



Annual Program Report

Program Name:	Computer Science
Qualification Level:	Bachelor's degree
Department:	Department of Computer Science
College:	College of Computer Science and Information Systems
Institution:	Najran University
Academic Year:	2019/2020 (1440/1441 H)
Main Location:	CCSIS, Najran University
Branches offering the Program:	<ul style="list-style-type: none"> • Male Campus • Female Campus

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A. Implementation of Previous Action Plan

Considering the recommendations of previous year annual report, list the planned actions and their status.

Planned Actions	Responsibility of Action	Planned Completion Date	Level of Completion		If Not Completed	
			Completed	Not Completed	Reasons	Proposed Actions
1. Improve the level of computer application skills of our students by workshops supported by student activity unit	HoD	Before the end of the academic semester			Suspension of on campus activities due to coronavirus pandemic	Requesting the student activity unit to arrange online workshop and training
2. Improve the level of English language proficiency of our students by workshops supported by student activity unit	HoD	Before the end of the academic semester			Suspension of on campus activities due to coronavirus pandemic	Requesting the student activity unit to arrange online English courses
3. Urge students to see their academic advisors regularly	Coordinator and all faculty of the program	At the beginning of the academic semester	√			
4. Students should be given an orientation to introduce them to the department services which will support their educational and personal goals and facilitate initial academic advisement, course selection, and registration.	HoD, Quality unit, Academic advising unit	At the beginning of the academic semester	√			
5. Provide the necessary facilities such as cafeteria, housing, gym, college library for all students	HoD	Before the end of the academic semester	√			
6. Remind students of the importance of graduating on time	Academic advisor	During the semester	√			
7. Timely submission, of Course, Reports so that they can be evaluated and discussed in the department council	Faculty	End of the semester	√			

8. Overall course reports to be discussed in the department council meeting for actions/implementation of small changes to be implemented at the start of the semester.	HoD, Quality unit	End of semester	√			
9. Maintenance of projectors in the classroom	HoD	Before the beginning of the academic semester	√			
10. Support and encourage the staff members by offers software and hardware that they need to complete their scientific researches and then introduced them as workshops.	HoD	Before the end of the academic semester	Partially		Suspension of on campus activities due to coronavirus pandemic	Coordinating with the research unit to support research activities of faculty
11. Specify a budget for seminars and workshops which is targeted the faculty members.	HoD	Before the end of the academic semester	Partially		Suspension of on campus activities due to coronavirus pandemic	Requesting seminars and training unit to arrange online seminar and workshop
12. The rate of participation/ distributing the survey/questionnaire and collecting the responses from the stakeholders should be between 90%- 100%	Quality unit	Before the end of the academic semester	√			
13. Photocopy machine, ink cartridge of printers, papers, pens and markers are to be available and must be in operational condition when required	HoD	Before the end of the academic semester	√			

B. Program Statistics

1. Students Statistics (in the year concerned)

No.	Item	Results
1	Number of students who started the program	78
2	Number of students who graduated	29
3	Number of students who completed major tracks within the program (if applicable)	
	a.	
	B	
	c.	

4	a. Number of students who completed the program in minimal time	14
5	a. Percentage of students who completed the program in minimal time (Completion rate)	48.3%
6	Number of students who completed an intermediate award specified as an early exit point (if any)	
7	Percentage of students who completed an intermediate award specified as an early exit point (if any)	
Comment on any special or unusual factors that might have affected the completion rates: From the above results, if we compare the number of students who graduated this year with students who graduated in minimal time, the percentage is 48.3%. One of the factors which lead towards the low percentage of students graduated in minimum time is due to the semester postponing of some students		

2. Cohort Analysis of Current Graduate Batch

Student Categories		Total cohort enrollment	Withdrawn	Retained till year end	Not passed	Passed	Passing rate
Years							
Three Years Ago	M	9	0	9	5	4	44.44
	F	17	0	17	2	15	88.24
	Total	26	0		6	19	73.08
Two Years Ago	M	4	1	3	0	3	100.00
	F	15	0	15	1	14	93.33
	Total	18	1	18	1	17	94.44
Last Year	M	3	0	3	0	3	100.00
	F	14	0	14	0	14	100.00
	Total	17	0	17	0	17	100.00
Current Year	M	3	0	3	0	3	100.00
	F	14	0	14	3	11	78.57
	Total	17	0	17	3	14	82.35

Comments on the results:

After tracking the cohort of current graduated in the year 1441, we found the percentage of those who succeeded in the minimal time is more than 48%, which is a low percentage, and this low percentage is coming due to postponing of semesters by some of the students. But if we compare the number of those who graduated this year, 29 students with students who graduated in the minimal time 14 students, the percentage is almost equal.

* add more rows for further years (if needed)

** attach separate cohort analysis report for each branch

3. Analysis of Program Statistics

(including strengths, areas for improvement, and priorities for improvement)

<p>Strengths :</p> <p>After tracking the cohort of current graduated in the year 1441, we found the percentage of those who succeeded in minimal time is more than 80%, which is a very reasonable rate. But if we compare the number of those who graduated this year with students who graduated in minimal time, the percentage is 48%. This low percentage is coming due to the postponing of semesters by some of the students.</p>
<p>Areas for Improvement:</p> <ul style="list-style-type: none"> - Students must regularly visit their academic advisors - Students should be aware of the required technical and soft skills regularly. - Students should be given an orientation to introduce them to the department services which will support their educational and personal goals and facilitate initial academic advisement, course selection, and registration. - Provide the necessary facilities such as cafeteria, housing, gym, library, open lab. - Remind students of the importance of graduating on time
<p>Priorities for Improvement:</p> <p>Each semester, Academic Advising contacts students who postpone semesters and urges them to continue their education</p>

