DCOMP401

BUSINESS INTELLIGENCE

#### Module Details

Course Location : Freetown, Sierra Leone

Examiner : Aiah James

Contact details (email) : aiah.james@limkokwing.edu.sl

Co-Examiner : Mary Lusenie

Pre-requisite :

Credits Amount : 3 credits

Status : Major

Contact hours per week : 3 hours (2-hour lecture + 2 hours’ tutorial)

No. of weeks : 12 weeks contact + 1 non-contact week + 2-week final examination

No. of assignment : 1

No. of written exams : 2

|  |  |  |  |
| --- | --- | --- | --- |
| Prepared by: | Mary Luseniee | Approved by: | AQA |
| Signature: |  | Signature: |  |
| Verified by: | Oluwatosin B. Ayorinde |  |  |

This document comprises the following:

* Essential Information
* Specific Module Information
* Module Rules & Regulations
* Grades
* Plagiarism
* Module Introduction
* Module Aims & Objectives
* Learning Outcome
* Specific Generic Learning Skills
* Syllabus + Lecture Outline
* References
* Assignment Schedule
* Assessment Criteria
* Specific Criteria

Other documents as follows will be issued to you on an ongoing basis throughout the semester:

* Handouts for Tutorials
* Submission Requirements + Guidelines

###### Essential Information

* All modules other than electives are **'significant modules'**.
* As an indicator of workload one credit carries and additional 2 hours of self-study per week. For example, a module worth 3 credits require that the student spends an additional 6 hours per week, either reading, completing the assignment or doing self-directed research for that module.
* Submission of ALL assignment work is compulsory in this module. A student cannot pass this module without having to submit ALL assignment work by the due date or an approved extension of that date.
* All assignments are to be handed on time on the due date. Students will be penalized 10 percent for the first day and 5 percent per day thereafter for late submission (a weekend or a public holiday counts as one day). Late submission, after the date Board of Studies meeting will not be accepted.
* Due dates, compulsory assignment requirements and submission requirements may only be altered with the consent of the majority of students enrolled in this module at the beginning/early in the program.
* Extensions of time for submission of assignment work may be granted if a medical certificate accompanies the application for extension.
* Overseas travel is not an acceptable reason for seeking a change in the examination schedule.
* Only the Head of Faculty can grant approval for extension of submission beyond the assignment deadline.
* Re-submission of work can only receive a 50% maximum pass rate.
* Supplementary exams can only be granted if the level of work is satisfactory **AND** the semester work has been completed.
* Harvard referencing and plagiarism policy will apply on all written assignments.

###### Specific MODULE Information

* Attendance rate of 80% is mandatory for passing module at the end of the semester.
* All grades are subject to attendance and participation.
* Absenteeism at any scheduled presentations will result in zero mark for that presentation.
* Visual presentation work in drawn and model form must be the original work of the student.
* The attached semester program is subject to change at short notice.

1. **MODULE RULES AND REGULATIONS**

**Assessment procedure:**

* These rules and regulations are to be read in conjunction with the UNIT AIMS AND OBJECTIVES
* All assignments/projects must be completed and presented for marking by the due date.
* Marks will be deducted for late work and invalid reasons.
* The student in person must deliver all assignments to the lecturer concerned. No other lecturer is allowed to accept students’ assignments.
* All tests/examinations are compulsory.
* Students must sit the test/examination on the notified date.
* Students are expected to familiarize themselves with the test/examination timetable.
* Students who miss a test/examination will not be allowed to pass.
* Students who miss TESTS or ASSIGNMENTS without a genuine reason WILL NOT be allowed to sit for the EXAMINATION, resulting in them repeating the module.
* Any scheduling of tutorials, both during and after lecture hours, is TOTALLY the responsibility of each student. Appointments are to be proposed, arranged, confirmed, and kept, by each student. Failure to do so in a professional manner may result in penalty of grades. Tutorials WITHOUT appointments will also NOT be entertained.
* Note that every assignment is given an ample time frame for completion. This, together with advanced information pertaining deadlines gives you NO EXCUSE not to submit assignments on time.

