**Subject Description Form**

|  |  |
| --- | --- |
| **Subject Code** | ISE4025 |
| **Subject Title** | Enterprise Analytics  |
| **Credit Value** | 3  |
| **Level** | 4 |
| **Pre-requisite/~~Co-requisite/Exclusion~~** |  ISE247 Fundamental of Enterprise Systems and ISE2001 Introduction to Enterprise Computing or equivalent knowledge. |
| **Objectives** |  This subject provide students with1. the understanding of the importance of organizing analysts in enterprise;
2. the understanding of data analytics and knowledge discovery in databases;
3. the ability to use software tools/applications for predictive analytics and data visualization for decision making in enterprise; and
4. the ability to apply data analysis techniques and analytical tools to support decision making and market analysis in enterprise.
 |
| **Intended Learning Outcomes** | Upon completion of the subject, students will be able to1. examine the concepts of data modeling and visualization;
2. apply data mining techniques for clustering, association, and classification;
3. perform predictive analytics to organize data for facilitating the development of business strategies and applications; and
4. apprehend the real-life applications of data analysis and visualization.
 |
| **Subject Synopsis/ Indicative Syllabus** | 1. Review of data analytics Concept of prescriptive analytics, cluster analysis, data science technology (e.g., R/Python programming language). 2. Machine learning for business analyticsSupervised machine learning, Bayes classification methods, random forest, support vector machine, neural network, successful design methodology, measuring and refining success.3. Organizing analystsGoals of particular analytics organization, basic models of organizing analysts, triangulating model and coordination mechanisms, governance for analytics.4. Case StudiesCase studies drawn from commercial, industrial, and research applications. These include market data analysis, cross-sell and up-sell methods, fraud detection; market prediction and forecasting; and big data application in cloud manufacturing and web analytics.In this subject, the techniques and methods covered are applied to both intra-organizational data and market data (e.g., industry statistics, trends, and competitive information). Enterprise as well as market-oriented applications are covered. |
| **Teaching/Learning Methodology**  | Learning is facilitated through face to face lecturing and guided learning. Face-to-face seminars/labs are available to facilitate students' learning. The integrated application-oriented mini-project is designed to help students acquire the knowledge of understanding and using different enterprise analytics principles, techniques, and tools to solve a real problem through team work.

|  |  |
| --- | --- |
| Teaching/Learning Methodologies | Intended subject learning outcomes to be assessed |
| a | b | c | d |  |
| Lecture | ✓ | ✓ | ✓ | ✓ |  |
| Tutorial/Labs |  | ✓ |  |  |  |
| Projects |  |  | ✓ | ✓ |  |
| Case Studies | ✓ |  |  |  |  |

  |
| **Assessment Methods in Alignment with Intended Learning Outcomes** |

|  |  |  |
| --- | --- | --- |
| Specific assessment methods/tasks  | % weighting | Intended subject learning outcomes to be assessed |
| a | b | c | d |  |
| Assignment | 20% | ✓ | ✓ |  |  |  |
| Mini-project/ project presentation | 30% | ✓ | ✓ | ✓ |  |  |
| Test | 50% | ✓ | ✓ | ✓ | ✓ |  |
| Total  | 100% |  |

Assignment is designed to measure students’ knowledge on data analytics. Mini-project/project presentation is designed to reflect students’ ability on the applications of data analytics techniques in enterprise. Test is designed to assess students’ understanding of the data analytics knowledge in enterprise. |
| **Student Study Effort Expected****(Block Mode/ Evening Mode)** | Class contact: |  |
| Lectures/seminars/labs | 24 Hrs. |
| Presentation/test/case studies/project discussion | 15 Hrs. |
| Other student study effort: |  |
| * Study of materials for exercises/assignments
 | 28 Hrs. |
| * Preparation and revision for in class test
 | 28 Hrs. |
| * Project and presentation preparation
 | 28 Hrs. |
| Total student study effort | 123 Hrs. |
| **Reading List and References** | 1. Gopal, M. 2019, *Applied machine learning*, McGraw Hill
2. Jerzy Surma 2011, *Business Intelligence: Making Decisions through Data Analytics*, New York, N.Y., Business Expert Press
3. Davenport, T.H. and Philips, J. 2013, *Enterprise Analytics: Optimize Performance, Process, and Decision Through Big Data*.
4. Barry Keating and J. Holton Wilson and John Solutions Inc. 2019[*, Forecasting and Predictive Analytics with Forecast X (TM)*, McGraw Hill](https://www.mheducation.com/highered/product/forecasting-predictive-analytics-forecast-x-tm-keating-wilson/M9781259903915.html)
 |