C. Program Learning Outcomes Assessment

1. Program Learning Outcomes Assessment Results.

#	Program Learning Outcomes	Assessment Methods (Direct and Indirect)	Performance Target	Results
Knowledge and Understanding				
K ₁	An ability to apply knowledge of computing and mathematics appropriate to the discipline	<p>Direct Methods:</p> <p>1. Course Learning Outcomes assessment (Each Semester)</p> <p>2. Formative assessment cycle for Learning Outcomes.</p>	According to PLO/SO assessment plan, K1 is not selected for assessment during the academic year 2019/2020	
K ₂	An understanding of professional, ethical, legal, security and social issues and responsibilities		According to PLO/SO assessment plan, K2 not selected for assessment during the academic year 2019/2020	
K ₃	An ability to apply mathematical foundations, algorithmic	<p>Indirect Methods:</p>	65% of the students at the	Target Achieved

	principles, and computer science theory in the modelling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices	1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester)	accomplished or above levels	
Skills				
S ₁	An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution	Direct Methods: 1. Course Learning Outcomes assessment (Each Semester) 2. Formative assessment cycle for Learning Outcomes. Indirect Methods: 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester)	65% of the students at the accomplished or above levels	Target Achieved
S ₂	An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs		According to PLO/SO assessment plan, S2 not selected for assessment during the academic year 2019/2020	
S ₃	An ability to analyze the local and global impact of computing on individuals, organizations, and society		According to PLO/SO assessment plan, S3 not selected for assessment during the academic year 2019/2020	
S ₄	An ability to use current techniques, skills, and tools necessary for computing practice.		According to PLO/SO assessment plan, S4 not selected for assessment during the academic year 2019/2020	
S ₅	An ability to apply design and development principles in the construction of software systems of varying complexity.		According to PLO/SO assessment plan, S5 not selected for assessment during the academic year 2019/2020	
Competence				
C ₁	An ability to function effectively on teams to accomplish a common goal	Direct Methods: 1. Course Learning Outcomes assessment (Each Semester) 2. Formative assessment cycle for Learning Outcomes. Indirect Methods: 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester)	65% of the students at the accomplished or above levels	Target Achieved
C ₂	An ability to communicate effectively with a range of audiences		65% of the students at the accomplished or above levels	Target Achieved
C ₃	An ability to recognize the need for and an ability to engage in continuing professional development		According to PLO/SO assessment plan, V3 not selected for assessment during the academic year 2019/2020	

Comments on the Program Learning Outcome Assessment results.

The Department of Computer Science (CS) adopted the ABET CAC's (a-k) Student Outcomes (SO) for the Computer Science program as a Program Learning Outcome (PLO). According to the assessment plan 2017-2021, following two PLOs/SOs were selected to collect data and evaluate during the first semester of 2019/2020 (1440/1441).

- **SO(b) ↔ S1:** An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution
- **SO(f) ↔ V2:** Ability to communicate effectively with a range of audiences

Moreover, following two PLOs/SOs were selected to collect data and evaluate during the second semester 2019/2020 (1440/1441).

- **SO(d) ↔ V1:** An ability to function effectively on teams to accomplish a common goal.
- **SO(j) ↔ K3:** An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modelling and design of computer-based systems in a way that demonstrates comprehension of the trade-offs involved in design choices

Program Learning Outcome Assessment results for First Semester 2019/2020 (1440/1441)

1. Student Outcome (b)

A rubric designed to assess the SO (b), the rubric mainly based on the following three performance indicators (PI);

PI b.1: *Breakdown a given problem into smaller components.*

PI b.2: *Identify tools, techniques and models to achieve the solution.*

PI b.3: *Define the requirements for a given computing problem*

Since it was required to do the summative assessment, so courses were only selected from level 8 and 9 with a strong relationship with SO (b). Two courses 491CSS-4 (Graduation Project-I) and 492CSS-4 (Graduation Project-II) were selected to assess the SO (b). Assessment is based on the four graduation project-I and four graduation project-II. The overall assessment result of SO (b) based on the data collected from both male and female campus. Assessment results show that 83.67% of students achieved the SO (b) in male campus and 89.94% students achieved on the female campus. Average achievement rate in male and female campus is 86.81% which achieved the target of 65%.

2. Student Outcome (f)

A rubric was designed to assess the SO (f), the rubric was mainly based on the following three performance indicators (PI);

- PI f.1: Prepare a scientific report.
- PI f.2: Present scientific accomplishment verbally.
- PI f.3: Utilize presentation skills and technology.

Since it was required to do the summative assessment, so courses are selected only from level 8 and 9 with a strong relationship with SO (f). Two courses 491CSS-4 (Graduation Project-I) and 492CSS-4 (Graduation Project-II) were selected to assess the SO (f). Assessment is based on the four graduation project-I and four graduation project-II. The overall assessment result of SO (f) based on the data collected from both male and female campus. Assessment results show that 82.04% of students achieved the SO (f) in male campus and 91.09% students achieved on the female campus. Average achievement rate in male and female campus is 86.56% which achieved the target of 65%.

Program Learning Outcome Assessment results for Second Semester 2019/2020
(1440/1441)

1. Student Outcome (d)

A rubric was designed to assess the SO (d), the rubric was mainly based on the following three performance indicators (PI);

- PI b.1: Share knowledge and ideas to achieve a common goal.
- PI b.2: Adhere to team responsibilities to achieve a common goal.
- PI b.3: Listen to other team members.

Since it was required to do the summative assessment, so courses are selected only from level 8 and 9 with a strong relationship with SO (f). Two courses 491CSS-4 (Graduation Project-I) and 492CSS-4 (Graduation Project-II) were selected to assess the SO (d). Assessment is based on the three-graduation project-I and two graduation project-II. Overall assessment result of SO (d) based on the data collected from both male and female campus. Assessment result shows that 82.91% of students achieved the SO (d) in male campus and 93.01% students achieved in the female campus. Average achievement rate in male and female campus is 87.96% which achieved the target of 65%.

2. Student Outcome (j)

A rubric was designed to assess the SO (j), the rubric was mainly based on the following three performance indicators (PI);

- PI j.1: Apply math foundations in the modelling and design of computer-based systems
- PI j.2: Apply algorithmic principles in the modelling and design of computer-based systems
- PI j.3: Apply computer science theory in the modelling and design of computer-based systems

Since it was required to do the summative assessment, so courses are selected only from level 8 and 9 with a strong relationship with SO (j).

