



Program Specification

(Bachelor)

Program:	Bachelor of Applied Statistics in Data Analysis	
Program Code (as per Saudi university ranking):	STAT (054201)	
Qualification Level:	Bachelor Program (Level 6)	
Department:	Department of Basic Sciences	
College:	College of Science and Theoretical Studies	
Institution:	Saudi Electronic University (SEU)	
Program Specification:	New ☒	updated* ☐
Last Review Date:	20/01/2025	

*Attach the previous version of the Program Specification.

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A. Program Identification and General Information

1. Program's Main Location:

Main Campus in Riyadh (Male-Female)

2. Branches Offering the Program (if any):

Branch 1. Dammam (Male-Female)

Branch 2. Jeddah (Male-Female)

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

None

4. Professions/jobs for which students are qualified

Teacher/ Bank employee / Accountant /Insurance employee/ Data analyst/ Financial analyst/
Financial / Economic researcher

5. Relevant occupational/ Professional sectors:

Working in the public and private sectors such as banks, insurance companies, financial institutions, research centers, education, health, industrial and military sectors.

6. Major Tracks/Pathways (if any):

Major track/pathway	Credit hours (For each track)	Professions/jobs (For each track)
1. Applied Statistics in Data Analysis	124	Teacher/Bank employee /Accountant /Insurance employee/ Data analyst/ Financial analyst/ Financial / Economic researcher

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

exit points/awarded degree	Credit hours
1. Associate Diploma in Statistics.	34 Credit Hours+6 Credit Hours (internship) = 40 Credit Hours.
2. Intermediate Diploma in Applied Statistics.	70 Credit Hours+6 Credit Hours (internship) = 76 Credit Hours.

8. Total credit hours: (124)





B. Mission, Objectives, and Program Learning Outcomes

1. Program Mission:

To provide high-quality education that empowers students to apply their knowledge in exploring real-world applications related to the fields of Mathematics, Statistics, and Data Analysis and contribute to national and community development.

2. Program Goals:

1. Developing basic statistical and analytical skills for individuals to enhance their job opportunities in both the public and private sectors.
2. Preparing graduates who are capable of keeping up with contemporary scientific and technological developments in the field of modern statistical data science, enabling students to use computational and technological modeling in data analysis and decision-making.
3. The increasing demand for data analysts and statisticians, driven by the massive growth of data across all economic sectors, has led to a high demand for specialists who can understand and interpret this data. Graduates of applied statistics in data analysis are well-positioned to pursue careers as data analysts, data scientists, statisticians, and in other related fields.
4. Graduating highly skilled students capable of excelling in both the public and private sectors, aligning with the needs of the labor market and the 2030 Vision in areas of decision-making, data analysis, and management.

3. Program Learning Outcomes*

Knowledge and Understanding

K1	The student is expected to acquire mathematical and statistical knowledge necessary to define problems from a statistical perspective
K2	The student is expected to identify key aspects of mathematics, statistics and data analysis, including their foundations, principles, theories, and models.
K3	The student acquires the knowledge necessary to use the terminology, hypotheses, theories, and practices associated with statistics and data science effectively.
K4	The student is expected to use computer statistical software in solving real life Problems

Skills

S1	The student is expected to describe, analyze and interpret data and draw appropriate conclusions
S2	The student is expected to justify the steps of the solution logically and statistically.





S3	The student is expected to demonstrate proficiency in using statistical software and computer programs to solve statistical problems and analyze data.
S4	The student is expected to select and apply appropriate strategies to solve statistical problems and analyze data.
Values, Autonomy, and Responsibility	
V1	The student is expected to work independently and/or as a member of a multidisciplinary team
V2	The student is expected to adhere to professional and ethical standards in making statistical judgments
V3	The student is expected to have the ability for decision-making.

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

3. 1 Associate Diploma in Statistics Learning Outcomes*

Knowledge and Understanding

K1	The student is expected to acquire mathematical and statistical knowledge necessary to define problems from a statistical perspective
K2	The student is expected to identify key aspects of mathematics, statistics and data analysis, including their foundations, principles, theories, and models.
K4	The student is expected to use computer statistical software in solving real life Problems

Skills

S1	The student is expected to describe, analyze and interpret data and draw appropriate conclusions
S2	The student is expected to justify the steps of the solution logically and statistically.
S3	The student is expected to demonstrate proficiency in using statistical software and computer programs to solve statistical problems and analyze data.
S4	The student is expected to select and apply appropriate strategies to solve statistical problems and analyze data.

