1. **Title of the module**

COMP6490 (CO649) – Data Mining

1. **Division or partner institution which will be responsible for management of the module**

Division of Computing, Engineering, Mathematical Sciences (CEMS)

1. **The level of the module (Level 4, Level 5, Level 6 or Level 7)**

Level 6

1. **The number of credits and the ECTS value which the module represents**

15 credits (7.5 ECTS)

1. **Which term(s) the module is to be taught in (or other teaching pattern)**

Autumn or Spring

1. **Prerequisite and co-requisite modules**

Pre-requisite: COMP5320 Database Systems

1. **The course(s) of study to which the module contributes**

BSc Computing, BSc Computing (Consultancy)

BSc Computer Science for Health

BSc Business Information Technology

BSc Software Engineering

plus “Year-in-Industry” variants

1. **The intended subject specific learning outcomes.  
   On successfully completing the module students will be able to:**
   1. Understand the motivation for data mining in the context of business and information technology [B7,C3]
   2. Know how data mining is used, particularly for marketing, sales and customer relationship management [A4, A10, B6, B7, D3]
   3. Understand the concepts and main techniques in data mining [A2 ,B5, B7, C2, C3]
   4. Be able to describe the differences between the major data mining tasks [A4, B1, B4, B7, B10, C3]
   5. Have an understanding of the knowledge discovery process [B1, B3, C4]
   6. Understand the purpose of the main tasks involved in data preparation for mining [A4, B3, B9, C2, C3]
   7. Gain hands-on experience in using a state-of-the-art data mining tool [A2, A4, B1, B3, B5, B10, C4]
2. **The intended generic learning outcomes.  
   On successfully completing the module students will be able to:**
   1. Analyse a problem, design and find a solution [A4, B3, B7, B10, C3, C4]
   2. Make succinct presentation to a range of audience [B2, D2]
   3. Make effective use of IT facilities [D3]
   4. Manage their own learning and time [D5]
3. **A synopsis of the curriculum**

Data mining is a process of extracting, from a large amount of data, interesting patterns that are non-trivial, hidden, new and potentially useful. It is a rapidly growing field and is becoming important because with the increasing quantity and variety of online data collections by many organizations and commercial enterprises, there is a high potential value of patterns discovered in those collections.   
  
This module looks at different data mining techniques and gives you the chance to use a state-of-the-art data-mining tool and evaluate the quality of the discovered knowledge. The topics include: introduction to data mining and knowledge discovery process, data description, , data pre-processing, attribute selection, market basket analysis and association rules, classification, clustering, outlier detection, post-processing, social impact and trend of data mining.

1. **Reading list (Indicative list, current at time of publication. Reading lists will be published annually)**

Berry, M., and Linoff, G. (2012). *Data Mining Techniques: For Marketing, Sales and Customer Relationship Management*.

Bramer, M. (2007). Principles of Data Mining.

Han, J., and Kamber, M. (2012). *Data Mining: concepts and techniques*.

Tan, P., Steinbachm, M., and Kumar, V. (2013). *Introduction to Data Mining*.

Witten, I. H., and Frank, E. (2011). *Data Mining: Practical Machine Learning Tools and Techniques*.

1. **Learning and teaching methods**

Total contact hours: 28 hours

Private study hours: 122 hours

Total study hours: 150 hours

1. **Assessment methods**
   1. Main assessment methods

Assessment 1- Class Exercises (10%)

Assessment 2 - Group Project (30%)

Assessment 3 - In Class test (10%)

Examination (50%)

13.2 Reassessment methods

Like for like.

1. ***Map of module learning outcomes (sections 8 & 9) to learning and teaching methods (section12) and methods of assessment (section 13)***

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Module learning outcome** | *8.1* | *8.2* | *8.3* | *8.4* | *8.5* | *8.6* | *8.7* | *9.1* | *9.2* | *9.3* | *9.4* |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |  |  |
| **Private Study** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |  | **x** | **x** |
| *Lectures* | **x** | **x** | **x** | **x** | **x** | **x** |  |  |  |  |  |
| *Practical classes* | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| **Assessment method** |  |  |  |  |  |  |  |  |  |  |  |
| Class Exercises | **x** | **x** | **X** | **X** | **X** | **X** | **x** | **x** | **x** | **x** | **x** |
| Group Project | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| In Class test | **X** | **X** | **X** | **X** | **X** | **X** |  |  |  |  | **X** |
| Exam | **X** | **X** | **X** | **X** | **X** | **X** |  | **x** |  |  | **x** |

1. **Inclusive module design**

The Division recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

1. **Campus(es) or centre(s) where module will be delivered**

Canterbury

1. **Internationalisation**

The topics addressed by this module relate to a field which is of international importance, given the global role of computers in today's technological innovation. The topics covered by this module are international in nature, being identical worldwide and independent of traditional spoken language.

**DIVISIONAL USE ONLY**

**Revision record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
| 23/11/2020 | Minor | September 2021 | 7, 16 | No |
|  |  |  |  |  |