Two courses 491CSS-4 (Graduation Project-I) and 492CSS-4 (Graduation Project-II) were selected to assess the SO (j). Assessment is based on the three-graduation project-I and 2 graduation project-II. Overall assessment result of SO (j) based on the data collected from both male and female campus. Assessment result shows that 90.04% of students achieved the SO (j) in male campus and 91.56% students achieved in the female campus. Average achievement rate in male and female campus is 90.03% which achieved the target of 65%.

Note: Detailed analysis of PLOs/SOs is given below in section 2 (analysis of program learning outcome assessment)

* Include the results of measured learning outcomes during the year of the report according to the program plan for measuring learning outcomes

** Attach a separate report on the program learning outcomes assessment results for male and female sections and for each branch (if any)

2. Analysis of Program Learning Outcomes Assessment

(including strengths, Areas for Improvement and priorities for improvement)

Program learning outcomes (PLOs) or student outcomes (SOs) can be assessed by using both direct and indirect assessment methods. In this report, we presented PLOs/SOs assessment data from the following direct assessment method:

- Assessment of student learning outcomes using performance indicators (PIs) and Rubrics

Assessment of student learning outcomes using performance indicators (PIs), Embedded Questions and Rubrics

This report is an overall assessment method to evaluate the attainment of SOs. A set of Performance Indicators were developed for each one of the SO. PIs are then aligned to the curriculum to facilitate the collection of data. Data is then evaluated by using a set of rubrics. In this method, we collect data and evaluate each SO once in a complete assessment cycle.

The first cycle of PLOs or SOs assessment through PIs, embedded questions and rubrics started in 2012/2013 and finished in 2015/2016. Hence, the College of CSIS has planned a new cycle for the academic years 2017-2021 to assess the PLOs/ SOs. A new assessment plan is described below:

1. Assessment Types

- Direct assessment: It will be achieved through performance indicators (PIs) and by using course learning outcome (CLOs) for all CS SOs. Direct assessment methods are used for the direct examination or observation of student knowledge, skills and/or behaviours. e.g. Exams, Presentation, etc.
- Indirect assessment: It will be done through indirect methods, e.g. exit surveys, current student survey and meeting and survey with program advisory committee.

2. Assessment Methods

The formative and summative assessment methods which will be used in the assessment plan for the year 2017 – 2021 are:

- **Formative Assessment.**

1. Formative assessments are ongoing assessments, reviews, and observations in a classroom and or within an academic year or predetermined time.
2. We should use formative assessment to improve instructional methods and student feedback throughout the teaching and learning process.
3. The goal of formative assessment is to monitor student learning to provide ongoing feedback that can be used by instructors to improve their teaching and by students to enhance their learning.
4. Examples of formative assessment are quizzes, assignments, midterms, etc. It will be used in level 3 to 6.

- **Summative Assessment.**

1. Summative assessments are typically used to evaluate the effectiveness of instructional programs and services at the end of an academic year or at a predetermined time.
2. The goal of summative assessments is to make a judgment of student competency after an instructional phase is complete.
3. The goal of summative assessment is to evaluate student learning at the end of an instructional unit by comparing it against some standard or benchmark.
4. Example of summative assessment is final exams, nationwide Tests, and it will be done from levels 7, 8 and 9.

As it is mentioned above that according to the assessment plan 2017-2021, following two PLOs/SOs were selected to collect data and evaluate during the First semester 2019/2020 (1440/1441).

1. **SO(b) ↔ S1:** An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution
2. **SO(f) ↔ V2:** Ability to communicate effectively with a range of audiences

Moreover, following two PLOs/SOs were selected to collect data and evaluate during the Second Semester 2019/2020 (1440/1441).

3. **SO(d) ↔ V1:** An ability to function effectively on teams to accomplish a common goal.
4. **SO(j):↔ K3:** An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modelling and design of computer-based systems in a way that demonstrates comprehension of the trade-offs involved in design choice

College's development and quality unit (DQU) formed following five groups which are responsible for collecting the data and evaluating the PLOs/SOs according to the assessment plan.

Group No.	Coordinator	Member	Student Outcome
Group 1	Dr. Fekri	Ms. Saira Ms. Eman Dr. Khairi Mr. Mohammed Basit Mr. Omar Mr. Mazen Gazzan Mr. Khalid Makdi	a i
Group 2	Dr. Shargabi	Ms. Nazeema Ms. Enam Dr. Muniba Mr. Selim Reza Mr. Muhammad Akram Mr. Adlan Balola Mr. Abdullah Al Qahtani	b f
Group 3	Dr. Asadullah	Ms. Rania Ms. Dalal Dr. Addin Osman Mr. Shah Masud Mr. Naif Mr. Saltan Al Azmei	d j
Group 4	Dr. Ghassan	Dr. Khairan Dr. Adel Rajab Dr. Samar Alqhtani Ms. Gulshan Ms. Suad Mr. Golam faruque Mr. Yahya Mr. Abdullah Abosaq Mr. Ali Zamnan	c e
Group 5	Dr. Abdurrahman	Mr. Muhammad Akram Ms. Nyla Khadem Ms. Sumaiya Dr. Anwar Dr. Aisha Dr. Mohammed Hamdi Mr. Haji Moinuddin Mr. Ahmad Al Musabi	g h k

***Program Learning Outcome Analysis for First Semester 2019/2020
(1440/1441).***

SO (b): An ability to analyze a problem, identify and define the computing requirements appropriate to its solution

INTRODUCTION

According to the student outcome (SO) assessment plan 2017-2021, student outcome SO (b) was selected for assessment. A rubric was designed to assess the SO (b), the rubric was mainly based on the following three performance indicators (PI);

PI b.1: Breakdown a given problem into smaller components.

PI b.2: Identify tools, techniques and models to achieve the solution.

PI b.3: Define the requirements for a given computing problem

These three PIs were measured against four performance level, i.e. “exemplary”, “accomplished”, “developing” and “beginning”. More explanation on measurement is given in section 2.

