Course Specification
(Bachelor)

Course Title:	Data Visualization
Course Code:	BIDA130
Program:	Business Intelligence and Data Analysis
Department:	Computer
College:	Applied College
Institution:	Najran University
Version:	1
Last Revision Date:	7/12/1446

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (3 hours)					
2. Course type					
A.	☐University	☐College	☒ Department	☐Track	☐Others
B.	☒ Required		☐Elective		
3. Level/year at which this course is offered: (2nd year, Term5)					
4. Course General Description:					
Introduces data visualization concepts, tools and techniques used to transform raw data into meaningful information that can be used to support data-driven decision-making. Learners practice determining data quality criteria and modeling techniques to create business intelligence. In addition, learners use software tools such as Tableau to present complex data in visually meaningful representations that can be communicated to business stakeholders.					
5. Pre-requirements for this course (if any)**:**					
COMP110					
6. Co-requisites for this course (if any)**:**					
N/A					
7. Course Main Objective(s):					
• Students apply data visualization concepts, tools and techniques to real-world business situations to support data-driven decision-making. • Students use data visualization software tools such as Tableau to communicate complex data to business stakeholders. • Students create business intelligence using data quality criteria and modeling techniques.					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	48	100
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		

No	Mode of Instruction	Contact Hours	Percentage
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	24
2.	**Laboratory/Studio**	24
3.	**Field**	
4.	**Tutorial**	
5.	**Others (specify)**	
Total		48

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	**K1 Summarize the keys of data visualization concepts.**	**K1, K2**	**Reading Presentation Class Discussion Internet research**	**Quiz**
1.2	**K2 Explain how data visualization strengthens business intelligence**	**K1, K2**	**Reading Presentation Class Discussion Internet research**	**Quiz**
2.0	**Skills**			
2.1	**S1 Select an effective visual technique for the situation**	**S1, S4**	**Reading Presentation Class Discussion Lab Activities**	**Exam Lab Activities**
2.2	**S2 Apply design principles to visual development**	**S1, S4**	**Reading Presentation Class Discussion Lab Activities**	**Exam Lab Activities**

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
2.3	S3 Use data visualization technologies	S1, S4	Reading Presentation Class Discussion Lab Activities	Exam Lab Activities
2.4	S4 Use data visualization to support data-driven decision-making	S1, S4	Reading Presentation Class Discussion Lab Activities	Exam Lab Activities
3.0	**Values, autonomy, and responsibility**			
3.1	V1 Communicate effectively with a range of audiences	V1, V2	Group Project Case Study Problems	Exam Case Study Problem

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction to Data Visualization: Importance and Benefits in Data Analysis	5
2.	Principles of Effective Data Visualization: Designing for Clarity and Impact	5
3.	Data Visualization Tools and Technologies: Exploring Popular Tools and their Features	5
4.	Exploratory Data Visualization: Techniques for Discovering Patterns and Insights	5
5.	Chart Types and Graphical Representations: Choosing the Right Visualizations for Different Data Types	5
6.	Interactive Data Visualization: Creating Engaging and Dynamic Visualizations	5
7.	Storytelling with Data: Presenting Data Narratives through Visualization	5
8.	Dashboard Design: Creating Informative and User-Friendly Dashboards	5
9.	Geographic Data Visualization: Mapping and Visualizing Spatial Data	4
10.	Data Visualization Best Practices: Design Guidelines, Accessibility, and Ethical Considerations	4
Total		**48**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Midterm Exam	8	25%
2.	Homework's	During Semester	15%
3.	Practical Exam	14	20%
4.	Final Exam	End of semester	40%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Title: Storytelling with Data: A Data Visualization Guide for Business Professionals Publisher: Wiley Published year: 2015 Author: Cole Nussbaumer Knaflic ISBN 13: 978-1119002253 ISBN 10: 1119002257
Supportive References	
Electronic Materials	
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom IT Lab
Technology equipment (projector, smart board, software)	Smartboard Presentation Technology Computer with MS Office Public Tableau
Other equipment (depending on the nature of the specialty)	public.tableau.com/app/discover

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students, External reviewers` visit from Accreditation Agen-cy	Survey Formal Classroom Observation
Effectiveness of Students assessment	Quality and Development Unit, Curriculum Committee,	Teachers`feedback, Students` feedback, Course report, Pro-fessional certifions achievement rate
Quality of learning resources	Quality and Development Unit	Annual quality improvement program review
The extent to which CLOs have been achieved	Quality and Development Unit	Course report, data analysis of achievement test
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	EXECUTIVE COUNCIL
REFERENCE NO.	4600081176
DATE	22/12/1446