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| 課程名稱(中文) : | 平行與分散式系統軟體開發 | | | 開課單位 : | 資訊工程學系 |
| 課程名稱(英文) : | Software Development for Parallel and Distributed Systems | | | 課程代碼 : | 4105608 |
| 授課教師 : | 柯仁松 | | | | |
| 學分數 : | 3 | 必/選修 : | 選 | 開科年級 : | 研究所 |
| 先修科目或先備能力 : | 程式設計 | | | | |
| 課程概述 : | <ul style="list-style-type: none"> Bringing the students up-to-date in research in extreme scale parallel and distributed systems Introducing software, algorithmic, and analytical tools and techniques that are necessary to perform research in this area | | | | |
| 學習目標 : | <ul style="list-style-type: none"> Explain current research issues in extreme scale parallel and distributed systems Apply techniques to investigate, model, and simulate extreme scale parallel and distributed systems Software engineering concepts for team development and project management in a globally distributed manor | | | | |
| 教科書 : | <ul style="list-style-type: none"> Mostly papers from recent top conferences in PDS or HPC Some from online tutorials | | | | |

| 單元主題 | 內容綱要 | 分配時數 | | | | 核心能力 | 備註 |
|---|---|------|----|----|----|---|----|
| | | 講授 | 示範 | 習作 | 其他 | | |
| Introduction | <ul style="list-style-type: none"> Parallel and Distributed Systems | 6 | | | | <input checked="" type="checkbox"/> A1 <input checked="" type="checkbox"/> A2 <input checked="" type="checkbox"/> A3 <input checked="" type="checkbox"/> A4 <input checked="" type="checkbox"/> A5 <input checked="" type="checkbox"/> A6 <input type="checkbox"/> A7 <input type="checkbox"/> A8 | |
| Team development and project management | <ul style="list-style-type: none"> Software engineering concepts Geographic, time related, cultural, economic and management issues Global software project management Scheduling, estimating, coordinating, and monitoring of global base projects | 15 | | 3 | | <input checked="" type="checkbox"/> A1 <input checked="" type="checkbox"/> A2 <input checked="" type="checkbox"/> A3 <input checked="" type="checkbox"/> A4 <input checked="" type="checkbox"/> A5 <input checked="" type="checkbox"/> A6 <input type="checkbox"/> A7 <input type="checkbox"/> A8 | |

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| | <ul style="list-style-type: none"> ● Culturally based leadership and conflict resolutions ● Strategic management ● Offline software design and scheduling ● Documenting software architecture for remote development ● Coordinating and scheduling asynchronous for chasing the sun development ● Team portals for centralize management | | | | | | |
| Programming paradigm | <ul style="list-style-type: none"> ● MPI ● GPU/MIC ● Mapreduce ● hybrid | 9 | 3 | | <input checked="" type="checkbox"/> A1 <input checked="" type="checkbox"/> A2 <input checked="" type="checkbox"/> A3 <input checked="" type="checkbox"/> A4 <input checked="" type="checkbox"/> A5 <input checked="" type="checkbox"/> A6 <input type="checkbox"/> A7 <input type="checkbox"/> A8 | | |
| Interconnecti on | <ul style="list-style-type: none"> ● Basics ● Interconnect technology ● New interconnect proposals ● Interconnect modeling and simulation methods ● System software and communication sub-systems | 9 | 3 | | <input checked="" type="checkbox"/> A1 <input checked="" type="checkbox"/> A2 <input checked="" type="checkbox"/> A3 <input checked="" type="checkbox"/> A4 <input checked="" type="checkbox"/> A5 <input checked="" type="checkbox"/> A6 <input type="checkbox"/> A7 <input type="checkbox"/> A8 | | |
| Project presentation | | | 6 | | <input checked="" type="checkbox"/> A1 <input checked="" type="checkbox"/> A2 <input checked="" type="checkbox"/> A3 <input checked="" type="checkbox"/> A4 <input checked="" type="checkbox"/> A5 <input checked="" type="checkbox"/> A6 <input type="checkbox"/> A7 <input type="checkbox"/> A8 | | |

A1.具有資訊工程與科學領域之專業知識。

A2.具有創新思考、問題解決、獨立研究之能力。

A3.具有撰寫中英文專業論文及簡報之能力。

A4.具有策劃及執行專題研究之能力。

A5.具有溝通、協調、整合及進行跨領域團隊合作之能力。

A6.具有終身學習與因應資訊科技快速變遷之能力。

A7.認識並遵循學術與工程倫理。

A8.具有國際觀及科技前瞻視野。

教學要點概述：

1. 教材編選： 自編教材 教科書作者提供

2. 教學方法： 投影片講述 板書講述

3. 評量方法： 上課點名 0%, 小考 0%, 作業 0%, 程式實作 0%,
 實習報告 0%, 專案 0%, 期中考 0%, 期末考 0%,
 期末報告 100%, 其它 10%

4. 教學資源： 課程網站 教材電子檔供下載 實習網站

5. 教學相關配合事項：