<table>
<thead>
<tr>
<th>科目名稱</th>
<th>即時系統 (Q352600/ Q3-023)</th>
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<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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### 教學目標
1. 瞭解即時系統與基本即時系統軟體設計
2. 瞭解即時任務排程(Task Scheduling)之理論與技術
3. 經由文獻研讀與討論瞭解即時系統之發展與應用

### 教學大綱

**※講義課程大綱：**
1. 即時系統概念與應用簡介
2. 即時系統基本架構與即時任務排程(Task Scheduling)
3. 基礎即時任務排程(Task Scheduling)理論與技術
4. Fixed-Priority Servers
5. Dynamic Priority Servers
7. Overload Handling
8. Kernel and Application Design Issues
9. Introduction to Real-Time Operating Systems

**※文獻閱讀討論大綱：**
1. Real-Time Scheduling: Rate-Monotonic and EDF Scheduling
2. Real-Time in Embedded Systems
3. Real-Time Scheduling in Multimedia Applications

### 參考教材
1. 自編教材
2. 主要教科書：
   *Hard Real-Time Computing Systems – Predictable Scheduling Algorithms and Applications*
   作者：Giorgio C. Buttazzo,
3. 相關文獻

### 講授方式
1. 課堂講解與討論，作業演練。
2. 文獻閱讀、報告(Presentation)與討論。

### 成績考評
出席狀況，作業練習，文獻閱讀報告，期末考。

### 備註
<table>
<thead>
<tr>
<th>Course Name</th>
<th>Real-Time Systems (Q352600/Q3-023)</th>
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<tbody>
<tr>
<td>Credits</td>
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<tr>
<td>Period</td>
<td>Fall Semester</td>
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|                   | 2. Understand the theory and techniques of real-time scheduling  
|                   | 3. Getting familiar with the advances in techniques of real-time systems and their applications through literature study |
| Schedule          | A. Lecture and Presentation:  
|                   | 1. Introduction to Real-Time System: Concepts and Applications  
|                   | 2. Real-Time System Architecture and Task Scheduling  
|                   | 3. Fundamental Real-Time Scheduling Theory and Techniques  
|                   | 4. Fixed-Priority Servers  
|                   | 5. Dynamic Priority Servers  
|                   | 7. Overload Handling  
|                   | 8. Kernel and Application Design Issues  
|                   | 9. Introduction to Real-Time Operating Systems  
|                   | B Literature Study and Discussion:  
|                   | 1. Real-Time Scheduling: Rate-Monotonic and EDF Scheduling  
|                   | 2. Real-Time in Embedded Systems  
|                   | 3. Real-Time Scheduling in Multimedia Applications |
| References        | 1. Hand-out of Lecture Notes  
|                   | 2. Main Text:  
|                   | *Hard Real-Time Computing Systems – Predictable Scheduling Algorithms and Applications*  
|                   | Author: Giorgio C. Buttazzo,  
|                   | 3. Related literature |
| Lecture type      | 1. Classic classroom lecture and discussion  
|                   | 2. Literature study, discussion and presentation |
| Grade             | Attendance and participation, homework exercises, presentation of literature study, term report, term exam. |
| Others            |                                                                 |