# Tamkang University Academic Year 114, 2nd Semester Course Syllabus

| Course Title | INTRODUCTION AND APPLICATION TO BIG DATA ANALYSIS | Instructor | CHIA-LING CHANG |
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| Course Class | TABXB3P<br>DEPARTMENT OF INFORMATION AND LIBRARY SCIENCE, 3P | Details | ◆ Blended Course<br>◆ Selective<br>◆ One Semester<br>◆ 2 Credits |
| Relevance to SDGs | SDG5 Gender equality<br>SDG8 Decent work and economic growth<br>SDG9 Industry, Innovation, and Infrastructure<br>SDG10 Reducing inequalities | | |

## Departmental Aim of Education

Our mission is to educate and train library and information professionals.

## Subject Departmental core competences

A. To understand concepts relating to library and information science and to grasp the relevant trends.(ratio:5.00)

B. To acquire professional abilities to develop, organize, preserve and integrate all sorts of information resources.(ratio:15.00)

C. To understand concepts relating to information technology and systems, and be able to put them in use.(ratio:30.00)

D. To acquire communication and coordination skills required for the information services. (ratio:20.00)

E. To acquire management skills required by different types of libraries and information organizations.(ratio:10.00)

F. To acquire professional skills to manage electronic documents and archives.(ratio:10.00)

G. To acquire integration ability of library services and traditional publishing.(ratio:5.00)

H. To acquire integration ability of library services and digital publishing.(ratio:5.00)

## Subject Schoolwide essential virtues

1. A global perspective. (ratio:10.00)

2. Information literacy. (ratio:25.00)

3. A vision for the future. (ratio:10.00)

4. Moral integrity. (ratio:10.00)

5. Independent thinking. (ratio:20.00)

6. A cheerful attitude and healthy lifestyle. (ratio:5.00)

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| 7. A spirit of teamwork and dedication. (ratio:10.00) | | |
| 8. A sense of aesthetic appreciation. (ratio:10.00) | | |

| Course Introduction | The purpose of this course is to guide students to construct big data thinking brains and interpret big data through the introduction and application of big data, and teach practical big data analysis, so that students can understand data through data analysis. |
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**The correspondences between the course's instructional objectives and the cognitive, affective, and psychomotor objectives.**

Differentiate the various objective methods among the cognitive, affective and psychomotor domains of the course's instructional objectives.

I. Cognitive : Emphasis upon the study of various kinds of knowledge in the cognition of the course's veracity, conception, procedures, outcomes, etc.

II.Affective : Emphasis upon the study of various kinds of knowledge in the course's appeal, morals, attitude, conviction, values, etc.

III.Psychomotor: Emphasis upon the study of the course's physical activity and technical manipulation.

| No. | Teaching Objectives | objective methods |
|---|---|---|
| 1 | Students will understand and be able to construct big data thinking | Cognitive |
| 2 | Students will understand and be able to apply the big data mining methods of Classification | Cognitive |
| 3 | Students will understand and be able to apply the big data mining methods of Cluster Analysis. | Cognitive |
| 4 | Students will understand and be able to apply the big data mining methods of Association Analysis | Cognitive |

The correspondences of teaching objectives : core competences, essential virtues, teaching methods, and assessment

| No. | Core Competences | Essential Virtues | Teaching Methods | Assessment |
|---|---|---|---|---|
| 1 | ABCDEFGH | 126 | Lecture, Discussion | Discussion(including classroom and online), Report(including oral and written), classroom activity |
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| 2 | CDEFGH | 345 | Lecture, Discussion, Practicum | Study Assignments, Discussion(including classroom and online), Report(including oral and written) |
|---|--------|-----|-------------------------------|----------------------------------------------------------------------------------------------------|
| 3 | ACDEFGH | 1234578 | Lecture, Discussion | Discussion(including classroom and online), Report(including oral and written), Activity Participation |
| 4 | ABCDF | 1235 | Lecture, Discussion | Study Assignments, Discussion(including classroom and online), Report(including oral and written) |

## Course Schedule

| Week | Date | Course Contents | Note |
|------|------|-----------------|------|
| 1 | 115/02/23 ~ 115/03/01 | Intorduction | |
| 2 | 115/03/02 ~ 115/03/08 | Introduction to Big data | |
| 3 | 115/03/09 ~ 115/03/15 | Data and Exploration | |
| 4 | 115/03/16 ~ 115/03/22 | statistic and big data 1 | (Online Asynchronous Instruction) |
| 5 | 115/03/23 ~ 115/03/29 | statistic and big data 2 | (Online Asynchronous Instruction) |
| 6 | 115/03/30 ~ 115/04/05 | Introduction to Weka and Classification Analysis 1 | |
| 7 | 115/04/06 ~ 115/04/12 | Teaching administration observation period  (No class) | |
| 8 | 115/04/13 ~ 115/04/19 | Classification Analysis | |
| 9 | 115/04/20 ~ 115/04/26 | Personal report | |
| 10 | 115/04/27 ~ 115/05/03 | Cluster Analysis 1 | |
| 11 | 115/05/04 ~ 115/05/10 | Cluster Analysis 2 | |
| 12 | 115/05/11 ~ 115/05/17 | Time serial Analysis | (Online Asynchronous Instruction) |
| 13 | 115/05/18 ~ 115/05/24 | open databases and big data analysis | (Online Asynchronous Instruction) |
| 14 | 115/05/25 ~ 115/05/31 | Final group report 1 | |
| 15 | 115/06/01 ~ 115/06/07 | Final group report 2 | |
| 16 | 115/06/08 ~ 115/06/14 | Final group report 3 | |

| 17 | 115/06/15～ 115/06/21 | Final Week of Diverse Assessments/Flexible Teaching Week for Teachers | |
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| 18 | 115/06/22～ 115/06/28 | Flexible Teaching Week for Teachers | Be sure to confirm your grades for the entire semester |

| Key capabilities | Information Technology<br>Problem solving |
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| Interdisciplinary | |
| Distinctive teaching | |
| Course Content | Logical Thinking |
| Requirement | 1. Be sure to attend your first class. If you have any questions, please ask the question and discuss it with the teacher in the first class.<br>2. If you do not attend the first class, please do not select this class.<br>3. This is a bilingual course. The teaching method is Keywords are only taught in English. However, the entire lecture, including practical explanations and software, is only in Chinese. If you cannot accept it, please do not choose this course.<br>4. The second class is classroom activities (data analysis and implementation), accounting for 30% of the entire semester, and must be completed even if you ask for leave (if you have any questions, you can discuss with the teacher)<br>5. There will be no midterm or final exams, and the assessment method will be in the form of individual and group reports. |
| Textbooks and Teaching Materials | Self-made teaching materials:Handouts<br>Using teaching materials from other writers:Handouts, Videos |
| References | |
| Grading Policy | ◆ Attendance： 10.0 ％ ◆ Mark of Usual： ％ ◆ Midterm Exam： 30.0 ％<br>◆ Final Exam： 30.0 ％<br>◆ Other〈classroom activity〉：30.0 ％ |

| Note | This syllabus may be uploaded at the website of Course Syllabus Management System at https://web2.ais.tku.edu.tw/csp or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at http://www.acad.tku.edu.tw/CS/main.php. |
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