Since it was required to do the summative assessment, so courses are selected only from level 8 and 9 with a strong relationship with SO (b). Data was collected for Computer Science (CS) program to evaluate the SO (b) in the first semester 2019/2020 and evaluation results are presented in this report.

GENERAL RUBRIC TO ASSESS THE STUDENT OUTCOME (B)

Student Outcome (b): An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution

Semester/Year Data collected: First Semester, 2019/2020

PI No	Performance Indicators	Exemplary	Accomplished	Developing	Beginning	Marks (in %age)
PI b.1	Breakdown a given problem into smaller components	All components in a given problem have been identified correctly.	Most of the components in a given problem have been identified correctly.	Some of the components in a given problem have been identified correctly.	Very few or none of the components in a given problem have been identified correctly.	
PI b.2	Identify tools, techniques and models	All the tools, techniques and models are identified correctly.	Most of the tools, techniques and models are	Some of the tools, techniques and models are	Very few or none of the tools, techniques and models	

	to achieve the solution.		identified correctly.	identified correctly.	are identified correctly.	
PI b.3	Define the requirements for a given computing problem.	All of the requirements are defined correctly.	Most of the requirements are defined correctly.	Some of the requirements are defined correctly.	Very few or none of the requirements are defined correctly.	

*All = 90% and above [Exemplary]

*Most of the = 75% to 89% [Accomplished]

*Some of the = 50% to 74% [Developing]

*Very few = less than 50% [Beginning]

*** A Performance Indicator is said to be achieved if 65% of the students at the developing or above levels.

STUDENT OUTCOME ASSESSMENT PLAN

Student outcome (b): An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution

Semester/Year Data collected: First Semester, 2019-2020

Assessment Coordinator (Collection Agent): Dr. Muhammad Al-Shargabi & Mr. Muhammad Akram

Program: Computer Science

Table 1 shows the assessment plan of SO (b) for the computer science program. Assessment plan includes the strategies used to assess the SO (b), assessment method, source of assessment and target to achieve the SO (b). Because we have to do the summative assessment, so courses are selected only from level 8 and 9 with the strong relationship of course learning outcome with SO (b). Moreover, curriculum mapping is also considered while selecting CS courses as a source of assessment.

Table 1: Student Outcome (b) assessment plan for the computer science program

PI No	Performance Indicators	Strategies	Assessment Method(s)	Source of Assessment	Target for Performance	Evaluation of Results
PI b.1	Breakdown a given problem into smaller components	111CSS-4, 113CSS-4, 212CSS-3, 227CSS-3, 330CSS-3, 342CSS-3, 345CSS-3, 380CSS-3, 456CSS-3, 474CSS-3, 491CSS-4, 492CSS-3	Written project report and oral presentation with scoring rubrics	491CSS-4, 492CSS-4	65% of the students at the accomplished or above levels	SO Assessment Group
PI b.2	Identify tools, techniques and models	113CSS-3, 212CSS-3, 222CSS-3, 227CSS-3, 235CSS-3, 329CSS-3, 330CSS-3, 340CSS-3,	Written project report and oral	491CSS-4, 492CSS-4	65% of the students at the accomplish	SO Assessment Group

	to achieve the solution.	342CSS-3, 345CSS-3, 380CSS-3, 429CSS-3, 456CSS-3, 457CSS-3, 474CSS-3, 491CSS-4, 492CSS-4	presentation with scoring rubrics		ed or above levels	
PI b.3	Define the requirements for a given computing problem	328CSS-3, 330CSS-3, 340CSS-3, 342CSS-3, 380CSS-3, 429CSS-3, 474CSS-3, 491CSS-4, 492CSS-4	Written project report and oral exam.	491CSS-4, 492CSS-4	65% of the students at the accomplished or above levels	SO Assessment Group

SO (B) ASSESSMENT RESULTS

The collected data is measured using the rubric as follows:

1. The project examiner and project supervisor of 491CSS-4 and 492CSS-4 were asked to fill out the relevant criteria of the rubrics and return the evaluation results to the SO assessment group.
2. SO assessment group reviewed the evaluation results and prepared the assessment report.
3. Since there is more than one source of data, the SO Assessment group must aggregate the evaluation results.

Overall SO (b) Assessment in Male and Female Campus

Two courses 491CSS-4 (Graduation Project-I) and 492CSS-4 (Graduation Project-II) were selected to assess the SO (b). Assessment is based on the four graduation project-I and four graduation project-II. Table 2 shows the overall assessment result of SO (b) based on the data collected from both male and female campus. Assessment result shows that 83.67% of students achieved the SO (b) in male campus and 89.94% students achieved in the female campus. Average achievement rate in male and female campus is 86.81% which achieved the target of 65%.

Table 2: SO (b) achievement for computer science courses in male and female campus

Campus	SO (b) achievement
Male Campus	83.67%
Female Campus	89.94%
Average	86.81%

Table 3 below shows the achievement of each performance indicator of SO (b) in male and female campus. SO (b) was divided into three performance indicators and the result shows that average achievement of PI b.1 is 86.32%, average achievement of PI b.2 is 88.05% and average achievement of PI b.3 is 86.04%. Individual assessment in male and female campus is also shown in table 3. As shown in figure 1, each performance indicator in male and female campus achieves the target benchmark.

