|  |
| --- |
| Program Name: **Master in Data Science (MDS)** |
| Program Code: 061902 |
| Qualification Level: Level 7 |
| Department: Computer Science department |
| College: College of Computing and Informatics (CCI) |
| Institution: Saudi Electronic University (SEU) |
| Program Specification: New ☐ updated\* ☒ |
| Last Review Date: 16/09/2025 |

\*Attach the previous version of the Program Specification.

\*Attach the previous version of the Program Specification.

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# **A. Program Identification and General Information:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. Program’s Main Location: | | | | | |
| Riyadh | | | | | |
| 2. Branches Offering the Program (if any): | | | | | |
| N.A. | | | | | |
| 3. System of Study: | | | | | |
| ☐ Coursework & Thesis | | | ☒ Coursework | | |
| 4. Mode of Study: | | | | | |
| ☐ On Campus | ☐ Distance Education | | | ☒ **Other (Blended)** | |
| 5. Partnerships with other parties (if any) and the nature of each: | | | | | |
| - Partnership Arrangement:  The SEU collaborated with the Colorado State University-Global (CSUG) to develop the MDS program and teach the program courses. The CSUG is one of long-distance international accredited degree universities, and it is the first statutorily defined 100% online public university in the United States.  The SEU is continuing the partnership collaboration with CSUG to deliver e-learning contents to the students of the MDS program. Each course is delivered to the MDS students by two faculty members: one from the SEU and one from the CSUG.  Moreover, the MDS program, in collaboration with the CSUG University, periodically reviews study plans and develops the courses contents. In a collaborative process between the MDS and CSUG faculty members, an annual review is conducted for each course and a Course Design Document (CDD) is prepared and once approved, it is reflected on the course syllabus and Blackboard. | | | | | |
| 6. Professions/jobs for which students are qualified: | | | | | |
| At the end of the program, students will be prepared for the following professions and occupations:   * Statistician * Data Administrator * Computer Systems Analyst * Data Scientist * Software Developer * Data Analyst * Big Data Engineer * Financial Data Analyst * Machine Learning Engineer * Data Manager * Business Intelligence Engineer * Big Data Administrator * Data Mining Analyst * Data Engineer * Big Data Architect * Data Visualization Developer * Educational and Academic field occupations in General and Higher Education Institutions. | | | | | |
| 7. Relevant occupational/ Professional sectors: | | | | | |
| * Information Technology (IT) * Data Science and Analytics * Software Engineering * Artificial Intelligence and Machine Learning * Higher Education and Academia * Business Intelligence and Strategy * Big Data and Cloud Computing * Research and Development * Statistical and Mathematical Modelling * Education | | | | | |
| 8. Major Tracks/Pathways (if any): | | | | | |
| Major track/pathway | | **Credit hours**  (For each track) | | | **Professions/jobs**  (For each track) |
| NA | | NA | | | NA |
| 9. Total credit hours: 36 Credit Hours | | | | | |

# **B. Mission, Goals, and Program Learning Outcomes**

|  |  |  |
| --- | --- | --- |
| **1. Program Mission:** | | |
| The program aims to qualify students with high academic skills in aspects related to data science and usage of data analysis software, providing students with the latest tools and methods in big data technologies for the next generation. In addition, the program focuses on combining the cognitive and applied aspects in the field of data science, machine learning and artificial intelligence; and practically apply these technologies in problem solving. | | |
| **2. Program Goals:** | | |
| 1. Balance between data science studies theory and practical work. 2. Develop both academic and professional skills in the domain of data science and big data analytics. 3. Prepare learners for the data science profession or continued study. 4. Implementing best practices to develop comprehensive project management plan. 5. Prepare the learner to meet the business needs in areas where data science skills are required in various sectors. | | |
| **3. Program Learning Outcomes:\*** | | |
| **Knowledge and Understanding:** | | |
| K1 | | Explain management, ethical, privacy, and accountability issues in data science. |
| K2 | | Recognize the major theories of machine learning techniques including neural networks. |
| **Skills:** | | |
| S1 | Explore, analyze, manage, and visualize large data sets using the latest technologies | |
| S2 | Apply data science methods to address data-rich problems by developing algorithmic, computational, and statistical model. | |
| S3 | Demonstrate the application oral and written communication in machine learning models to support decision making, problem-solving strategies, and data analytics. | |
| **Values, Autonomy, and Responsibility:** | | |
| V1 | Evaluate opportunities to employ data science solutions in accordance with business ethics and values. | |

