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College of Informatics and Computing Sciences

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

COURSE INFORMATION SYLLABUS (CIS)

Vision	A premier national university that develops leaders in the global knowledge economy.			
Mission	A university committed to producing leaders by providing a 21st century learning environment through innovations in education, multidisciplinary research, and community and industry partnerships in order to nurture the spirit of nationhood, propel the national economy and engage the world for sustainable development.			
Course Title	Fundamentals of Business Analytics		**Course Code**	BAT 401
Course Category	Professional Elective: Business Analytics Track		**Pre-requisite(s)**	IT 221- Information Mngt & IT 222 - Advanced Database Management Systems
Semester/Year	First Semester / Third Year		**Credit Hours**	5 (2 hrs lec; 3 hrs lab)
Course Instructor	Djoanna Marie V. Salac	08-0779	**Reference CMO**	25 Series of 2015, 12 Series of 2013
	Assistant Professor IV, BSIT, MSIT djoanna.salac@g.batstate-u.edu.ph		**Date Prepared**	July 26, 2024
			Revision No.:	-
Period of Study	AY 2024 - 2025		**Revision Date:**	-
Course Rationale and Description	This course provides students with an overview of the current trends in information technology that drives today's business. The course will provide understanding on data management techniques that can help an organization to achieve its business goals and address operational challenges. This will also introduce different tools and methods used in business analytics to provide the students with opportunities to apply these techniques in simulations in a computer laboratory.			
Contact Hours	2 hours lecture 3 hours laboratory			
Criteria for Assessment	Lecture (40%) Midterm Exam 20% Final Exam 30% Quizzes / Chapter Tests 15% Assignment/ Research Review 15% Projects 20%		Laboratory (60%) Laboratory Exercises 40% Laboratory Exams 60%	
Teaching, Learning, and Assessment Strategies	Written/ Oral Exam There will be two (2) major examinations to be conducted in-class. The examinations will cover the topics discussed for the given period but may include some topics from the preceding period due to the continuity of concepts. The course is taught using a structured program of hybrid learning (face-to-face and online), video presentations, tutorials, laboratory activities and student-centered learning specifically: (a) self-directed learning using on-line material and lectures to supplement on-line material (b) laboratory sessions to gain practical experience and re-enforce theory (d) individual assignment work as part of laboratory work (e) web-based research and (f) reporting. Students will be assessed using any or combination of rubrics, paper and pencil tests, oral and paper presentation and portfolio and/or any of the following methods: Midterm and Final Exam, Quizzes/Chapter Tests, Attendance/Assignments/Research Review, Evaluation of Laboratory Outputs (using rubrics), and Projects.			

Intended Learning Outcomes (ILO)	**ILO**	**Upon completion of this course, the students should be able to:**
	ILO1	Explain data management concepts and criticality of data availability in order to make reliable business decisions.
	ILO2	Demonstrate understanding of business intelligence including the importance of data gathering, data storing, data analyzing and accessing data.
	ILO3	Describe where to look for data in an organization and create required reports
	ILO4	Perform high-quality tasks required by the organization in particular, and the industry in general