Table 3: SO (b) achievement for computer science courses in male and female campus

CS Student Outcomes		Percentage of Performance			Source of Data	Time of Data Collection
Student outcome (b): An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution		Male Campus	Female Campus	Average		
PI b.1	Breakdown a given problem into smaller components.	84%	88.64%	86.32%	491CSS-4, 492CSS-4	First Semester 2019/2020
PI b.2	Identify tools, techniques and models to achieve the solution.	84.50%	91.60%	88.05%	491CSS-4, 492CSS-4	First Semester 2019/2020
PI b.3	Define the requirements for a given computing problem.	82.50%	89.59%	86.04%	491CSS-4, 492CSS-4	First Semester 2019/2020

*** Target for Performance is 65% of the students are at the developing or above levels

Average Achievement of Performance Indicators of SO (b) in male and female campus

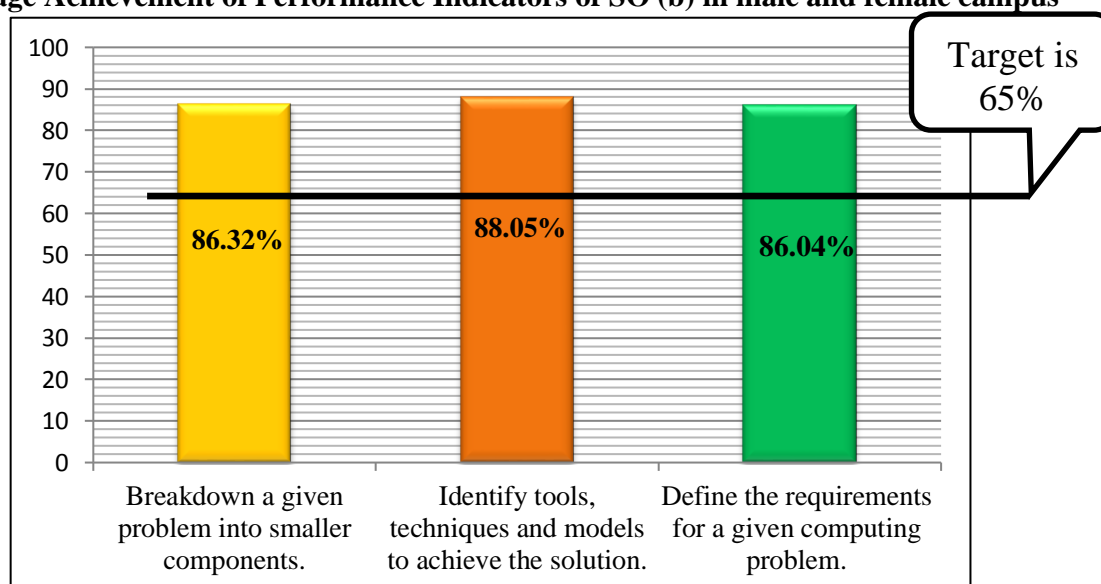


Figure 1: Average achievement of SO (b) in male and female campus

Student Outcome (b) Assessment in Male Campus

Two computer science courses, graduation project-I (491CSS-4) and graduation project-II (492CSS-4) were selected as the source of assessment in the male campus. No students group registered the graduation project-I (491CSS-4), and only groups registered graduation project-II (492CSS-4) in the female campus during the first semester 2019/2010. Average achievement of SO (b) in the male campus is 83.67%. Moreover, the achievement of each performance

indicator of SO (b) shown in figure 2. It can be seen that PI b.1, PI b.2 and PI b.3 was achieved 84%, 84.5% and 82.5% respectively in the male campus.

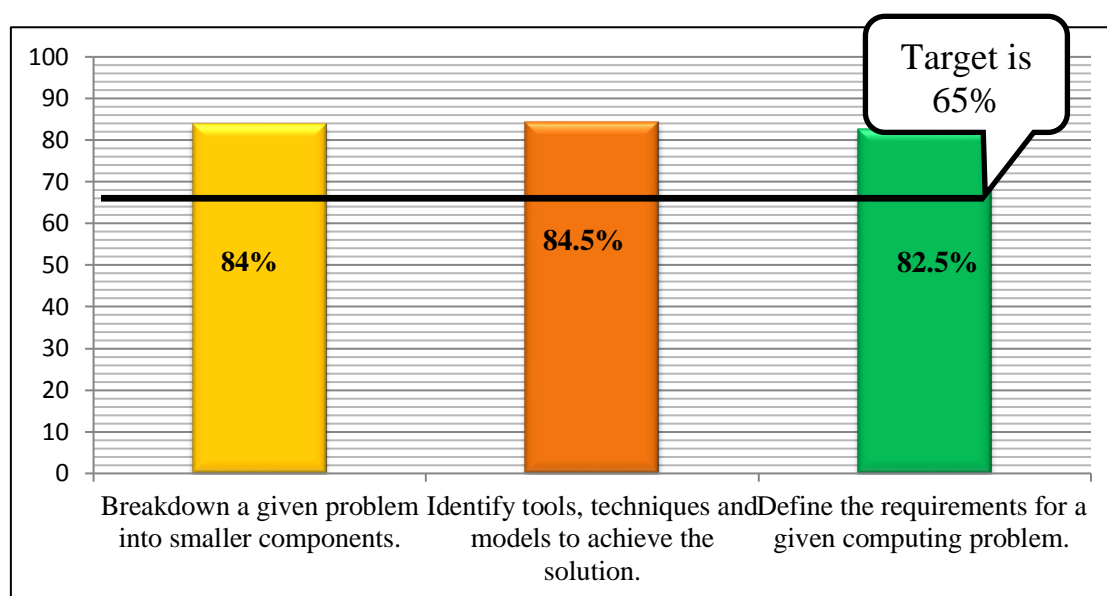


Figure 2: Achievement of SO (b) in male campus

Graduation Project-I (491CSS-4)

There was no student registered in 491CSS-4 in male campus in first semester 2019/2020.

Graduation Project-II (492CSS-4)

Only one group consists of two students registered the graduation project-II (492CSS-4) in male campus during first semester 2019/2010. As it is mentioned earlier that a rubric was prepared to assess the achievement of SO (b), and it consists of three performance indicators (PI). The rubric was given to the project supervisor and project examiners to evaluate each student in the group based on the criteria and liker scales given in the rubric. Table 4 given below shows the evaluation results submitted by the project supervisor and examiners by following the rubric. It can be seen that each performance indicators achieved the target of 65%.