\* \* Add a table for each track (if any)

# 

# **C. Curriculum:**

**1. Curriculum Structure:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Program Structure** | **Required/ Elective** | **No. of courses** | **Credit**  **Hours** | **Percentage** |
| **Course** | Required | 11 | 33 | 91.67% |
| Elective |  |  |  |
| Graduation Project (Capstone Project) |  | 1 | 3 | 8.3% |
| **Total** | | 12 | 36 |  |

\* 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 Program) |
| --- | --- | --- | --- | --- | --- | --- |
| **Level**  **1** | CS501 | Research Methods in Computational Studies | Required | None | 3 | Institution |
| DS510 | Statistics for Data Science | Required | None | 3/ Lab | Program |
| DS540 | Advanced Python for Data Science | Required | None | 3/ Lab | Program |
| **Level**  **2** | DS520 | Big Data Processing and Analytics | Required | DS510 & DS540 | 3/ Lab | Program |
| DS630 | Artificial Intelligence for Data Science | Required | DS540 | 3/ Lab | Program |
| DS560 | Advanced Data Mining | Required | None | 3/ Lab | Program |
| **Level**  **3** | DS610 | Advanced Applied Statistics for Data Science | Required | DS510 | 3/ Lab | Program |
| DS620 | Data Visualization | Required | DS560 | 3/ Lab | Program |
| DS550 | Machine Learning Algorithms for Data Science | Required | DS520, DS630 | 3/ Lab | Program |
| **Level**  **4** | DS650 | Predictive Analytics for Business | Required | DS560, DS610 | 3/ Lab | Program |
| DS660 | Deep Learning Techniques | Required | DS630 | 3/ Lab | Program |
| DS698 | Capstone Project in Data Science | Required | Department Approval | 3 | 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)

|  |
| --- |
| All course specifications are attached [here](https://seuedu-my.sharepoint.com/:f:/g/personal/cci_cs_seu_edu_sa/Er0mdib2hThPi1XRyPXfCboB-YGnY71rcnriqZztSzECww?e=hjuiDz). |

**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** | **S1** | **S2** | **S3** | **V1** |
| **CS501** | I (CLO1) | I (CLO2) |  | P (CLO3) | I (CLO4, CLO5) | I (CLO6) |
| **DS510** |  | I (CLO1, CLO2) | I(CLO3) |  | P (CLO4, CLO5) | P (CLO6) |
| **DS540** |  | I(CLO1, CLO2) | P (CLO3) | I (CLO4) | P (CLO5) | P (CLO6) |
| **DS520** | I (CLO1) | I (CLO2) | P (CLO3) | P (CLO4) | P (CLO5) | M (CLO6) |
| **DS560** | P (CLO1) | M (CLO2) |  | P (CLO3, CLO4) | M(CLO5) | M (CLO6) |
| **DS630** |  | I(CLO1, CLO2) |  | P (CLO3, CLO4) | M(CLO5) | M (CLO6) |
| **DS610** | I(CLO1) | P(CLO2) | P(CLO3) | M(CLO4) | M(CLO5) | M (CLO6) |
| **DS620** | I(CLO1) |  |  | P(CLO2) | P(CLO3) M(CLO4) | M (CLO5) |
| **DS550** | I(CLO1) | P(CLO2) | P(CLO3) | M(CLO4, CLO5) | M (CLO6) |  |
| **DS650** |  | P(CLO1) | P(CLO2) | M(CLO3, CLO4) |  | M (CLO5) |
| **DS660** | I(CLO1) | P(CLO2) |  | M(CLO4, CLO3) | M(CLO5) | M (CLO6) |
| **DS698** |  | M(CLO1) | M(CLO2) | M(CLO3) | M(CLO4, CLO5) | M (CLO6) |

