

淡江大學 104 學年度第 2 學期課程教學計畫表

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| 課程名稱   | 全球科技革命   | 授課<br>教師 | 楊龍杰<br>YANG LUNG-JIEH |
|  | GLOBAL TECHNOLOGY REVOLUTION   |          |                       |
| 開課系級   | 土木系營企二A  | 開課<br>資料 | 必修 單學期 2學分            |
|  | TECBB2A  |          |                       |
| 學 門 教 育 目 標  |  |          |                       |
| <p>讓學生瞭解科技發展的概況以及其對人類社會、環境及全球各種可能造成的影響和衝擊，並希望能透過課程的設計，希望於本科系專業知識領域之外，亦能增加基礎科技知識，培養學生分析與解決問題的能力，與提高同學們主動學習的意願，建立審慎的學習態度，更有助於未來的學業及生涯規劃。</p> |  |          |                       |
| 校 級 基 本 素 養  |  |          |                       |
| <p>A. 全球視野。<br/>B. 資訊運用。<br/>C. 洞悉未來。<br/>D. 品德倫理。<br/>E. 獨立思考。<br/>F. 樂活健康。<br/>G. 團隊合作。<br/>H. 美學涵養。</p>                                 |  |          |                       |
| 課程簡介   | 介紹宇宙來源,探索太空,生態環境,能源,微奈米,半導體,機器人與分子生物等科技.   |          |                       |
|  | <p>The course presents an introduction to the historical background and general aspects of the global technological revolutions in quantum, information and biochemical technologies. The potential impacts of these technologies including micro-system technology and nanotechnology in the future will be also mentioned. The points of our discussion include environmental and energy problems as well.</p> |          |                       |

本課程教學目標與目標層級、校級基本素養相關性

一、目標層級(選填)：

- (一)「認知」(Cognitive 簡稱C)領域：C1 記憶、C2 瞭解、C3 應用、C4 分析、C5 評鑑、C6 創造
- (二)「技能」(Psychomotor 簡稱P)領域：P1 模仿、P2 機械反應、P3 獨立操作、P4 聯結操作、P5 自動化、P6 創作
- (三)「情意」(Affective 簡稱A)領域：A1 接受、A2 反應、A3 重視、A4 組織、A5 內化、A6 實踐

二、教學目標與「目標層級」、「校級基本素養」之相關性：

- (一)請先將課程教學目標分別對應前述之「認知」、「技能」與「情意」的各目標層級，惟單項教學目標僅能對應C、P、A其中一項。
- (二)若對應「目標層級」有1~6之多項時，僅填列最高層級即可(例如：認知「目標層級」對應為C3、C5、C6項時，只需填列C6即可，技能與情意目標層級亦同)。
- (三)再依據所訂各項教學目標分別對應其「校級基本素養」。單項教學目標若對應「校級基本素養」有多項時，則可填列多項「校級基本素養」。(例如：「校級基本素養」可對應A、AD、BEF時，則均填列。)

| 序號 | 教學目標(中文)   | 教學目標(英文)  | 相關性  |        |
|----|------------|---|------|--------|
|    |            |   | 目標層級 | 校級基本素養 |
| 1  | 建立現代科技基本常識 | The students will be able to understand the historical background, basic concepts, principles of application and future perspectives of global technologies, and realize its influences and potential impacts on energy and high tech, such as nanotechnology and biomedical technology, etc. | C2   | ABC    |
| 2  | 了解現代科技走向   | The students shall be aware of the development, status and future trends of the major areas of technology.  | C2   | ABC    |
| 3  | 了解現代科技衝擊   | The students shall be able to recognize that many of the social and environmental changes are due to the evolution of technology; then, they may reasonably address kinds of issues, either occurring or potential, in social, ethical, environmental or energy, etc. aspects.                | C2   | ABC    |