Table 4: SO (b) achievement results received from project supervisor and project examiners

Supervisor and Examiners	436100833			436100591		
	SO (b)			SO (b)		
	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3
Mr. Adlan Balola Ali (Project Supervisor)	85%	85%	90%	90%	90%	90%
Dr. Ghassan ali	85%	85%	80%	85%	85%	80%
Mr. Abdallah abosaq	80%	82%	81%	77%	79%	79%
Dr. Turki	85%	85%	80%	85%	85%	80%

Student Outcome (b) Assessment in Female Campus

Two computer science courses, graduation project-I (491CSS-4) and graduation project-II (492CSS-4) selected as a source of assessment in the female campus. Four groups registered

the graduation project-I (491CSS-4) and three groups registered graduation project-II (492CSS-4) in the female campus during first semester 2019/2010. Average achievement of SO (b) in the female campus is 89.94%. Moreover, the achievement of each performance indicator of SO (b) is shown in figure 3. It can be seen that PI b.1, PI b.2 and PI b.3 was achieved 88.64%, 91.6% and 89.59% respectively in the female campus.

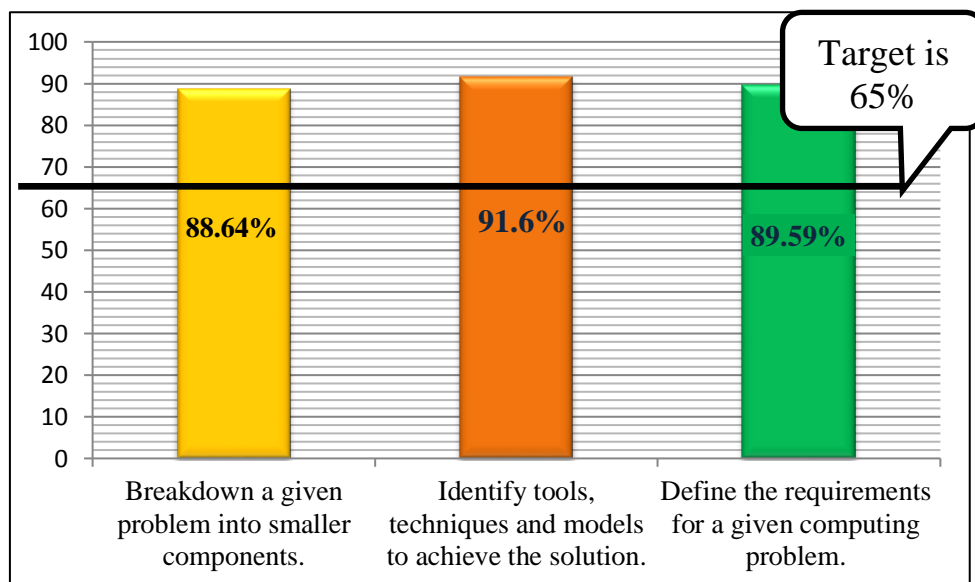


Figure 3: SO (b) achievement of SO (b) in female campus

Graduation Project-I (491CSS-4)

Four groups registered the graduation project-I (491CSS-4) in the female campus during the first semester 2019/2010 as it is mentioned earlier that a rubric was prepared, which consists of three performance indicators (PI). The rubric was given to the project supervisor and project examiners to evaluate each student in the group based on the criteria and measurement scales given in the rubric. The following section shows the group-wise data collected from the project supervisor and project examiners.

Project Title: Mobile application to search and provide private lessons and available online resources in our society.

This group was consisting of three students and table 5, shows the evaluation results submitted by the project supervisor and examiners by following the rubric. It can be seen that each performance indicators achieved the target of 65%. Moreover, two project examiners submitted the evaluation results but did not receive from one project examiner.

Table 5: SO (b) achievement results received from project supervisor and project examiners

Supervisor and Examiners	436301467			436404315			437304867		
	SO (b)			SO (b)			SO (b)		
	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3
Dr. Aisha (Project Supervisor)	97%	95%	95%	97%	95%	95%	97%	95%	95%

Dr. Adel									
Ms. A Nyla	83%	83%	83%	83%	83%	83%	83%	83%	83%
Ms. Ahood	95%	94%	95%	95%	94%	95%	94%	94%	94%

Project Title: Education game for NU Students

This group was consisting of two students and table 6, shows the evaluation results submitted by the project supervisor and examiners by following the rubric. It can be seen that each performance indicators achieved the target of 65%. Moreover, two project examiners submitted the evaluation results but did not receive from one project examiner.

Table 6: SO (b) achievement results received from project supervisor and project examiners

Supervisor and Examiners	436303402			437304360		
	SO (b)			SO (b)		
	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3
Ms. Raniah (Project Supervisor)	95%	95%	92%	92%	91%	90%
Dr.Hani						
Ms. Asma	95%	90%	80%	95%	90%	80%
Ms. Nyla	90%	90%	90%	90%	90%	90%

Project Title: Personal Library System an Android Application

This group was consisting of three students and table 7, shows the evaluation results submitted by the project examiners by following the rubric. It can be seen that each performance indicators achieved the target of 65%. Moreover, all three project examiners submitted the evaluation results but did not received the evaluation results from project supervisor.

Table 7: SO (b) achievement results received from project supervisor and project examiners

Supervisor and Examiners	436300719			436300772			436405177		
	SO (b)			SO (b)			SO (b)		
	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3
Dr. Khairi (Project Supervisor)									
Dr.Samar	80%	80%	80%	85%	85%	85%	90%	90%	90%
Ms. Maha	75%	90%	90%	75%	90%	90%	75%	90%	90%
Ms. Raniah	89%	90%	91%	93%	92%	92%	95%	93%	93%

Project Title: Najran University Event Management Systems

This group was consisting of three students and table 8, shows the evaluation results submitted by the project examiners by following the rubric. It can be seen that each performance indicators achieved the target of 65%. Moreover, all three project examiners submitted the evaluation results but did not receive the evaluation results from the project supervisor.

Table 8: SO (b) achievement results received from project supervisor and project examiners

Supervisor and Examiners	436300796			436301399			436301416		
	SO (b)			SO (b)			SO (b)		
	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3
Dr. Khairan Rajab (Project Supervisor)									
Dr. Anwar	90%	91%	90%	90%	91%	90%	90%	91%	90%
Ms. Zahra	95%	98%	96%	95%	98%	96%	95%	98%	96%
Dr. Hanan	94%	94%	90%	94%	94%	90%	94%	94%	90%

Graduation Project-II (492CSS-4)

Three groups registered the graduation project-II (492CSS-4) in the female campus during the first semester 2019/2010. As it is mentioned earlier that a rubric was prepared which consists of three performance indicators (PI). The rubric was given to the project supervisor and project examiners to evaluate each student in the group based on the criteria and measurement scales given in the rubric. The following section shows the group-wise data collected from the project supervisor and project examiners.