\* 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, to achieve the program learning outcomes in all areas.

|  |
| --- |
| The MDS program use several effective teaching strategies. The most used teaching strategies are:   * Group teaching (F2F Lectures) * Virtual sessions * Class discussions * Active learning (group-work case studies and projects) * Presentations   Extracurricular Activities:  The Deanship of Admission and Student Affairs provides extracurricular activities for All SEU students according to a plan seeking to achieve the SEU educational goals. In addition, the MDS students can:   * Participate in Coding workshops/competitions. * Join Clubs |

**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 once in the program’s cycle).

|  |
| --- |
| To measure the achievement of program learning outcomes, the MDS program uses the following assessment methods:  Direct methods:   * Midterm and final exams   Indirect methods:   * Course evaluation surveys |

# **D. Thesis and Its Requirements (if any):**

**1. Registration of the thesis:**

(Requirements/conditions and procedures for registration of the thesis as well as controls, responsibilities and procedures of scientific guidance)

|  |
| --- |
| NA |

**2. Scientific Supervision:**

(The regulations of the selection of the scientific supervisor and his/her responsibilities, as well as the procedures/ mechanisms of the scientific supervision and follow-up)

|  |
| --- |
| The MDS program has no academic supervision since it does not provide any thesis to its students. However, the program has a capstone project (DS698), and it has a capstone project supervision plan. The capstone project supervision plan can be accessed [here](https://seuedu-my.sharepoint.com/:b:/g/personal/cci_cs_seu_edu_sa/ERcXe7AFQ5xGhfzVVjloPaYB_J3YP8ruJ1nZVZWZRCvFag?e=2FDMfh). |

**3.Thesis Defense/Examination:**

(The regulations for selection of the defense/examination committee and the requirements to proceed for thesis defense, the procedures for defense and approval of the thesis, and criteria for evaluation of the thesis)

|  |
| --- |
| NA |

# **H. Student Admission and Support:**

**1. Student Admission Requirements:**

|  |
| --- |
| * Bachelor’s degree in computer science, Computer Engineering, Information Systems, Software Engineering, Information Technology. * GPA 3.00/5.00, 2.00/4.00, or equivalent grades * Minimum score on either of the following tests: IELTS 5.0, STEP 76 and TOEFL\_IBT 45. * The admission requirements can be found here: <https://seu.edu.sa/gs/ar/admission-requirements/> |

**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).

|  |
| --- |
| A specialised orientation session is conducted for students newly admitted to the program. This Program Overview Session includes tailored guidance on the structure of the program and curriculum, course sequencing, grading structure and expected learning outcomes specific to the program. A Dedicated sessions for capstone project orientation forintroducing the Capstone component, including explanation of project requirements and timelines, guidance on topic selection aligned with industry needs or research interests, and support mechanisms such as assigned faculty advisors and access to specialized labs or resources. Orientation session files can be found [here](https://seuedu-my.sharepoint.com/:f:/g/personal/a_alhrgan_seu_edu_sa/Eql43IQbtZhAniDlYBF_XtcBy8PPDOlBz9gt3krq-Lx4fA?e=JDQJti). |

