



Program Specification

DIPLOMA

Program: **Diploma in Data Analytics**

Program Code (as per Saudi university ranking): **061902**

Qualification Level: **Level 5**

Department: **Diploma Department**

College: **The Applied College**

Institution: **Umm Al-Qura University**

Program Specification: **New** **updated***

Last Review Date: **write here**

*Attach the previous version of the Program Specification.



Table of Contents

A. Program Identification and General Information	3
B. Mission, Objectives, and Program Learning Outcomes	4
C. Curriculum	5
D. Student Admission and Support:	7
E. Faculty and Administrative Staff:	8
F. Learning Resources, Facilities, and Equipment:	8
G. Program Quality Assurance:	9
H. Specification Approval Data:	10



A. Program Identification and General Information

1. Program's Main Location :

Applied College, Main Campus, Makkah.

2. Branches Offering the Program (if any):

Female Branch- Aiziyah and/or Rea' Dhakher.
Male Branch- Aziziyah.

3. Partnerships with other parties (if any) and the nature of each:

Currently, there are no formalized partnerships; however, potential collaborations with industry partners and certification bodies (e.g., Tableau, Microsoft) are under consideration to support certification alignment and practical training opportunities.

4. Professions/jobs for which students are qualified

Graduates will have a broad range of theoretical knowledge and applied technical skills in data analytics that will qualify them for mid-level technical and operational roles, such as:

- Data Technician
- Junior Data Analyst
- Business Intelligence Assistant
- Reporting coordinator
- Data Visualization specialist
- Data Operations Support
- Data Processing Technician

5. Relevant occupational/ Professional sectors:

- Data Analysis and Business Intelligence
- Government Planning and Statistics Units
- Healthcare and Educational Data Units
- Banking and Financial Services



- E-commerce and Systems Data Management
- IT Support and Systems Data Management
- Research and Evaluation Support in Public and Private Sectors

6. Major Tracks/Pathways (if any):

Major track/pathway	Credit hours (For each track)	Professions/jobs (For each track)
1. Core Data Analytics Track	60	Junior Data Analyst, BI Assistant, Data Technician
2. No specialization tracks	N/A	N/A
3.		
...		

7. Exit Points/Awarded Degree (if any):

exit points/awarded degree	Credit hours
1. Associate's Diploma (1 year)	42
2. Intermediate Diploma (2 years)	60
3. Certificates of Short Training Programs	under 24 hours

8. Total credit hours: 60



B. Mission, Objectives, and Program Learning Outcomes

1. Program Mission:

To prepare graduates with comprehensive knowledge of data analytics, alongside the technical skills to process, interpret, and analyze data effectively. The program emphasizes data-driven, problem-solving, and technical responsibility to address real-world challenges and meet labor market demands. This mission is aligned with the National Qualification Framework (NQF) at Level 5, ensuring the integration of knowledge, technical skills, and values in preparing graduates for mid-level professional roles.

2. Program Goals:

The goals of the program are to:

1. Provide foundational and applied knowledge in statistics, programming, and data analytics.
2. Develop students' practical skills in data preparation, exploration, analysis, and visualization.
3. Foster ethical responsibility and teamwork in data-driven environments.
4. Prepare students for mid-level roles in data-related fields and for professional certifications.

3. Program Learning Outcomes*

Knowledge and Understanding

K1	Demonstrate understanding of core concepts in data analytics, such as data collection and processing, statistics, programming, and databases.
K2	Describe how data is used to support organizational decision-making and problem-solving across various domains.
K3	Identify key components of data governance, including data quality, security, and lifecycle management.

Skills

S1	Apply programming techniques and statistical methods to solve data-related problems using appropriate tools.
S2	Perform data cleaning, integration, and transformation from various sources.
S3	Design effective visualizations and dashboards to communicate data insights.



S4	Analyze datasets to extract patterns and support data-driven decisions.
Values, Autonomy, and Responsibility	
V1	Demonstrate ethical responsibility and awareness of legal and privacy considerations in data use.
V2	Collaborate effectively with others in team-based data projects.
V3	Show initiative in problem-solving and engage in lifelong learning.

* Add a table for each track or exit Point (if any)





C. Curriculum

1. Curriculum Structure

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Institution Requirements	Required	0	0	0%
	Elective	0	0	0%
College Requirements	Required	5	14	23.33%
	Elective	0	0	0%
Program Requirements	Required	14	40	66.67%
	Elective	0	0	0%
Capstone Course/Project	-	-	-	Included in the courses above
Field Training/ Internship	Required	1	6	10%
Residency year	-	-	-	N/A
Others	-	-	-	-
Total		20	60	100%

* Add a separate table for each track (if any).