Assessment Method and Distribution Map	Assessment Tasks (AT) Distribution				Intended Learning Outcomes							Domains		
	Code	Assessment Tasks	I/R/D	(%)	1	2	3	4	5	6	7	C	P	A
	LEC	**LECTURE**		40%										
	ME	Midterm Exam	I		35	35						70		
	FE	Final Examination	R		35	35						70		
	QCT	Quizzes/Chapter Tests	R		100							100		
	ARR	Assignments/ Research Review	I/R		200							200		
	PR	Projects	D		50	50						70	30	
	LAB	**LABORATORY**		60%										
	LE	Laboratory Exercises	D			1400							1400	
	LEX	Laboratory Exams	D			200						100	100	
	Total			**100%**										
	Note:	All internal assessments with feedback will be made available within 2 week after each assessment submission except Final Examination.												
Textbook	1	Data Analytics: A Comprehensive Approach (2019). G. Reid												
	2	Data Analytics with Microsoft Power BI (2020). Brian Larson												
	3	Cisco Networking Academy (2023). Data Analytics Essentials. Accessed at https://skillsforall.com												
Other Books and Articles	4	Ilustrated Handbook of Business Analytics (2020). 3G E-Learning												
	5	Fundamentals of Business Analytics: A Business Analytics Course. Myra Almodiel and Primo G. Garcia. University of the Philippines Open University												
	6	Essentials of Business Analytics (2015). Jeffrey Camm, James Cochran, Michael Fry, Jeffrey Ohlmann, David Anderson. Cengage Learning Asia Pte Limited. USA												
	7	Carlberg, Conrad George (2018), Predictive Analytics Microsoft Excel												
Institutional Graduate Attributes (IGA)	**IGA**	**Institutional Graduate Attributes (IGA) Statements**												
	IGA1	**Knowledge Competence**												
		Demonstrate a mastery of the fundamental knowledge and skills required for functioning effectively as a professional in the discipline, and an ability to integrate and apply them effectively to practice in the workplace.												
	IGA2	**Creativity and Innovation**												
		Experiment with new approaches, challenge existing knowledge boundaries and design novel solutions to solve problems.												
	IGA3	**Critical and Systems**												
		Identify, define, and deal with complex problems pertinent to the future professional practice or daily life through logical, analytical and critical thinking.												
	IGA4	**Communication**												
		Communicate effectively (both orally and in writing) with a wide range of audiences, across a range of professional and personal contexts, in English and Pilipino.												
	IGA5	**Lifelong Learning**												
		Identify own learning needs for professional or personal development; demonstrate an eagerness to take up opportunities for learning new things as well as the ability to learn effectively on their own.												
	IGA6	**Leadership, teamwork, and Interpersonal Skills**												
		Function effectively both as a leader and as a member of a team; motivate and lead a team to work towards goal; work collaboratively with other team members; as well as connect and interact socially and effectively with diverse culture.												
	IGA7	**Global Outlook**												
		Demonstrate an awareness and understanding of global issues and willingness to work, interact effectively and show sensitivity to cultural diversity.												
	IGA8	**Social and National Responsibility**												
		Demonstrate an awareness of their social and national responsibility; engage in activities that contribute to the betterment of the society; and behave ethically and responsibly in social, professional and work environments.												
Student Outcomes (SO)	**SO**	**Student Outcomes (SO) Statements**												
	SO1													
		Ability to analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions												
	SO2													
		Ability to design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.												

Student Outcomes (SO)	**SO3**	
		Ability to communicate effectively in a variety of professional contexts.
	SO4	
		Ability to recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
	SO5	
		Ability to function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
	SO6	
		Ability to identify and analyze user needs and to take them into account in the selection, creation, integration, evaluation and administration of computing-based systems.
CDIO Framework Skills	**CDIO**	**CDIO Skills**
	CDIO1	**Disciplinary Knowledge & Reasoning**
		Knowledge of underlying mathematics and sciences, core engineering fundamental knowledge, advanced engineering fundamental knowledge, methods and tools
	CDIO2	**Personal and Professional Skills & Attributes**
		Analytical reasoning and problem solving; experimentation , investigation and knowledge discovery; system thinking; attitudes, thoughts and learning; ethics, equity and other responsibilities
	CDIO3	**Interpersonal Skills: Teamwork & Communication**
		Teamwork, communications, communication in a foreign language
	CDIO4	**Conceiving, Designing, Implementing & Operating Systems**
		External, societal and environmental context, enterprise and business context, conceiving, systems engineering and management, designing, implementing, operating
Sustainable Development Goals Skills	**SDG**	**SDG Skills**
	SDG1	**Envisioning**
		Establish a link between long-term goals and and immediate actions, and motivate people to take action by harnessing their deep aspirations.
	SDG2	**Critical Thinking and Reflection**
		Examine economic, environmental, social and cultural structures in the context of sustainable development, and challenges people to examine and question the underlying assumptions that influence their world views by having them reflect on unsustainable practices.
	SDG3	**Systemic Thinking**
		Recognise that the whole is more than the sum of its parts, and it is a better way to understand and manage complex situations.
	SDG4	**Building Partnerships**
		Promote dialogue and negotiation, learning to work together, so as to strengthen ownership of and commitment to sustainable action through education and learning.
	SDG5	**Participation in Decision Making**
		Empower oneself and others through involvement in joint analysis, planning and control of local decisions.