**3. Student Counselling 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)

|  |
| --- |
| * Faculty members are required to post their contact information as well as office hours on Blackboard. * All faculty have physical and virtual office hours each week where students can contact them via email, video conference, messages or by phone. Faculty are also available throughout the week and respond to students. * Students of the MDS Program have the right to use the health care provided in the health facilities of SEU. * Students of the MDS Program take advantage of the available credit services and facilities such as electronic university books, sports facilities, basements, car parking, etc... * On-line Da’am System is available to solve any technical issues faced by students during lectures and exams. * The periodic meeting for male and female students is held on a fixed basis at the beginning of each semester, where all students can send direct inquiries and raise inquiries to the Dean of the CCI. * Different activities and services were implemented at the SEU and CS department levels to support students during their study journey. For example, the SEU has efficient Student care center portal contains all necessary units the student needs, such as the social counseling unit, Mental Health Support Unit, The academic advising unit, The career counseling and career support unit, The scholarship and aid unit, Talent and Creativity Unit, and the Disabilities Support Unit. This Student care centre can be reached via <https://seu.edu.sa/dsa/en/department-of-counseling-and-guidance/> * The university seeks to guarantee students' rights and seeks to educate them about their rights and responsibilities. Therefore, the university established two committees to protect students' rights   **Sub-Committee for the Protection of Student Rights:**   * It considers all educational and administrative grievances and complaints of students, except for administrative matters outside the framework of the college.   **Main Committee for Student Rights Protection:**   * It considers all students ’grievances and complaints filed against the administrative authorities at the university and grievances coming from the sub-committees. |

**4. Special Support:**

(Low achievers, disabled, and talented students).

|  |
| --- |
| In collaboration with Students Affairs Office, the requirements for special need applicants are provided. Such as elevators between classes’ floors, cars’ parking, and toilets’ seats. In addition, the SEU has efficient Student care center portal contains all necessary units the student needs, such as the social counseling unit, Mental Health Support Unit, The academic advising unit, The career counseling and career support unit, The scholarship and aid unit, Talent and Creativity Unit, and the Disabilities Support Unit. This Student care centre portal can be reached via <https://seu.edu.sa/dsa/en/department-of-counseling-and-guidance/>  Moreover, students with special needs are provided with dedicated programs designed to serve them on an individual basis. In addition, there is a specialized psychological and social counseling unit to provide help when needed (Email: [pscu@seu.edu.sa](mailto:pscu@seu.edu.sa)).  Talented and outstanding students receive financial incentives and rewards. The CCI collage is challenging talented students through different completions. This contribution aims to spread the spirit of competition among students and as a kind of motivation for them to excel and creativity. The college regularly holds a competition to select the best graduation projects at the level of all branches of the university and evaluated by a group of faculty members, as the competition includes educational and applied fields for undergraduate students and Masters. The college also encourages and supports students to participate in local and international conferences and competitions, such as Data Science conferences and competitions, programming competitions, and artificial intelligence. |

**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** | Computer Science | * Machine Learning * Artificial Intelligence * Statistical Analysis * Data Science |  | **1** | **1** | **2** |
| **Associate Professor** | Computer Science | * Machine Learning * Artificial Intelligence * Statistical Analysis * Data Science |  | **5** | **2** | **7** |
| **Assistant Professor** | Computer Science | * Machine Learning * Artificial Intelligence * Statistical Analysis * Data Science |  | 10 | 9 | 19 |
| **Technicians and Laboratory Assistant** | **-** | **-** |  |  |  |  |
| **Administrative and Supportive Staff** | Holding Bachelor's/ diploma degree |  | Computer Skills  Microsoft Office programs skills | **2** | **1** | **3** |
| **Others (specify)** | **-** | **-** | **-** | **-** | **-** | **-** |

# **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.)

|  |
| --- |
| The SEU has developed a faculty development program designed to strengthen instructional quality and to cultivate a community of faculty who are recognized regionally and nationally as experts in the field of online education and learning management system.   * Encourage staff members to attend courses and workshops related to the development of their teaching skills such as workshops in Blackboard. * Provide advice and guidance to improve and enhance the performance of teaching.   Other professional development including knowledge of research:   * Encourage members to enroll in the training courses and workshops in other areas. * Encourage department members to attend conferences and symposia. * Promote scientific contact through visits and visiting professors. * Scientific meetings and briefing ongoing and distribution of publications. * Encourage staff members to enroll in continuing education programs. |