Values, Autonomy, and Responsibility

V1	The student is expected to work independently and/or as a member of a multidisciplinary team
V2	The student is expected to adhere to professional and ethical standards in making statistical judgments

3.2 Intermediate Diploma in Applied Statistics Learning Outcomes*

Knowledge and Understanding



K1	The student is expected to acquire mathematical and statistical knowledge necessary to define problems from a statistical perspective
K2	The student is expected to identify key aspects of mathematics, statistics and data analysis, including their foundations, principles, theories, and models.
K4	The student is expected to use computer statistical software in solving real life Problems
Skills	
S1	The student is expected to describe, analyze and interpret data and draw appropriate conclusions
S2	The student is expected to justify the steps of the solution logically and statistically.
S3	The student is expected to demonstrate proficiency in using statistical software and computer programs to solve statistical problems and analyze data.
S4	The student is expected to select and apply appropriate strategies to solve statistical problems and analyze data.
Values, Autonomy, and Responsibility	
V1	The student is expected to work independently and/or as a member of a multidisciplinary team
V2	The student is expected to adhere to professional and ethical standards in making statistical judgments
V3	The student is expected to have the ability for decision-making.



C. Curriculum

1. Curriculum Structure

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Institution Requirements	Required	6	22	17.74%
	Elective	0	0	
College Requirements	Required	1	3	2.42%
	Elective	0	0	
Program Requirements	Required	30	90	72.58%
	Elective	0	0	
Capstone Course/Project		1	3	2.42%
Field Training/ Internship		1	6	4.84 %
Residency year				
Others				
Total		39	124	100%

* Add a separated 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 University)
Level 1	Eng001	English language 1	Required	-	6	University
	Cs001	Introduction to Artificial Intelligence and Computing	Required	-	3	University
	Slm101	Slm101	Required	-	2	University
	Math001	Fundamentals of Math	Required	-	3	College
	Stat111	Principles of Statistics 1	Required	-	3	Program
Level 2	Slm102	SLM102	Required	Slm101	2	University
	Eng002	English language 2	Required	-	6	University





Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or University)
	Ci001	Academic Skills	Required	-	3	University
	Stat121	Principles of Statistics 2	Required	Stat111	3	Program
	Math 121	Calculus 1	Required	Math001	3	Program
Level 3	Stat232	Principles of Probability 1	Required	Stat111	3	Program
	Math231	Calculus 2	Required	Math121	3	Program
	Stat236	Decision Making Methods	Required	Stat121	3	Program
	Stat233	Regression analysis	Required	Stat121	3	Program
	Stat234	Design of Experiments and Analysis	Required	Stat121	3	Program
	Stat235	Linear Models	Required	Stat121	3	Program
	Stat242	Principles of Probability 2	Required	Stat 232	3	Program
Level 4	Stat245	Survival Analysis	Required	Stat121, Stat232	3	Program
	Stat 241	Sampling Theory and Methods	Required	Stat232, Stat233	3	Program
	Stat246	Statistical Data analysis	Required	Stat232, Stat 233	3	Program
	Stat243	Statistical Inference 1	Required	Stat232	3	Program
	Stat244	Demographic Analysis	Required	Stat233	3	Program
	Stat355	Statistical Packages 1	Required	Stat242, Stat245	3	Program
Level 5	Stat354	Time Series Analysis	Required	Stat 233, Stat235	3	Program
	Math351	Elementary Discrete Mathematics	Required	Math121	3	Program





Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
	Stat352	Nonparametric Statistics	Required	Stat243	3	Program
	Stat353	Statistical Inference 2	Required	Stat243	3	Program
Level 6	Stat361	Descriptive statistics	Required	Stat243	3	Program
	Stat362	Statistical Data Mining	Required	Stat246, Stat354	3	Program
	Math361	Elementary Linear Algebra	Required	Math351	3	Program
	Stat363	Multivariate Analysis	Required	Stat352, Stat354	3	Program
	Stat364	Stochastic Processes	Required	Stat242	3	Program
Level 7	Stat473	Statistical Machine Learning	Required	Stat362, Stat246 Math361	3	Program
	Stat476	Statistical Packages 2	Required	-	3	Program
	Math 475	Numerical Analysis	Required	Math361	3	Program
	Stat471	Introduction in Actuarial Statistics	Required	Stat361	3	Program
	stat472	Sequential Analysis	Required	Stat361, Stat352	3	Program
Level 8	Stat 483	Graduation Project	Required	-	3	Program
	Stat 484	Internship	Required	-	6	Program