###### GRADES

In the assessment of all student works, the grading system is standardized for all subjects in all programmes. The grading system used is as follows;

|  |  |  |  |
| --- | --- | --- | --- |
| Marks | Grade | Grade Points | Description |
| 80 – 100 | A | 4.00 | Pass with Distinction |
| 75 – 79 | A- | 3.67 |
| 70 – 74 | B+ | 3.33 | Pass with Merit |
| 65 – 69 | B | 3.00 |
| 60 – 64 | B- | 2.67 |
| 55 – 59 | C+ | 2.33 | Pass |
| 50 – 54 | C | 2.00 |
| 45 – 49 | C- | 1.67 |
| 40 – 44 | D | 1.00 |
| 0 – 39 | F | 0.00 | Fail |
|  | S | 0.00 | Pending Supplementary Assessment |
| DNC | 0.00 | Did not complete |
| GNS | 0.00 | Grade Not Submit |
| EXP | - | Exempted |
| DEF | - | Deferred |

1. **Plagiarism, Copyright, patents, And OWNERSHIP of work: Student Major Project, theses & works**

* See LIMKOKWING, HIGH FLYERS HANDOUT, pg. 6.

##### Module INTRODUCTION

This is a course to provide basic knowledge of project management concepts and the application of the management approaches to software development projects.

##### Module AIMS AND OBJECTIVES

After taking this course, you should:

1. - Understand the essentials of data analytics and the corresponding terminologies. Define what is meant by data analytics, data mining, and business intelligence, big data, and describe how and why developments in computing, data availability, and data science methodologies are enabling organizations to adopt a data-driven approach to decisions and operations.
2. - Be familiar with the steps involved in the analytics process. Explain the process of data analytics, including the six steps of the Cross-Industry Standardized Process for Data Mining. Recognize the best practices and pitfalls of managing data analytics projects. Think strategically and systematically about whether and how data can improve business performance and inform decisions for management, marketing, and other business application areas.
3. - Be able to interact competently on the topic of data analytics. Know the fundamental principles of data science and business analytics that form the basis for data mining processes, algorithms, and systems. Understand these to the level to be able to work on analytics projects and interact with experts and clients.
4. - Have had some hands-on experience in using data analytics techniques. Gain practice utilizing software tools for both business intelligence (visualizing and analyzing data).
5. Exposed to technical components of Business Intelligence (software, a wide variety of technical equipment) are managed in theory.
6. Guided through the development of BI from knowledge to practice.
7. Taught how to recommend BI tools and practices that align with business strategies based on case analysis.
8. Introduced to examples of how business uses Business Intelligence tools to enhance competiveness and profitability.

###### LEARNING OUTCOME

Upon completion of this module, the student will be able to:

* Evaluate appropriate BI tools for an appropriate case.
* Analyze and use appropriate data mining tools for a peculiar BI case.
* Practice professional conduct and moral ethics on BI matters and issues
* Assess security issues and implement accordingly in all BI applications

1. **SPECIFIC GENERIC LEARNING SKILLS**

Upon completion of the module, student will acquire skills in:

