electronic Warfare
9	Mid term exam
10	Radar System
11	Command, Control, Communication, and Computer
12	Intelligence, Surveillance, and Reconnaissance
13	Security Operation Center (SOC) and Computer Emergency Response Team (CERT)
14	Information Security Laws, Threats, and Protection
15	Information Security Management and Policy
16	Trend of Defense Information Technology

17	Asymmetric Warfare and Smart Defense
18	Final Exam

I. Evaluation: Mid term exam and final exam account for 50% each.

J. Remarks: Lecture will follow the order from the CDC to cope with the pandemics.