**2. Facilities and Equipment:**

(Library, laboratories, classrooms, etc.)

|  |
| --- |
| The campuses, where the MDS program is provided, have modern classrooms with electronic gadgets required for smooth execution of class hours. The students also avail the opportunities to interact with faculty during visiting hours who are required to be in their allocated office spaces which are also furnished with all facilities needed for blended learning environment including needed hardware and software.   * IT equipment’s include:  1. State of the art computing machines and laptops for faculty members. 2. 24 hours uninterrupted high speed Internet provision at all the campuses. 3. Provision of SEU portal accounts to all the students and faculty members. 4. Blackboard system as a teaching platform with accounts for all teachers and students to manage their academic activities and conduct virtual sessions. 5. Attendance, grading, E-mail, and other relevant software. 6. Access to Saudi Digital Library (SDL) for all students and faculty alike.  * Blackboard includes full course contents for faculties and students enrolled for any particular course. This includes all needed references. * Online books are available from WileyPlus, in with the University has a contract with. * The CCI college also offers hard copies of textbooks to faculty members.   In addition, the SEU has a collection development policy where librarian communicates with stakeholders to identify existing strengths and weakness to best align the collection with current research and curricular needs. The librarian makes final purchasing decisions with input from administration, faculty, and students.  The SEU librarian brings new resources to the attention of different stakeholders for consideration, coordinates trials to electronic resources, negotiates site licenses and user agreements, maintains current subscription lists as well as works with select consortia/SEU to share resources.  The following selection criteria are considered when evaluating resources:   * Facilitation of online teaching and learning. * Provision of relevance to the existing collection’s strengths and weaknesses. * Restrictions on number of users, simultaneous users, or points of access. * Delivery to users in a timely and convenient manner. * Affordability; or comparative cost including the cost of acquisition, licensing, maintenance, service, and potential preservation. * Availability of technical support and acceptable licensing requirements.   In addition, the SEU has a subscription to the SDL to provide E-books and other publications for all its employees and students, where each SEU’s employee or student can access SDL and directly download scientific references. The SDL can be accessed via the available icon on the SEU’s homepage or directly from their website.  It is mandatory for all classes to be held in professionally designed classrooms during the face to face hour. Each class is equipped with electronic podium which has the facility to record the lecture as well as sound control apart from other features. Each classroom is connected to the Internet. Multimedia support is available in every classroom. In addition, each classroom is equipped with general amenities like air-conditioning, sufficient lighting, and proper sitting arrangements. All classrooms are regularly monitored to ensure that none of the assets is in bad or disorderly shape. |

**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. In this regard, the SEU maintains the safety of the university buildings and the safety of university staff from fire situations, God forbid, prevent losses, prevent detention inside elevators, maintain environmental integrity, and follow up and organize the work of the safety project.  The SEU [Safety Department](https://seu.edu.sa/aosas/en/university-safety/) ensures that the alarms are valid in coordination with the concerned authority, makes sure the fire equipment is valid, Set up safety and firefighting shifts, prepares evacuation plans for the buildings during the fire, God forbid, and cooperates with civil defense and red crescent. Kindly refer to <https://seu.edu.sa/aosas/en/home/> for more details.  In addition, the SEU pays great attention to all aspects of its members' care, especially with regard to the health services, for example there is an evening clinic that treats emergencies. Kindly refer to <https://seu.edu.sa/aoms/en/home/> for more details. |

# **G. Program Quality Assurance:**

**1. Program Quality Assurance System:**

Provide a link to quality assurance manual.