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

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

First exist point: Associate Diploma in Statistics





Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or University)
Level 1	Eng001	English language 1	Required	-	6	University
	Cs001	Introduction to Artificial Intelligence and Computing	Required	-	3	University
	Slm101	SLM101	Required	-	2	University
	Math001	Fundamentals of Math	Required	-	3	College
	Stat111	Principles of Statistics 1	Required	-	3	Program
Level 2	Slm102	SLM102	Required	Slm101	2	University
	Eng002	English language 2	Required	-	6	University
	Ci001	Academic Skills	Required	-	3	University
	Stat121	Principles of Statistics 2	Required	Stat111	3	Program
	Math 121	Calculus 1	Required	Math001	3	Program
Level 3	Stat 484	Internship	Required	-	6	Program

Second exist point: Intermediate Diploma in Applied Statistics

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or University)
Level 1	Eng001	English language 1	Required	-	6	University
	Cs001	Introduction to Artificial Intelligence and Computing	Required	-	3	University





Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
	Slm101	SLM101	Required	-	2	University
	Math001	Fundamentals of Math	Required	-	3	College
	Stat111	Principles of Statistics 1	Required	-	3	Program
Level 2	Slm102	SLM102	Required	Slm101	2	University
	Eng002	English language 2	Required	-	6	University
	Ci001	Academic Skills	Required	-	3	University
	Stat121	Principles of Statistics 2	Required	Stat111	3	Program
	Math 121	Calculus 1	Required	Math001	3	Program
Level 3	Stat232	Principles of Probability 1	Required	Stat111	3	Program
	Math231	Calculus 2	Required	Math121	3	Program
	Stat236	Decision Making Methods	Required	Stat121	3	Program
	Stat233	Regression analysis	Required	Stat121	3	Program
	Stat234	Design of Experiments and Analysis	Required	Stat121	3	Program
	Stat235	Linear Models	Required	Stat121	3	Program
Level 4	Stat242	Principles of Probability 2	Required	Stat 232	3	Program
	Stat245	Survival Analysis	Required	Stat121, Stat232	3	Program
	Stat 241	Sampling Theory and Methods	Required	Stat232, Stat233	3	Program
	Stat246	Statistical Data analysis	Required	Stat232, Stat 233	3	Program
	Stat243	Statistical Inference 1	Required	Stat232	3	Program





Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
	Stat244	Demographic Analysis	Required	Stat233	3	Program
Level 5	Stat 484	Internship	Required	-	6	Program

3. Course Specifications:

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

4. Program learning Outcomes Mapping Matrix:

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

Course code & No.	Program Learning Outcomes										
	Knowledge and understanding				Skills				Values, Autonomy, and Responsibility		
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3
Stat 111	I	I			I	I			I	I	
Stat 121	I	I		I	I	I	I		I	I	
Math 121	I	I			I			I	I		
Stat 232	I	I			I	I			I		
Math 231	I	I				I		I		I	
Stat 236	I			I	P			P			I
Stat 233	P			P	P	P					P
Stat 234	P	P			P	P				P	
Stat 235		I		P	P			P			P
Stat 242	P	P			M	M	M	M			P
Stat 245	P	P			P	P			M		
Stat 241	P	P			M	M			M		M
Stat 246	P	P			M	M	M		P	P	
Stat 243	P	P			P	P			P		P
Stat 244	P	P				P		P			P
Stat 355				P			P				P
Stat 354	M	M		P	M					M	





Course code & No.	Program Learning Outcomes										
	Knowledge and understanding				Skills				Values, Autonomy, and Responsibility		
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3
Math 351	I	I			P			P		P	
Stat 352	P		P		M			M	M		M
Stat 353	P	P	M			M		M			M
Stat 361	M	M			M			M		M	
Stat 362	I	P				P	I		I	P	
Math 361	P	P			P	P		P	P		
Stat 363		M	P					M		M	M
Stat 364	P	P			P	P			P		P
Stat 473		P					P		M		
Stat 476				M			M				M
Math 475	P	P			P	P			P	P	
Stat 471	I				P		M			M	P
Stat 472	I		P				P			P	
Stat 483		P					M			M	
Stat 484	P							M	P		P

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

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

Describe teaching and learning strategies, including curricular and extra-curricular activities, to achieve the program learning outcomes in all areas.