COURSE POLICIES

A. GRADING SYSTEM

The grading system adopted by this course is as follows:

Excellent	1.00	98 - 100
Superior	1.25	94 - 97
Very Good	1.5	90 - 93
Good	1.75	88 - 89
Meritorious	2.00	85 - 87
Very Satisfactory	2.25	83 - 84
Satisfactory	2.50	80 - 82
Fairly Satisfactory	2.75	78 - 79
Passing	3.00	75 - 77
Failure	5.00	Below 70
Incomplete	INC	

*Students who got a computed grade of 70-74 will be given an appropriate remedial activity in which the final grade should be either passing (3.0) or failure (5.0).

B.	**CLASS POLICY**
	Prompt and regular attendance of students is required. Total unexcused absences shall not exceed ten (10) percent of the maximum number of hours required per course per semester (or per summer term). A semester has 17 weeks.
	MISSED EXAMINATIONS
	Students who failed to take the exam during the schedule date can be given a special exam provided he/she has valid reason. If it is health reason, he/she should provide the faculty with the medical certificate signed by the attending Physician. Other reasons shall be assessed first by the faculty to determine its validity.
	ACADEMIC DISHONESTY
	Academic dishonesty includes acts such as cheating during examinations or plagiarism in connection with any academic work. Such acts are considered major offenses and will be dealt with according to the University's Student Norms of Conduct.
	DROPPING Dropping must be made official by accomplishing a dropping form and submitting it at the Registrar's Office before the midterm examination. Students who officially drop out of class shall be marked "Dropped" whether he took the preliminary examination or not and irrespective of their preliminary grades. A student who unofficially drops out of class shall be given a mark of "5.0" by the instructor.
C.	**OTHER COURSE POLICIES AND REQUIREMENTS** **Students with Disabilities/Special Needs (PWD)**. All students who have an illness or disability are encouraged to disclose to the instructor the nate and extent of the illness or disability so that the instructor can make the necessary adjustments. All students are expected to promote and foster an environment that encourages positive, informed and unprejudiced attitudes towads students with disability. **CONSULTATION AND ACADEMIC ADVISING** Students are highly encouraged to use the consultation hour of the instructor set by the college, whether virtually or face-to-face. It will be used to seek for an advice if there is any problem or difficulty encountered during the term. Discussion for academic purposes will also be entertained.

Teaching, Learning, and Assessment (TLA) Activities

Ch.	Topics / Reading List	Wks	Topic Outcomes	ILO	SO	Delivery Method
	Orientation & Introduction	1	VMGO Orientation, Presentation of Syllabus, Class Rules			Face-to-face/ Online Discussion
1	Main Topic 1: Overview of Big Data and Analytics Assignment #1 Laboratory Activity #1	1-2	Describe the basic concepts on business intelligence, Big Data and business analytics Discuss the importance of business analytics in decision making Trace the evolution of business analytics Discuss the scope of business analytics Discuss the importance of data in business analytics	1,2	1	Face-to-face/Online Discussion, Videos, Practical Work, Module
2	Main Topic 2: Business Analytics Framework and Process Research Review #1 Laboratory Activity #2	3	Discuss how data became business value Explain basic concepts on data analysis framework, data extraction, data warehousing and data analytics Differentiate the different types of analytics Relate business analytics process to organization decision making process	1,2	1	Face-to-face/Online Discussion, Videos, Practical Work, Module
3	Main Topic 3: Data and Database Management Laboratory Activity #3 and #4 Quiz #1	4-5	Explain the concepts about data, database, and database management system (DBMS) Apply SQL concepts and syntax conventions, and query against data uploaded into a cloud database	3,4	1	Face-to-face/Online Discussion, Videos, Practical Work, Module

