<table>
<thead>
<tr>
<th>科目名稱</th>
<th>嵌入式軟體設計特論 (Q3-023/Q3-54600)</th>
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<tbody>
<tr>
<td>學分數</td>
<td>3</td>
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<tr>
<td>開課學期</td>
<td>上學期</td>
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</table>
| 教學目標 | 1. 瞭解嵌入式軟體開發與設計之原理與技術  
          2. 經由文獻探討瞭解嵌入式行動裝置電源管理技術之發展  
          3. 瞭解嵌入式行動裝置之電源管理與嵌入式軟體設計 |
| 教學大綱 | 1. 嵌入式軟體設計  
          (1) Introduction to embedded system  
          (2) Embedded system programming  
          (3) Programmer’s view of computer organization  
          (4) Mixing C and Assembly Language Programming  
          (5) Input/Output Programming  
          (6) Concurrent Software and Scheduling  
          (7) Shared Memory and Memory Management  
          (8) System initialization  
          2. 嵌入式行動裝置電源管理技術  
          (1) Introduction to Power Management in Portable  
              Personal Devices  
          (2) Hierarchical View of Energy Conversation  
          (3) Low Power Design Techniques  
          (4) Energy Optimized Software  
          (5) Batteries and Displays for Mobile Devices  
          (6) Power Management Integrated Circuits  
          (7) System-Level Approach  
          (8) Future Trends in Power Management  
          3. 文獻閱讀報告與討論 |
| 參考教材 | 1. *Fundamentals of Embedded Software*  
          – where C and Assembly meet  
          2. Power Management in Mobile Devices  
          3. 參考文獻 |
| 講授方式 | 課堂講解與討論，文獻閱讀、報告與討論。 |
| 成績考評 | 出席及參與討論狀況，作業練習，文獻閱讀報告。 |
## Course Name
SPECIAL TOPICS IN EMBEDDED SOFTWARE DESIGN

## Credits
3

## Period
Fall Semester

## Objects
1. Understanding the principles and techniques of embedded software development
2. Understanding the development of power management techniques for embedded mobile devices
3. Understanding how the techniques of power management relate and affect embedded software development

## Schedule
1. Embedded Software Design
   (1) Introduction to embedded system
   (2) Embedded system programming
   (3) Programmer’s view of computer organization
   (4) Mixing C and Assembly Language Programming
   (5) Input/Output Programming
   (6) Concurrent Software and Scheduling
   (7) Shared Memory and Memory Management
   (8) System initialization

2. Power management in mobile devices
   (1) Introduction to Power Management in Portable Personal Devices
   (2) Hierarchical View of Energy Conversation
   (3) Low Power Design Techniques
   (4) Energy Optimized Software
   (5) Batteries and Displays for Mobile Devices
   (6) Power Management Integrated Circuits
   (7) System-Level Approach
   (8) Future Trends in Power Management

3. Presentation of literature study

## References
1. *Fundamentals of Embedded Software – where C and Assembly meet*
<table>
<thead>
<tr>
<th>Lecture type</th>
<th>Classroom lecture and discussion, literature study and presentation</th>
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<tbody>
<tr>
<td>Grade</td>
<td>Participation, home work, reading report and presentation</td>
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<tr>
<td>Others</td>
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