- Lectures that are considered as direct teaching between the lecturer and students, whether through class rooms or by using e-learning (blackboard). This strategy occupied the most of the time.
- Aimed teaching that is a strategy for developing oral discussion, creativity and imagination.
- Using blackboard tools such as the discussion board tool, which plays a role in enhancing students' thinking and discussion abilities and skills.
- Cooperative learning is a strategy to encourage students to work together by dividing them to small groups for solving and discussion about the topics and class activities.
- Promote problem-solving is a strategy involve that students are asked to solve problems related to the given topic individually and within a team.



- Writing to learn is an important strategy where students are encouraged to write the lectures to remember more, also they are given assignments to enhance their abilities and thinking skills.

6. 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 the following assessment methods:

- Direct methods:
- Individual and Group assignments
- Senior projects evaluation
- Lab exams
- Assignments
- Midterm and final exams

Indirect methods:

- Course evaluation surveys
- Exit Survey of final year students
- Employers survey and feedbacks
- Field experience survey
- Employers' evaluation of the SEU graduate's proficiency

D. Student Admission and Support:

1. Student Admission Requirements

- A high school certificate Science Section or its equivalent.
- Student must submit STEP test score.

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).

- At the beginning of each year, orientation day for the new students
- Program handbook is provided to the students with details and all program requirements
- At the beginning of each semester, the first week is dedicated to introducing the students to the courses
- Academic consulting where some faculty members are assigned to provide counseling, guidance, and advice services to students.





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).

- The program handbook gives details and all requirements of the program.
- List of academic guidance and office hours per week are declared on each faculty member office.
- The program shares with its students any important information related to the academic process on educational process through various technical tools such as the blackboard system, the use of official emails and various social media.

4. Special Support

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

- The university is provided all the requirements of disabled students (elevators, car parking, and special paths).
- Cooperative learning or other forms of teamwork are an active method to meet the needs of low achievers and gifted students.
- Monitoring and helping the low achievers through discussed them, and identify the causes for the low performance. They are asked for extra support in office hours.
- Participate the talented students in internal and external activities.

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	-	-	-	0	0	0
Associate Professor	-	-	-	0	0	0
Assistant Professor	-	-	-	0	0	0
Lecturer	-	-	-	0	0	0
Teaching Assistant	-	-	-	0	0	0



Technicians and Laboratory Assistant	-	-	-	0	0	0
Administrative and Supportive Staff	-	-	-	0	0	0
Others (specify)	-	-	-	0	0	0

F. Learning Resources, Facilities, and Equipment:

1. Learning Resources

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

- Internal committees determine the references and academic plan reviews these references.
- Availability of faculty members and students to access Saudi library digital.

2. Facilities and Equipment

(Library, laboratories, classrooms, etc.)

- Electronic library is represented by Saudi library digital.
- The main campus has labs providing with mathematical programs that needed
- The main campus has medical clinic for the faculty members and students.

3. Procedures to ensure a healthy and safe learning environment

(According to the nature of the program)

Maintaining a safe and healthy environment is a priority to the SEU. This will create a positive impact on the learners and make them success in their study. Kindly refer to

<https://seu.edu.sa/aosas>

<https://seu.edu.sa/aoms>

<https://seu.edu.sa/ar/deanships/student-affairs-deanship/about/>

G. Program Quality Assurance:

1. Program Quality Assurance System

Provide a link to quality assurance manual.





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

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

All the assessment activities (Quiz, Assignments, Exams) are unified, and published in the same time for all CRNs.

- Only one coordinator is responsible of managing that course.
- The course modules are unified, and delivered to students according to one week plan that must be followed by all the instructors.

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

5. Program Evaluation Matrix

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Effectiveness of teaching & assessment	Students	Surveys	End of the academic year
Quality of learning resources	Students	Surveys	End of the academic year
Instructor's interaction with students	Students	Surveys	End of the academic Semester
Blackboard tools efficiency	Students	Surveys	End of the academic year
reasonability of assessments' grading	Students	Surveys	End of the academic Semester
Effectiveness of assessments	Faculty members	Faculty Satisfaction Survey	End of the academic year
Students' skills	COOP Employer	COOP Employer Survey	End of the academic Semester

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, and others).



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 (____) year(s).

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
1					
2					
3					
4					
5					
.....					

*including KPIs required by NCAAA

H. Specification Approval Data:

Council / Committee	
Reference No.	
Date	