Ch.	Topics / Reading List	Wks	Topic Outcomes	ILO	SO	Delivery Method
4	Main Topic 4: Analytics on Spreadsheets Laboratory Activity #5, #6, #7 Quiz #2 Laboratory Exam #1	6-8	Use spreadsheet applications for data analysis to promote data driven decision making Apply MS Excel analytics functions	4	1	Face-to-face/Online Discussion, Videos, Practical Work, Module
	Midterm Exam	9				
5	Main Topic 5: Business Analytics in Practice Assignment #2 Laboratory Activity #8	10	Explain the applications on business analytics in finance, HR, marketing, health care, supply chain, government, sports and web. Describe the trends in business analytics	1,2	1	Face-to-face/Online Discussion Laboratory Work, Module, Video Tutorials
6	Main Topic 6: Visualizing and Exploring Data Laboratory Activity #9, #10, #11, #12 Assignment #3	11-13	Describe the importance of data visualizations anf exploration Present data visually to enhance audience comprehension of findings and insights. Design effective data visualization to support decision making	3,4	1	Face-to-face/Online Discussion Laboratory Work, Module, Video Tutorials
7	Main Topic 7: Descriptive Statistics Laboratory Activity #13, #14 Quiz #3	14-15	Explain the different types of data Create distributions from data Explain different measure of location and analyzing distributions	4	1	Face-to-face/Online Discussion, Videos, Practical Work, Module
8	Main Topic 8: Ethical Issues in Business Analytics Research Review #2 Laboratory Exam #2	16	Explain the ethical issues, concerns and implications in business analytics Describe the Data Privacy Law and provide examples on data privacy concerns.	1,2	1,4	Face-to-face/Online Discussion Laboratory Work, Module, Video Tutorials
9	Final Examination / Submission of Project	17				
10	Uploading and Submission of Grades	18				

Assessment Schedule		Week No.														
Assessment Method	Distribution	1-2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	ME								x								
	FE																x
	QCT			x			x							x			
	ARR		x							x		x				x	
	PR																x
	LE	x	x	x	x	x	x	x		x	x	x	x	x	x		
	LEX							x								x	

ILO-SO and ILO-CPA Mapping	ILOs	STUDENT OUTCOMES (SO): Mapping of Assessment Tasks (AT)								
		SO 1	SO 2	SO 3	SO 4	SO 5	SO 6	C	P	A
	ILO1	ME, FE, QCT		ARR				ME, FE, QCT, ARR		
	ILO2	ME, FE, QCT		ARR				ME, FE, QCT, ARR		
	ILO3								PR	PR
	ILO4	LE, LEX			PR				LE, LEX	

ILO-IGA Mapping	ILOs	INSTITUTIONAL GRADUATE ATTRIBUTES (IGA): Mapping of Assessment Tasks (AT)								
		IGA 1	IGA 2	IGA 3	IGA 4	IGA 5	IGA 6	IGA 7	IGA 8	
	ILO1	ME, FE, ARR								
	ILO2	ME, FE, ARR								
	ILO3	LE, LEX		PR						
	ILO4	LE, LEX		PR						

ILO-CDIO and ILO-SDG Mapping	ILOs	CDIO SKILLS				SDG Skills				
		1	2	3	4	1	2	3	4	5
	ILO1	ME, FE, QCT, ARR						ME, FE, QCT, ARR		
	ILO2			ME, FE, QCT, ARR				ME, FE, QCT, ARR		
	ILO3			PR				PR		
	ILO4			LE, LEX				LE, LEX		

Prepared by:	Reviewed by:	Approved by:
Asst. Prof. DJOANNA MARIE V. SALAC Course Facilitator Date:	**Asst. Prof. BENJIE R. SAMONTE** Department Chairperson, ITE Programs Date:	**Dr. LORISSA JOANA E. BUENAS** Dean, CICS Date:

Remarks:

1 The syllabus is to be distributed to the students in the first week of the semester.

2 Any changes to the syllabus shall be communicated (in writing) to the Program Chair and the approved revised version must be communicated to the students.

3 The course instructor may set a more stringent similarity percentage (minimum 20%) for their respective courses pertaining to student's submissions. However, it must be communicated in writing to the respective Program Chair and the approved revised version must be communicated to the students.