|  |
| --- |
| The MDS program quality assurance system can be accessed from [**here**](https://seuedu-my.sharepoint.com/:b:/g/personal/cci_cs_seu_edu_sa/ERG9EtIanRJGgBKkC9jkcxkBnRN0UoeRgx-CmOsJm1EIlw?e=0c9qyA). The quality assurance at all CCI programs follows the SEU quality assurance system refer to Deanship of Development and Quality page for details: <https://seu.edu.sa/vropdq/en/about/> |

**2. Program Quality Monitoring Procedures:**

|  |
| --- |
| The MDS program has an assessment plan that links course‐based and external assessments with the program learning outcomes. This faculty‐driven process collects data in the courses using an electronic rubric‐based tool integrated with the Blackboard learning environment, to automatically track, record, and tally instructor‐evaluated work and provides students with comprehensive feedback of their submission and faculty comments. Data collected from the rubrics is aligned with the program learning outcomes. At the end of each semester, the assessment data is prepared in a Learning Outcomes and Quality Indicator report. The reports are then reviewed by instructors and academic leadership to determine necessary changes to the curriculum, learning activities, and planned outcomes.  The assessment plan allows faculty to analyze assessment data and make program improvements for each learning outcome. Regular meetings are held among faculty and academic leadership to determine any needed changes in curriculum, learning activities, or planned outcomes. The results of the assessment process and the faculty and academic leadership recommendations for changes are reported to the college council and curriculum committee.  Student learning is monitored twice a year to determine if changes in curriculum, teaching, or operational modifications are needed. The learning assessment process is linked to the annual Academic Program Action Plan to provide an opportunity to develop a meaningful dialogue about student learning and program relevance and cohesion with the institution’s strategic plan and budget process.  The CS department monitors the MDS program quality and improvement. Every academic year the committee prepares a detailed assessment and improvement plan based on learning outcomes and related KPIs and put the plan for the next academic year. The MDS assessment plans and reports can be accessed from [here](https://seuedu-my.sharepoint.com/:f:/g/personal/cci_cs_seu_edu_sa/EpkIT8hEKY9Nnzyh85W0oSoBTl3XBTgo057QGTGqSSAolA?e=tpDeXV).  Periodic Review of the MDS program and its courses  The periodic review of the MDS program and its courses is a continuous process through which the program and the 12 courses are reviewed each semester. At the end of each semester, the course reports are completed and submitted at the beginning of the next semester. In addition, the annual program report is prepared at the end of the academic year, which includes the results of student and faculty, and other stakeholders’ surveys. The completed course reports are reviewed and analyzed by the course coordinators and department chairman to make necessary improvements.  As mentioned above, at the level of the MDS program, the process of the course and program monitoring is a continuous process, which takes place every semester. In addition to the annual course reviews procedure conducted CSUG on Course Design Document (CDD), an example can be found [here](https://seuedu-my.sharepoint.com/:b:/g/personal/a_alhrgan_seu_edu_sa/EZGujnWuF0JIrRVFNiXWbd0BaKS4OXqlpZTiXKptVg9v8g?e=PyNRYr) . These course reports are used as key references for making decisions to improve the program. The periodic review is used to conduct periodic self-studies of the program, which contributes to the process of reviewing developments and changes in the program during the previous period. The course coordinators, together with the department chairman, who are responsible for following up the development of the MDS program and its courses must verify the following:   * The course specifications are compatible with the program specification. * The used teach methods and strategies are suitable and efficient to measure the CLOs. * The courses are periodically updated.   Figure 3 illustrates the improvement workflow for the MDS program and its course reports, which is a cycle of gathering evidence such as PLOs, statistics, KPIs, surveys’ results, reviewing the reports of the courses and program, analyzing the evidence considering the issues and concerns, and finally evaluating the reports and results related to the program performance. This process is conducted to assist in defining the necessary improvements to the courses and program.  Collect course reports and evidence (PLOs, KPIs, surveys)  Analyze the reports and evidence  Improve the program and courses  **Figure 1: Improvement Cycle of the MDS program.** |

