國立台灣科技大學 114學年 第2學期　課程大綱

Spring 2026 NTUST Course Outline

授課教師：謝佑明

Instructor:HSIEH,YO-MING

課程名稱：平行與分散式計算
在工程上之應用

Course Title：Parallel and Distributed Computing

2026/6/22

課程代號： CT5708701 Course Code 學分數： 3 Credits	必選修：選修/半學年 Required/Electve:Elective/Half Yr. 先修課程： Prerequisites
節次教室： Time/Location	M6(IB-602-2) M7(IB-602-2) M8(IB-602-2)
專業核心能力： Core Professional Competencies	
課程網址： Course Website	
課程宗旨： Course Objectives	1. Students will develop understandings toward parallel and distributed computing, including hardware architecture and various programming models. 2. Students will gain the ability to use parallel computers for solving engineering problems.
課程大綱： Outline of Lectures	* Efficient C/C++ Programming * Programming in the Linux environment * Multi-core and multithread programming through OpenMP * Many-core programming through OpenCL or CUDA. * Parallel and Distributed Computing through MPI * Modern parallel and distributed programming (e.g. SYCL, OneAPI, Hadoop, ...)
授課方式： Method of Instruction	講授 Lecture：80% 分組討論 Group discussion：0% 案例研討 Case study：20% 操做練習 Practical exercises：0% 講授 Lecture：%
教科書： Textbooks	n/a
參考書目： References	・Williams (2012), C++ Concurrency in Action: Practical Multithreading, Manning Publications, ISBN 978-1933988771. ・Cambell (2011), Parallel Programming with Microsoft Visual C++: Design Patterns for Decomposition and Coordination on Multicore Architectures, Microsoft Press, ISBN 978-0735651753. ・Reinders, James (2007). Intel Threading Building Blocks: Outfitting C++ for Multi-Core Processor Parallelism
修課須知： Notice	
評量方式： Grading	

	• 30%: Exams • 30%: Personal term project • 30%: Assignments • 10%: Class participation
備註說明： Notes	• C/C++ programming, Engineering Mathematics(linear algebra, vector, matrices) • Passionate about programming!