2. Program Courses

Level	Course Code	Course Title	Required or Elective	Pre- Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	AP1310	Values and Ethics	Required	-	2	College
	AP1301	English language I	Required	-	4	College
	APDA1201	Discrete Structures	Required	-	2	Program
	APDA1202	Statistics and Probabilities	Required	-	2	Program
	APDA1203	Computing Fundamentals	Required	-	2	Program
	APDA1204	Fundamentals of Algorithms and Programming	Required	-	3	Program
	APDA1205	Introduction to Data Science	Required	-	3	Program
Level 2	AP1302	English language II	Required	AP1301	4	College
	AP1201	Applications in Artificial Intelligence	Required	-	2	College





Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
	APDA2206	Advanced Programming	Required	APDA1204	3	Program
	APDA2207	Database Management Systems	Required	APDA1201	3	Program
	APDA2208	Data Collection and Integration	Required	-	3	Program
	APDA2209	Applications in Data Analytics	Required	-	3	Program
Level 3	AP1510	Professional skills	Required		2	College
	APDA3210	Machine Learning	Required	APDA1202 APDA2206	4	Program
	APDA3211	Advanced Web Analytics	Required	APDA1205	4	Program
	APDA3212	Data Visualization	Required	APDA2209	3	Program
	APDA3213	Data Security and Privacy	Required	APDA1205	2	Program
	APDA3214	Special Topics in Data Analytics	Required	APDA1209	3	Program
Level 4	APDA4901	Cooperative Training	Required	All courses in Levels 1, 2, & 3	6	Program

* Include additional levels (for three semesters option or if needed).

** Add a table for the courses of each track (if any)

3. Course Specifications:

Insert hyperlink for all course specifications using NCAAA template (T-104)

[توصيف المقررات](#)

4. Program learning Outcomes Mapping Matrix:

Align the program learning outcomes with program courses' according to the following desired performance levels (*I = Introduced & P = Practiced & M = Mastered*).





Course code & No.	Program Learning Outcomes									
	Knowledge and understanding			Skills				Values, Autonomy, and Responsibility		
	K1	K2	K3	S1	S2	S3	S4	V1	V2	V3
AP1310								I	I	
AP1301									I	
APDA1201	I		I	I	I	I	I	I	I	I
APDA1202	I	I	I	I	I	I	I	I	I	I
APDA1203	I			I				I		
APDA1204	I			P				I	I	
APDA1205	P	P	P		P		P	P	P	
AP1302									P	
AP1201		I		I						
APDA2206	M	M	M	M	P	P	P	P	P	P
APDA2207	P				P	P	P		P	P
APDA2208	P						M		P	P
APDA2209	M	M	M			P	P	P	P	P
AP1510									P	P
APDA3210	M	M	M	M	M	M	M		P	
APDA3211	M	M				M	M	M	M	M
APDA3212	M	M			M	P	P	P	P	
APDA3213			M			M	M	P		
APDA2314	M	M		M	M		M		M	M
APDA4901	M	M	M	M	M			M	M	M

* Add a separate table for each track (if any).

5. Teaching and learning strategies applied to achieve program learning outcomes.

Describe teaching and learning strategies and curricular and extra-curricular activities adopted to achieve the Program's learning outcomes in all areas.

The program adopts a variety of teaching and learning strategies designed to align with the learning outcomes at the knowledge, skills, and values levels:

For Knowledge and Understanding (K1-K3):

- Interactive lectures supported by multimedia contents.



- Guided reading and structured summaries.
- In-class quizzes and conceptual problem-solving sessions.
- Supplementary learning through online platforms and simulations.

For Skills (S1-S4):

- Hands-on lab sessions and guided coding exercises.
- Project-based learning with case studies using real-world data.
- Data visualization workshops and tool-specific tutorials.
- Software simulations and assignments reflecting industry scenarios.

For Values, Autonomy, and Responsibility (V1-V3):

- Team-based projects with role assignments to develop collaboration.
- Reflection activities, peer reviews, and ethics-based discussions.
- Cooperative training to cultivate initiative, responsibility, and ethical practice.

The program also promotes self-directed learning, peer-assisted learning, and the integration of feedback mechanisms (e.g., formative assessments and instructor feedback) to enhance student development across all domains.

5. Assessment Methods for program learning outcomes.

Describe assessment methods (Direct and Indirect) that can be used to measure the achievement of program learning outcomes in all areas.

The Program should devise a plan for assessing Program Learning Outcomes (all learning outcomes should be assessed at least twice in the bachelor program's cycle and once in other degrees).

The program uses a combination of direct and indirect assessment methods to measure the achievement of all program outcomes (PLOs). Each PLO will be assessed at least once during the diploma cycle through mapped courses and program-level evaluations.