* Data analytical techniques
* Development of BI from knowledge to practice

1. **SYLLABUS + LECTURE OUTLINE:**

**Week: 1**

**LECTURE 1: INTRODUCTION TO INFORMATION SYSTEMS AND BUSINESS INTELLIGENCE (BI)**

*Lecture Synopsis:*

1.1 Business Information for organizational decision-making.

1.2 Business intelligence in a global world

1.3 BI Process and selection

1.4 Private and Public Competitive Intelligence

1.5 Strategies for information gathering

1.6 Difference between intelligence, information and data

*Handout:* ***Module Outline***

***Tutorial #1***

**Week: 2**

**LECTURE 2: INFORMATION SECURITY CONCEPTS WITHIN THE CONTEXT OF BUSINESS INTELLIGENCE (BI).**

*Lecture Synopsis:*

2.1 Security issues in implementing BI

2.2 Related risks to BI implementation.

*Handout:*  ***Issuing of Assignment 1***

***Tutorial #2***

**Week: 3**

##### LECTURE 3: BUSINESS INTELLIGENCE SOFTWARE AND BUSINESS INTELLIGENCE ON THE WEB

*Lecture Synopsis:*

3.1 BI Software

3.2 BI on Internet

*Handout:* ***Tutorial #3***

**Week: 4**

##### Lecture 4: LEGAL AND ETHICAL MATTERS RELATED TO BUSINESS INTELLIGENCE (BI).

*Lecture Synopsis:*

4.1 Legality of BI in business environments

4.2 Professional ethos and Values in practice of BI

*Handout:* ***Tutorial #4***

***Submission of Assignment 1***

**Week: 5**

LECTURE 5: EMERGING TRENDS IN THE BI INDUSTRY

*Lecture Synopsis:*

5.1 Text and web mining as a new form of business intelligence (BI)

5.2 Integration and emerging tools.

*Handout:* ***Tutorial #5***

**Week: 6**

LECTURE 6:

**DATA MINING CONCEPTS, PROCESSES, AND TOOLS WITHIN THE CONTEXT OF BUSINESS INTELLIGENCE (BI).**

6.1 Data Mining and applicable algorithms

6.2 Concepts of data and knowledge management

6.3 Infrastructural evaluation

6.4 KM system analysis, design and development

*Handout:* ***Tutorial #6***

**Week: 7**

**MID SEMESTER TEST**

**Week: 8**

mid Semester break

**Week: 9**

**LECTURE 7: DATA WAREHOUSING (DW) AND BI**

*Lecture Synopsis:*

7.1 Define, differentiate, and apply data mart and data warehousing concepts

7.2 Techniques used in implementing a Business Intelligence (BI) strategy

*Handout:* ***Tutorial #7***

**Week: 10**

**LECTURE 8: DATA ANALYSIS IN PYTHON**

8.1 Data Analysis – NumPy

8.2 Data Analysis - Pandas

*Lecture Synopsis:*

*Handout:* ***Submission of Assignment 2***

***Tutorial #8***

**Week: 11**

**LECTURE 9: DATA VISUALIZATION IN PYTHON**

*Lecture Synopsis:*

9.1 Data Visualization – Matplotlib

9.2 Data Visualization – Seaborn

9.3 Data Visualization - Pandas Built-in Data Visualization

*Handout:* ***Tutorial #9***

**Week:** **12**

**LECTURE 10:**

* 1. Data Visualization - Plotly and Cufflinks
  2. Data Visualization - Geographical Plotting

*Handout:* ***Tutorial #10***

**Week:** **13**

***PRESENTATION WEEK***

**Week: 14**

***REVISION WEEK***

**Week: 15 / 16**

***final examination week***

1. **REFERENCES**

* Joy Mundy and Warren Thornthwaite *The Microsoft Data Warehouse Toolki*t, Wiley Publishing Inc, 2010
* Efraim Turban , Jay E. Arinson, Ying-Peng Liang, Ramesh Shada *Decision Support and Busyness Intelligence Systems* Pearson Prentice Hall, 2012
* Wayne W Eckerson Perfromance *Dash Boards; Measuring, Monitoring, and Managing Your Business* John Wiley & Sins inc 2010

Turban, Sharda, Delen, King, *Business Intelligence: A Managerial Approach* Publisher: Prentice Hall, Edition: 2nd, 2011

**12.0 ASSIGNMENT SCHEDULE**

|  |  |  |  |
| --- | --- | --- | --- |
| **Assignment description** | **issue date** | **due date** | **%** |
| assignment 1 | week 2 | week 4 | 15% |
| Midterm test | week 7 | week 7 | 20% |
| Group Assignment | week 2 | week 12 | 30% |
| Final examination : | week 15 | week 16 | 30% |
| Attendance | week 1 | week 16 | 5% |
| **Total** |  |  | **100%** |

###### 13.0 ASSESSMENT CRITERIA

Process of grading and criteria used to determine the grades, passes and high distinctions.

