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## ②國玄東華大學

## 課 網 Course Outline

## 材料科學與工程學系國際組

| 中文課程名稱<br>Course Name in<br>Chinese  |   | 陶瓷材料                         |                  |     |   |                               |  |
|--|---|------------------------------|------------------|-----|---|-------------------------------|--|
| 英文課程名稱<br>Course Name in<br>English  |   | Ceramics                     |                  |     |   |                               |  |
| 科目代碼<br>Course Code  |   | MSD1130                      | 班 別<br>Degree    |     | 博士班<br>Ph. D.                           |                               |  |
| 修別<br>Type   |   | 選修<br>Elective               | 學分數<br>Credit(s) | 3.0 | 時 數<br>Hour(s)                          | 3. 0                          |  |
| 先修課程<br>Prerequisite   |   |                              |                  |     |   |                               |  |
| 課程目標   |   |                              |                  |     |   |                               |  |
|  |   |                              | e Objectives     |     |   |                               |  |
| 本課程主要是把陶瓷材料介紹給初學的學生,使初學者能夠了解陶瓷的性質及未來發展的重要性。 This course is designed to introduce ceramic materials to beginner students so that they can understand the nature of ceramics and the importance of their future development. |   |                              |                  |     |   |                               |  |
| 系教育目標<br>Dept.'s Education Objectives  |   |                              |                  |     |   |                               |  |
| 1  | 建立專業知識基礎<br>Set the professional knowledge foundation   |                              |                  |     |   |                               |  |
| 2  | 培養專業實驗技能<br>Train the professional experimental skill   |                              |                  |     |   |                               |  |
| 3  | 養成獨立研究能力<br>Insure capability of independent research   |                              |                  |     |   |                               |  |
| 4  | 養成優質社會人格 Form the positive social character   |                              |                  |     |   |                               |  |
| 5  | 開展國際視野<br>Develop global vision   |                              |                  |     |   |                               |  |
|  |   | 系專業能力<br>Basic Learning Outo | comes            |     | 力相關性<br>Correlat<br>between<br>Objectiv | Course<br>es and<br>Education |  |
| A  | 具備材料科學所需的進階物理、化學及數學的知識。<br>Acquire required advanced physical, chemical, and mathematic<br>knowledge for materials science and engineering. |                              |                  |     | 0                                       |                               |  |

| В  | 具備材料科學的進階專業知識,並能應用於解決工程上之問題。<br>Acquire required advanced professional knowledge for materials<br>science and engineering, applicable in solving engineering<br>problems. | • |  |  |  |
|--|---|---|--|--|--|
| С  | 具備獨立研究之能力。<br>Equipped with capabilities of independent research.   |   |  |  |  |
| D  | 具備專業道德及責任感,與良好的溝通及團隊合作的能力。<br>Acquire professional morality and responsibility, and<br>capability of quality communication and team cooperation.                          | 0 |  |  |  |
| Е  | 具備適當的英文能力,應用於學習與交流。<br>Acquire English capability used for learning and interaction.  | 0 |  |  |  |
| 圖示說明Illustration : ● 高度相關 Highly correlated ○中度相關 Moderately correlated  |   |   |  |  |  |
| 課程大綱<br>Course Outline   |   |   |  |  |  |
| 內容主要有陶瓷結構、陶瓷缺陷反應、反應動力學(如氧化反應)、陶瓷燒結反應、相變化、微結構、電磁與光性質等。The main topics are ceramic structures, ceramic defect reactions, reaction kinetics (e.g. oxidation reactions), ceramic sintering reactions, phase changes, microstructures, electromagnetic and optical properties, etc. |   |   |  |  |  |
| 資源需求評估(師資專長之聘任、儀器設備的配合・・・等)<br>Resources Required (e.g. qualifications and expertise, instrument and equipment, etc.)  |   |   |  |  |  |
| 以具有所開課程專長之教師擔任授課;資料整理所需之電腦、影印機;討論所需之投影機、幻燈機等教學設備。Teachers with expertise in the courses offered; computers for data organization, copy machines, projectors.   |   |   |  |  |  |
| 課程要求和教學方式之建議<br>Course Requirements and Suggested Teaching Methods   |   |   |  |  |  |

以指定教材按預訂進度進行教學。教學以講授及討論為主,必要時以相關文獻資料加以補充。The course will be taught according to the scheduled of the assigned materials. Teaching

其他 Miscellaneous

is based on lectures and discussions, supplemented by relevant literature when

necessary.