**3. Procedures to Monitor Quality of Courses Taught by other Departments:**

|  |
| --- |
| NA |

**4. Procedures Used to Ensure the Consistency between within the main campus:** (including male and female sections)**.**

|  |
| --- |
| The MDS program, as all other programs at SEU, adopts standardized teaching and assessment ways for all students in all sections. This means that all students study the same course contents, submit the same assignments, and subject to the same assessment method. |

**5. Assessment Plan for Program Learning Outcomes (PLOs):**

|  |
| --- |
| * The Quality Assurance Committee is the responsible for monitoring program quality and improvement. Every academic year the committee prepares a detailed assessment and improvement plan (usually based on learning outcomes and related indicators). The prepared plan states, among other things, the assessment process, the tools used and how improvements are conducted and documented. * A major component of the assessment plan is the creation of faculty course groups. The course groups are responsible for evaluating the quality of course delivery for courses in their groups and suggesting improvements in their areas based on process indicators. * Students’ evaluation and their grades are also considered. |

**6. Program Evaluation Matrix:**

| **Evaluation**  **Areas/Aspects** | **Evaluation**  **Sources/References** | **Evaluation Methods** | **Evaluation Time** |
| --- | --- | --- | --- |
| Effectiveness of Teaching | Student, Graduates, Alumni, Faculty, Program Leaders | Surveys | End of semesters |
| Learning resources | Student, Graduates, Alumni, Faculty, Program Leaders | Surveys | Throughout the academic year |
| Assessments | Student, Graduates, Alumni, Faculty, Program Leaders | Surveys | End of 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.)

**7. Program KPIs:\***

The period to achieve the target (Two) year(s).

| **No.** | **KPIs Code** | **KPIs** | **Targeted Level** | **Measurement Methods** | **Measurement Time** |
| --- | --- | --- | --- | --- | --- |
| **1** | KPI-PG-1 | Students' Evaluation of quality of learning experience in the program | 4.0 | Survey | By the end of final academic year |
| **2** | KPI-PG-2 | Students' evaluation of the quality of the courses | 4.5 | Survey | By the end of each semester |
| **3** | KPI-PG-3 | Students’ evaluation of the quality of academic supervision | 5 | Statistical data | By the end of final academic year |
| **4** | KPI-PG-4 | Average time for students’ graduation | 4 | Statistical data | By the start of second academic year |
| **5** | KPI-PG-5 | Rate of students dropping out of the program | 6% | Statistical data | By the end of professional / national examinations |
| **6** | KPI-PG-6 | Employers’ evaluation of the program graduates’ competency | 4 | Survey | After one year of employment |
| **7** | KPI-PG-7 | Students’ satisfaction with services provided | 3 | Survey | By the end of the academic year |
| **8** | KPI-PG-8 | Ratio of students to faculty members | Less than 25 for male and female | Statistical data | By the start of each semester |
| **9** | KPI-PG-9 | Percentage of publications of faculty members | 90% | Statistical data | By the end of the academic year |
| **10** | KPI-PG-10 | Rate of published research per faculty member | 4:1 | Statistical data | By the end of the academic year |
| **11** | KPI-PG-11 | Citations rate in refereed journals per faculty member | 12:1 | Statistical data | By the end of the academic year |
| **12** | KPI-PG-12 | Percentage of students' publication | Journals: 5%  Conf.: 5% | Statistical data | By the end of the academic year |
| **13** | KPI-PG-13 | Number of patents, innovative products, and awards of excellence | Patents: 5  Awards: 5 | Statistical data | By the end of the academic year |

\* including KPIs required by NCAAA

# **H. Specification Approval Data:**

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| **Council / Committee** | **CCI Quality and Academic Accreditation Committee** |
| **Reference No.** | **01/2024** |
| **Date** | **01/09/2024** |