* **80-100, A, Publishable, Outstanding Work.** Assignment is of sufficient substance and style to be submitted to a referred journal for publication or public presentation. Superior understanding of the subject matter. Evidence of original thinking and an extensive knowledge base. Careful, concise, critical analysis with a clear and well-argued hypothesis based on the material. Shows a capacity to analyze, synthesize, and evaluate material. Shows a grasp of all the scholarly issues involved. Shows evidence of learning being extended beyond the initial learning situation. Clear thesis and conclusion. Well-researched and documented. Stylistically flawless.
* **75-79, A-, Excellent.** Solid understanding of the subject matter. Good analysis and some critical reasoning. Reasonable understanding of relevant issues and familiarity with the material. Demonstrates a solid understanding of the relationship or connections among the basic concepts. Needs to be more concise or precise in details and more careful in forming arguments. Stylistically sound.
* **70-74, B+, Good.** Generally accurate account of the subject matter with acceptable analysis and some critical reasoning. Some interaction with relevant material. Demonstrates some understanding of the relationship or connection among the basic concepts. Needs more precision and attention to details and greater precision in the use of arguments. Some careless stylistic errors.
* **65-69, B, Fine.** Generally accurate description of the subject matter and an adequate grasp of the critical issues and ideas involved. Demonstrates rudimentary understanding of the relationship or connection among the basic concepts. Needs more attention to detail and better use of arguments. Some careless stylistic errors.
* **60-64, B-, Average.** Acceptable treatment of the subject matter. Demonstrates an understanding of the basic facts, vocabulary, details, and elemental concepts. Shows an ability to deal with simple issues arising out of the material. Needs to explore the subject matter more fully and formulate ideas more clearly. Closer attention should be given to stylistic elements including sentence structure and paragraph organization.
* **55-59, C+, Adequate.** Generally acceptable treatment of the subject matter and issues. Demonstrates an awareness of the basic facts, vocabulary, details, and elemental concepts. Impressionistic or vague at points. Shows that the learning experience was profitable. Lacks clarity in formulating the issues and shows little or no evidence of critical reflection on the issues or data. Closer attention should be given to grammar, spelling, and punctuation.
* **50-54, C, Minimally Acceptable.** Adequate understanding and treatment of the data and issues, but imprecise, impressionistic or vague. Lacks clarity in expressing the issues and shows no evidence of critical reflection on the issues or data. Major problems related to issues of style.
* **45-49, C-, Low.** Lack in understanding and treatment of the data and issues, failed to show ability to analyse or in expressing the issues.
* **40-44, D, Very Low.** Does not carry evidence of understanding to the overall objectives of the assessment. Miscarried the intended analysis, information, and data.
* **0-39, F, Inadequate.** Sloppy, imprecise or careless discussion of the material with little or no evidence of critical reflection. Stylistically flawed.
* **S Grade,** In the case of a student who is granted supplementary work/s submission by the faculty, a grade S should be entered. An S grade is an interim grade until the supplementary work/s is/are submitted and assessed at the earliest possible timeframe. After a student has passed the supplementary work/s, the student shall be awarded with a normal grade. This is limited to ‘C’ band.
* **DNC (Did Not Complete),** In the case of a student who has registered, is on a class list, has attended some classes, but has not submitted any work, a grade of DNC should be entered. A 0.00 grade point is attached to this grade.
* **GNS (Grade Not Submitted),** In the case of an emergency or unforeseen circumstances and grade/s is/are yet to be submitted at time of Senate e.g waiting for Internship to be completed, a GNS should be entered.
* **DEF (Deferred),** In the case of a student who has registered, is on a class list, but has decided to drop the module after the approved dropped date ie. Week 4, a grade of DEF should be entered. There is no grade point attached to this grade.
* **EXP (Exempted),** Refer to Section Exemption of Modules or Advance Standing and Credit Transfer in Academic Quality Assurance Manual.

###### 14.0 SPECIFIC Criteria

* Each assignment will be handed out with the project brief and will vary, depending on the teaching and learning objectives of the specific assignment.
* Each student will receive a completed assessment sheet back with their marks, thereby giving student feedback on each set criterion and the project as a whole.
* All submission must be made directly to the lecturer-in-charge.