Direct Assessment Methods:

- Rubric-based evaluation of student performance in cooperative training.
- Performance in key course assessments (e.g., exams, practicals, presentations) aligned with mapped PLOs.
- Project and assignment grading in domain-specific courses (e.g., programming, data visualization).
- Lab work assessments and structured exercises using scoring rubrics.





Indirect Assessment Methods:

- Student exit surveys to evaluate perceived achievement of learning outcomes.
- Employer evaluations during cooperative training placements.
- Alumni feedback collected post-graduation.
- Course and program evaluation data analyzed for trends and gaps.

Assessment Plan:

- All PLOs are assessed at least once during the program duration.
- Each PLO is mapped to at least one course for direct assessment.
- Results are reviewed annually by the program's quality assurance committee or equivalent committees, and improvement actions are implemented based on assessment evidence and stakeholder feedback.

D. Student Admission and Support:

1. Student Admission Requirements

Applicants must meet the following admission requirements:

1. Hold a valid high school certificate or equivalent, preferably in a scientific or technical track.
2. Pass the general test (Qudrat) and achievement test (Tahsili) as required by national regulations.
3. Meet the minimum admission score set annually by the university and the Applied College.
4. Have a satisfactory record of conduct and health fitness.
5. Priority is given to applicants with strong interest in data and technology-related fields.

The program is also open to:

- Job seekers seeking practical skills in data analytics to enhance employability.
- Professionals from non-technical fields looking to transition into data-related roles.
- Working individuals wishing to upskill in technical data competencies.





Admission is subject to seat availability and the guidelines of the university's Deanship of Admission and Registration.

2. Guidance and Orientation Programs for New Students

(Include only the exceptional needs offered to the students of the Program that differ from those provided at the institutional level).

In addition to the standard orientation and advising services offered by the institution, the Data Analytics Diploma program provides tailored support for new students, including:

1. Program-specific orientation sessions explaining the structure, expected learning outcomes, and available exit points.
2. Individual academic advising to help students set learning goals and understand their academic responsibilities from the beginning of the program.

3. Student Counseling Services

(Academic, professional, psychological, and social)

(Include only the exceptional needs offered to the students of the Program that differ from those provided at the institutional level).

In addition to the institutional academic, psychological, and social counseling services, the program offers:

1. Academic advising tailored to the needs of diploma-level learners, especially those from non-technical backgrounds.
2. Support for working students or those re-entering education after a gap.
3. Professional advising sessions to guide students in planning their post-diploma career path.
4. Instructor check-ins and academic monitoring to identify students in need of early academic intervention.

5. Special Support

(Low achievers, disabled, gifted, and talented students).

The program implements support mechanisms for specific student groups in addition to those provided at the institutional level, including:

1. Remedial support sessions for low-achieving students, including tutoring and skills reinforcement.





2. Encouragement of gifted and high-performing students to participate in data competitions or extra-curricular projects.
3. Reasonable accommodation for students with disabilities in course delivery and assessment.

E. Faculty and Administrative Staff:

1. Needed Teaching and Administrative Staff

Academic Rank	Specialty		Special Requirements / Skills (if any)	Required Numbers		
	General	Specific		M	F	T
Professor	-	-	-	-	-	-
Associate Professor	-	-	-	-	-	-
Assistant Professor	Computer /Data Science	Data Science	Programming and practical tools such as, Python, Tableau, Excel, MySQL	2	2	4
Lecturer	Computer /Data Science	Data Science	Able to support lab sessions. Programming and practical tools such as, Python, Tableau, Excel, MySQL	2	2	4
Teaching Assistant	Computer /Data Science	Data Science	Able to support lab sessions. Programming and practical tools such as, Python,	2	2	4





			Tableau, Excel, MySQL			
Technicians and Laboratory Assistants	IT/Technical Support	-	Lab systems, software setup	1	1	2
Administrative and Supportive Staff	Academic Coordination	-	Registration, Communication, Use of SIS	1	1	2
Others (specify)	Career Services	-	Employer Liaison, Employer contact, CV help	1	1	2

F. Learning Resources, Facilities, and Equipment:

1. Learning Resources

Learning resources required by the Program (textbooks, references, e-learning resources, web-based resources, etc.)

The program utilizes a variety of learning resources to support student achievement of learning outcomes, including:

- Primary textbooks and references aligned with each course's intended outcomes, covering areas such as programming, statistics, machine learning, and data visualization.
- Online learning platforms including interactive coding environments and LMS-integrated content.
- Web-based resources and open educational resources (OERs) such as academic blogs, datasets, government portals, and MOOCs.
- Data software including Tableau, Excel, and Python libraries.