教學目標之教學方法與評量方法

| 序號 | 教學目標       | 教學方法  | 評量方法         |
|----|------------|-------|--------------|
| 1  | 建立現代科技基本常識 | 講述、討論 | 紙筆測驗、報告、上課表現 |
| 2  | 了解現代科技走向   | 講述、討論 | 紙筆測驗、報告、上課表現 |
|    |            |       |              |

|   |          |       |              |
|---|----------|-------|--------------|
| 3 | 了解現代科技衝擊 | 講述、討論 | 紙筆測驗、報告、上課表現 |
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授 課 進 度 表

| 週次 | 日期起訖                    | 內 容 (Subject/Topics)   | 備 註          |
|----|-------------------------|--|--------------|
| 1  | 105/02/15~<br>105/02/21 | Introduction   |              |
| 2  | 105/02/22~<br>105/02/28 | Chapter 1: Birth of Universe   |              |
| 3  | 105/02/29~<br>105/03/06 | Chapter 2: Exploring Outer Space   |              |
| 4  | 105/03/07~<br>105/03/13 | Chapter 3: Ecological Environment  |              |
| 5  | 105/03/14~<br>105/03/20 | Chapter 4: Energy Techonology  | 3/17三節課補3/31 |
| 6  | 105/03/21~<br>105/03/27 | Chapter 5: Small Technology  |              |
| 7  | 105/03/28~<br>105/04/03 | Chapter 6: Information Technology (IT)   | 3/31老師出國開會停課 |
| 8  | 105/04/04~<br>105/04/10 | 教學觀摩週  |              |
| 9  | 105/04/11~<br>105/04/17 | Chapter 7: IT and Web  | 4/14三節課補3/31 |
| 10 | 105/04/18~<br>105/04/24 | 期中考試週  |              |
| 11 | 105/04/25~<br>105/05/01 | Chapter 8: Artificial Intelligence (AI) and Robotics & presentation of group 1 |              |
| 12 | 105/05/02~<br>105/05/08 | Chapter 8: AI and Robotics & presentation of group 2                           |              |
| 13 | 105/05/09~<br>105/05/15 | Chapter 9: Molecular Biology & presentation of group 3                         |              |
| 14 | 105/05/16~<br>105/05/22 | Chapter 9: Molecular Biology & presentation of group 4                         |              |
| 15 | 105/05/23~<br>105/05/29 | Chapter 10: Biomedical Technology & presentation of group 5                    |              |
| 16 | 105/05/30~<br>105/06/05 | Chapter 10: Biomedical Technology & presentation of group 6                    |              |
| 17 | 105/06/06~<br>105/06/12 | 端午節放假  |              |
| 18 | 105/06/13~<br>105/06/19 | 期末考試週  |              |

修課應  
注意事項

1.(Attendance) According to the rule of Tamkang University, one who is absent beyond 1/3 of the whole class time is not allowed for attending the final exam. One time of absence at any roll call will lose him/her 2 scores.  
2.(Mark of usual) All students in this class are divided into several groups. Each group is scheduled to give an oral presentation of 30 min (3 min for each person) at least and they should hand in one integrated paper report. The title and the content of the presentation should be relevant to this course. The presentation score of each group is determined by the audience and Prof. Yang by 50%-50% weighting ratio. Additionally, each student should clearly mention his/her contribution to his/her group in the final term report.

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| 教學設備         | 電腦   |
| 教材課本         | Global Technology Revolution, edited by Lung-Jieh Yang   |
| 參考書籍         | You can download the textbook file from<br><a href="http://tsp.ec.tku.edu.tw/QuickPlace/ljyang/PageLibrary4825705A002F9E0F.nsf/h_081F3C465D0F487B4825705A002FFEE5/44053DA20F225D6C48257BDA0009EF21/?OpenDocument">http://tsp.ec.tku.edu.tw/QuickPlace/ljyang/PageLibrary4825705A002F9E0F.nsf/h_081F3C465D0F487B4825705A002FFEE5/44053DA20F225D6C48257BDA0009EF21/?OpenDocument</a> (not for commercial usage.) |
| 批改作業<br>篇數   | 1 篇 (本欄位僅適用於所授課程需批改作業之課程教師填寫)  |
| 學期成績<br>計算方式 | ◆出席率： 10.0 %   ◆平時評量：       %   ◆期中評量：30.0 %<br>◆期末評量：30.0 %<br>◆其他 〈final report〉：30.0 %  |
| 備 考          | 「教學計畫表管理系統」網址： <a href="http://info.ais.tku.edu.tw/csp">http://info.ais.tku.edu.tw/csp</a> 或由教務處<br>首頁〈網址： <a href="http://www.acad.tku.edu.tw/CS/main.php">http://www.acad.tku.edu.tw/CS/main.php</a> 〉業務連結「教師教學<br>計畫表上傳下載」進入。<br><b>※不法影印是違法的行為。請使用正版教科書，勿不法影印他人著作，以免觸法。</b>  |