Course Outline (Higher Education)

School: School of Science, Psychology and Sport

Course Title: HEALTH ANALYTICS AND DATA MINING

Course ID: HLTSC3003

Credit Points: 15.00

Prerequisite(s): HLTSC1000

Co-requisite(s): Nil

Exclusion(s): Nil

ASCED: 029999

Description of the Course :
The course will introduce students to analytics and data mining from a health information management perspective. The course provides students with the skills to initiate, carry out and present data analytics and data mining projects in health science environments.

Grade Scheme: Graded (HD, D, C, etc.)

Work Experience:

No work experience: Student is not undertaking work experience in industry.

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the course but gained a final mark of 45 per cent or above and submitted all major assessment tasks.

Program Level:

Level of course in Program	AQF Level of Program					
	5	6	7	8	9	10
Introductory						
Intermediate						
Advanced			✔			

Learning Outcomes:

Knowledge:

K1. Explore the steps involved in the discovery of advanced knowledge from health data;

K2. Demonstrate an understanding of the importance of, and the mechanisms for, the security of health data;

K3. Appreciate the confidentiality, privacy and ethical issues involved in data collection, analysis and dissemination;

K4. Adapt a variety of approaches to the presentation of health data visually to provide meaningful outcomes.

Skills:

S1. Apply quantitative analysis, analytic and data mining principles to advance decision-making capability in health-related data;

S2. Construct a project using analytics and data mining;

S3. Manipulate data mining software to extract health-based knowledge from data.

Application of knowledge and skills:

A1. Demonstrate initiative in the production of a health-related analytics project;

A2. Analyse the benefits of analytics and data mining in the Health Industry;

A3. Engage in a group project presenting the ability of analytic and data mining to advance health care.

Course Content:

Topics may include:

- The role of analytics in assessing Healthcare data
- Using analytics to analyse health care data
- The use of data mining in health data
- Reporting methods for analytics and data mining
- Regulations and guidelines for data handling within the Health Sciences
- Confidentiality and security of health-related data

Values:

V1. Appreciate the importance of sound ethical practice in data mining

V2. Acknowledge the need to practice ethically and within NHMRC guidelines with regard to data management

V3. Appreciate the ability of healthcare analytics and data mining to provide substantive and useful information for health workers

Graduate Attributes

The Federation University FedUni graduate attributes (GA) are entrenched in the Higher Education Graduate Attributes Policy (LT1228). FedUni graduates develop these graduate attributes through their engagement in explicit learning and teaching and assessment tasks that are embedded in all FedUni programs. Graduate attribute attainment typically follows an incremental development process mapped through program progression. **One or more graduate attributes must be evident in the specified learning outcomes and assessment for each FedUni course, and all attributes must be directly assessed in each program**

Graduate attribute and descriptor		Development and acquisition of GAs in the course			
		Learning Outcomes (KSA)	**Code** A. Direct B. Indirect N/A Not addressed	**Assessment task (AT#)**	**Code** A. Certain B. Likely C. Possible N/A Not likely
GA 1 Thinkers	Our graduates are curious, reflective and critical. Able to analyse the world in a way that generates valued insights, they are change makers seeking and creating new solutions.	K1, K4, S1, S2, S3, A2	A, A, A, A, A, A	AT1, AT2, AT3	A, A, A
GA 2 Innovators	Our graduates have ideas and are able to realise their dreams. They think and act creatively to achieve and inspire positive change.	K4, S2, A1	A, B, A	AT1, AT2	A, B
GA 3 Citizens	Our graduates engage in socially and culturally appropriate ways to advance individual, community and global well-being. They are socially and environmentally aware, acting ethically, equitably and compassionately.	K1, K2, K3, A2	A, A, A, A	AT1, AT2	A, A
GA 4 Communicators	Our graduates create, exchange, impart and convey information, ideas, and concepts effectively. They are respectful, inclusive and empathetic towards their audience, and express thoughts, feelings and information in ways that help others to understand.	K2, K4, S2, S3, A1, A3	B, A, B, B, B, A	AT1, AT2, AT3	A, A, B
GA 5 Leaders	Our graduates display and promote positive behaviours, and aspire to make a difference. They act with integrity, are receptive to alternatives and foster sustainable and resilient practices.	S2, A3	A, A	AT1, AT2	A, B

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1-4, S1-2, A2	Class activities, discussions, self-directed and group learning	Tutorials, labs, journal and forum submissions	30-50%
K1-4, A1, S1, S3	Produce a clear and comprehensive report on a topic within the course	Presentation and report	20-40%
K1-4, S1-2, A2	Review and practice of skills and knowledge	Test	30-50%

Adopted Reference Style:

APA