Project Title: Android Auction Application

This group was consisting of two students and table 9 shows the evaluation results submitted by the project supervisor and examiners by following the rubric. It can be seen that each performance indicators achieved the target of 65%. Moreover, two project examiners submitted the evaluation results but evaluation results did not receive from one project examiner.

Table 9: SO (b) achievement results received from project supervisor and project examiners

Supervisor and Examiners	435301647			435302498		
	SO (b)			SO (b)		
	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3
Ms. Eman (Project Supervisor)	85%	95%	85%	85%	85%	85%
Dr. Homdi						
Ms. Asma	50%	90%	75%	50%	90%	75%
Ms. Saira	90%	90%	83%	90%	90%	83%

Project Title: Android application to find food sharing revolution in Najran

This group was consisting of two students and table 10 shows the evaluation results submitted by the project supervisor and examiners by following the rubric. It can be seen that each performance indicators achieved the target of 65%. Moreover, two project examiners submitted the evaluation results but evaluation results did not receive from one project examiner.

Table 10: SO (b) achievement results received from project supervisor and project examiners

Supervisor and Examiners	435405353			436300668			436405176		
	SO (b)			SO (b)			SO (b)		
	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3
Ms. Nourah (Project Supervisor)	85%	90%	100%	95%	100%	100%	95%	100%	100%
Dr. Fikry	92%	90%	93%	90%	91%	92%	89%	88%	90%
Ms. Somaya									
Ms. Ahood	90%	89%	89%	93%	92%	92%	92%	93%	92%

Project Title: Restaurant rating Application

This group was consisting of two students and table 10 shows the evaluation results submitted by the project supervisor and examiners by following the rubric. It can be seen that each performance indicators achieved the target of 65%. Moreover, two project examiners submitted the evaluation results but evaluation results did not receive from one project examiner.

Table 10: SO (b) achievement results received from project supervisor and project examiners

Supervisor and Examiners	436300767			436300928			436301174		
	SO (b)			SO (b)			SO (b)		
	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3
Ms. Soad (Project Supervisor)	95%	95%	95%	95%	95%	95%	95%	95%	95%
Dr. Mohammed Shargab	93%	93%	92%	93%	93%	92%	93%	93%	92%
Ms. Eman	93%	95%	93%	88%	90%	93%	90%	95%	90%
Ms. Zahra									

SO IMPROVEMENT PLAN

Figure 4, below shows the general view of SO improvement plan.

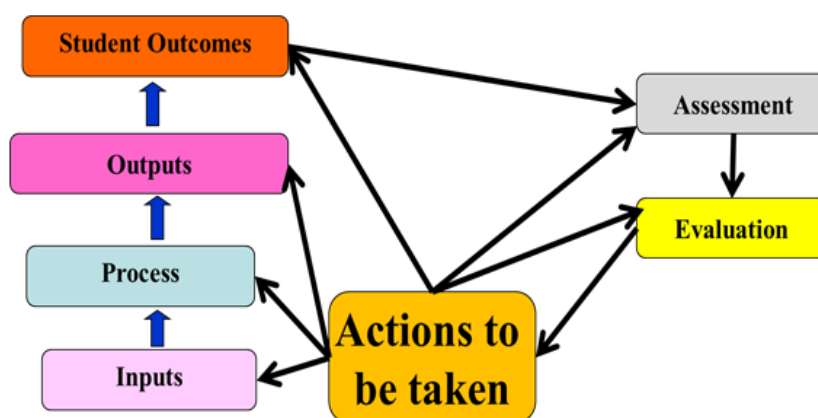


Figure 4: SO (b) improvement plan

Overall SO evaluation result shows that SO (b) achieved the benchmark of 65%. However, the results presented in the assessment report are only based on the two computer science courses. Data from other courses from higher-level can produce more authentic and reliable assessment results. So the assessment committee recommends the following actions to improve the results;

- It is required that computer science knowledge groups review the mapping of the higher-level courses and look for mapping of other courses with SO (b). More courses mapped with SO (b) will be helpful to improve the source for assessment.
- Some project supervisors and/or project examiners did not submit the evaluation results, so it is required to improve the response rate.
- Course instructor needs to explain the topics in more detail and give more practice on lectures which are related to SO (b).
- Regular meeting with theory instructor, lab instructor and course coordinator is very important to improve the achievement results.

CONCLUSION

Graduation Project-I (491CSS-4) and Graduation Project-II (492CSS-4) was selected as a source of assessment for SO (b) in first semester 2019/2020. Data were collected from a total of eight graduation projects (i.e. four graduation project-I and four graduation project-II). Overall results show that the achievement rate of SO (b) in the male campus is 83.67% as compared to 89.94% in the female campus. It shows that both campuses achieve a target of 65%. It is also proposed that need to review the mapping of level 8 and level 9 courses with SO (b). Data from more courses will be helpful to produce the assessment report from a different source of assessment.

SO (f): Ability to communicate effectively with a range of audiences

INTRODUCTION

According to the student outcome (SO) assessment plan 2017-2021, student outcome SO (f) was selected for assessment. A rubric was designed to assess the SO (f), the rubric was mainly based on the following three performance indicators (PI);

PI f.1: Prepare a scientific report.

PI f.2: Present scientific accomplishment verbally.

PI f.3: Utilize presentation skills and technology.

These three PIs were measured against four performance level i.e. “exemplary”, “accomplished”, “developing” and “beginning”. More explanation on measurement is given in section 2.

Since it was required to do the summative assessment, so courses are selected only from level 8 and 9 with a strong relationship with SO (f). Data was collected for Computer Science (CS)

program to evaluate the SO (f) in the first semester 2019/2020 and evaluation results are presented in this report.