2. Facilities and Equipment

(Library, laboratories, classrooms, etc.)

The program is delivered through facilities that meet the needs of practical and interactive teaching:

- Computer laboratories equipped with high-performance machines, internet access, and pre-installed tools.
- Classrooms with projection systems and appropriate seating.
- Access to the university's library system.





3. Procedures to ensure a healthy and safe learning environment

(According to the nature of the Program)

The Applied College ensures a safe and inclusive environment through the following procedures:

- Compliance with the university's safety and emergency policies for all labs and facilities.
- Regular inspection and maintenance of lab equipment and infrastructure.
- Providing accessibility features and support services for students with disabilities.
- Promoting awareness of academic integrity and respectful conduct through student handbooks and orientations.
- Enforcing any health-related safety protocols as per national guidelines when applicable.

G. Program Quality Assurance:

1. Program Quality Assurance System

Provide a link to the quality assurance manual.

The program follows the institutional quality assurance policies outlined by the university and the Applied College. The quality assurance system is based on the national standards provided by the Education and Training Evaluation Commission (ETEC) and follows internal cycles of planning, monitoring, evaluating, and improving.

In addition, the program is being developed in alignment with national accreditation standards issued by ETEC, ensuring readiness for future programmatic accreditation through the appropriate regulatory body, such as the National Center for Academic Accreditation and Evaluation (NCAAA) or Masar.

[Link to the institutional QA manual](#)

2. Procedures to Monitor Quality of Courses Taught by other Departments

N/A



3. Procedures Used to Ensure the Consistency between Main Campus and Branches (including male and female sections).

The program ensures consistency between male and female sections and across branches through:

- Unified course specifications and assessments across all sections.
- Shared learning resources.
- Regular coordination between teaching staff in all sections.
- Joint quality assurance reviews and sharing of course reports and evaluations.
- Unified training and development for faculty to align delivery methods.

4. Assessment Plan for Program Learning Outcomes (PLOs),

The assessment of program learning outcomes is conducted based on the PLO-Course mapping matrix. Each PLO is assessed at least once during the program cycle. Assessment tools include direct methods (exams, rubrics, project evaluations) and indirect methods (surveys, feedback). Results are reviewed annually to identify strengths and areas for improvement, and improvement actions are implemented as part of the program's quality enhancement plan.

5. Program Evaluation Matrix

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Leadership and governance	Program leaders	Self-study, peer review	End of academic year
Teaching and assessment effectiveness	Student, Faculty	Surveys, course reports	End of each semester
Learning resources	Faculty, Students	Usage logs, feedback surveys	Mid-year and end of year
Student support services	Students, advisors	Surveys	Annually
Partnerships and Cooperative Training	Employers, partners	Employer feedback, advisory board	End of training cycle
PLO achievement	QA committee, faculty	PLO assessment tool and rubrics	End of program cycle



Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Graduate readiness	Graduates, employers	Exit surveys, follow-up interviews	One-year post-graduation

Evaluation Areas/Aspects: e.g., leadership, effectiveness of teaching & assessment, learning resources, services, partnerships, etc.

Evaluation Sources: students, graduates, alumni, faculty, program leaders, administrative staff, employers, independent reviewers, etc.

Evaluation Methods: e.g., Surveys, interviews, visits, etc.

Evaluation Time: e.g., beginning of semesters, end of the academic year, etc.



6. Program KPIs*

The period to achieve the target (3) years.

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
1	KPI-P-01	Percentage of achieved learning outcomes for all courses	≥85%	Course reports, assessment rubrics	End of each semester
2	KPI-P-02	Student satisfaction with quality of learning experience	≥ 4.0 / 5.0	Student satisfaction surveys	End of each semester
3	KPI-P-03	Employer satisfaction with graduates' competencies	≥ 80% satisfaction	Employer surveys after cooperative training	End of training cycle
4	KPI-P-04	Graduate employment rate within one year of graduation	≥ 70%	Alumni follow-up, national employment data	One-year post-graduation
5	KPI-P-05	Student retention rate (year 1 to year 2)	≥ 90%	Registration and progression records	Annually
6	KPI-P-06	Faculty satisfaction with resources and support	≥ 4.0 / 5.0	Faculty surveys	End of academic year
7	KPI-P-07	Percentage of students involved in co-curricular or enrichment activities	≥ 50 %	Participation records, activity reports	Annually





No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
8	KPI-P-08	Completion rate of program within expected duration	≥ 80%	Graduation records	End of program cycle

*including KPIs required by NCAAA

H. Specification Approval Data:

Council / Committee	Umm Al-Qura University Council
Reference No.	851281214463/193664
Date	1447/01/20