GENERAL RUBRIC TO ASSESS THE STUDENT OUTCOME (B)

Student Outcome (f): Ability to Communicate Effectively with a Range of Audiences

Semester/Year Data collected: First Semester, 2019/2020

PI No	Performance Indicators	Exemplary	Accomplished	Developing	Beginning	Marks (in %age)
PI f.1	Prepare a scientific report	The introduction, conclusion, spelling, references and analysis design /implementation are all well defined	One of the following: introduction, conclusion, spelling, references and analysis design /implementation is not well defined	Two or more of the following: introduction, conclusion, spelling, references and analysis design /implementation are not well defined	The introduction, conclusion, spelling, references and analysis design /implementation are poorly defined	
PI f.2	Present scientific accomplishment verbally	Present appropriate information (Problem statement, objective, background materials and design/implementation), in very clear way within the expected time, and answer all questions in very clear way.	Present appropriate information (Problem statement, objective, background materials and design/implementation), and answer all questions in clear way	Present appropriate information (Problem statement, objective, background materials and design/implementation), in clear way and not answer all questions, in clear way.	Present appropriate information (Problem statement, objective, background materials and design/implementation), and answer all questions, in a way not clear.	
PI f.3	Utilize presentation skills and technology	The Slides are very well designed	The Slides are well designed	The Slides' design is moderate	The Slides' design is poor	

*All = 90% and above [Exemplary]

*Most of the = 75% to 89% [Accomplished]

*Some of the = 50% to 74% [Developing]

*Very few = less than 50% [Beginning]

*** A Performance Indicator is said to be achieved if 65% of the students at the developing or above levels.

STUDENT OUTCOME ASSESSMENT PLAN

Student outcome (f): Ability to Communicate Effectively with a Range of Audiences

Semester/Year Data collected: First Semester, 2019-2020

Assessment Coordinator (Collection Agent): Dr. Muhammad Al-Shargabi & Mr. Muhammad Akram

Program: Computer Science

Table 1, shows the assessment plan of SO (f) for the computer science program. Assessment plan includes the strategies used to assess the SO (f), assessment method, source of assessment and target to achieve the SO (f). Because we have to do the summative assessment, so courses are selected only from level 8 and 9 with the strong relationship of course learning outcome with SO (f). Moreover, curriculum mapping is also considered during selecting the CS courses as a source of assessment.

Table 1: Student Outcome (f) assessment plan for the computer science program

PI No	Performance Indicators	Strategies	Assessment Method(s)	Source of Assessment	Target for Performance	Evaluation of Results
PI f.1	Prepare a scientific report	111CSS-4, 113CSS-4, 212CSS-3, 227CSS-3, 330CSS-3, 342CSS-3, 345CSS-3, 380CSS-3, 456CSS-3, 474CSS-3, 491CSS-4, 492CSS-3	Written project report and oral presentation with scoring rubrics	491CSS-4, 492CSS-4	65% of the students at the accomplished or above levels	SO Assessment Group
PI f.2	Present scientific accomplishment verbally	113CSS-3, 212CSS-3, 222CSS-3, 227CSS-3, 235CSS-3, 329CSS-3, 330CSS-3, 340CSS-3, 342CSS-3, 345CSS-3, 380CSS-3, 429CSS-3, 456CSS-3, 457CSS-3, 474CSS-3, 491CSS-4, 492CSS-4	Written project report and oral presentation with scoring rubrics	491CSS-4, 492CSS-4	65% of the students at the accomplished or above levels	SO Assessment Group
PI f.3	Utilize presentation skills and technology	328CSS-3, 330CSS-3, 340CSS-3, 342CSS-3, 380CSS-3, 429CSS-3, 474CSS-3, 491CSS-4, 492CSS-4	Written project report and oral exam.	491CSS-4, 492CSS-4	65% of the students at the accomplished or above levels	SO Assessment Group

SO (f) ASSESSMENT RESULTS

The collected data is measured using the rubric as follows:

1. The project examiner and project supervisor of 491CSS-4 and 492CSS-4 were asked to fill out the relevant criteria of the rubrics and return the evaluation results to the SO assessment group.
2. SO assessment group reviews the evaluation results and prepared the assessment report.
3. Since there is more than one source of data, the SO Assessment group must aggregate the evaluation results.

Overall SO (f) Assessment in Male and Female Campus

Two courses 491CSS-4 (Graduation Project-I) and 492CSS-4 (Graduation Project-II) were selected to assess the SO (f). Assessment is based on the four graduation project-I and four graduation project-II. Table 2 shows the overall assessment result of SO (f) based on the data collected from both male and female campuses. The assessment result shows that 82.04% of students achieved the SO (f) in male campus and 91.09% of students achieved in the female campus. Average achievement rate in male and female campus is 86.56% which achieved the target of 65%.

Table 2: SO (f) achievement for computer science courses in male and female campus

Campus	SO (f) achievement
Male Campus	82.04%
Female Campus	91.09%
Average	86.56%

Table 3 below shows the achievement of each performance indicator of SO (b) in male and female campus. SO (f) was divided into three performance indicators and result shows that average achievement of PI f.1 is 88.18%, average achievement of PI f.2 is 86.55% and average achievement of PI f.3 is 84.98%. Individual assessment in male and female campus is also shown in table 3. As shown in figure 1, each performance indicator in male and female campus achieves the target benchmark.

Table 3: SO (f) achievement for computer science courses in male and female campus

CS Student Outcomes		Percentage of Performance			Source of Data	Time of Data Collection
Student outcome (f): Ability to Communicate effectively with a range of audiences		Male Campus	Female Campus	Average		
PI f.1	Prepare a scientific report	85.63%	90.72%	88.18%	491CSS-4, 492CSS-4	First Semester 2019/2020
PI f.2	Present scientific accomplishment verbally	82.25%	90.85%	86.55%	491CSS-4, 492CSS-4	First Semester 2019/2020
PI f.3	Utilize presentation skills and technology	78.25%	91.70%	84.98%	491CSS-4, 492CSS-4	First Semester 2019/2020

*** Target for Performance is 65% of the students are at the developing or above levels

Average Achievement of Performance Indicators of SO (f) in male and female campus

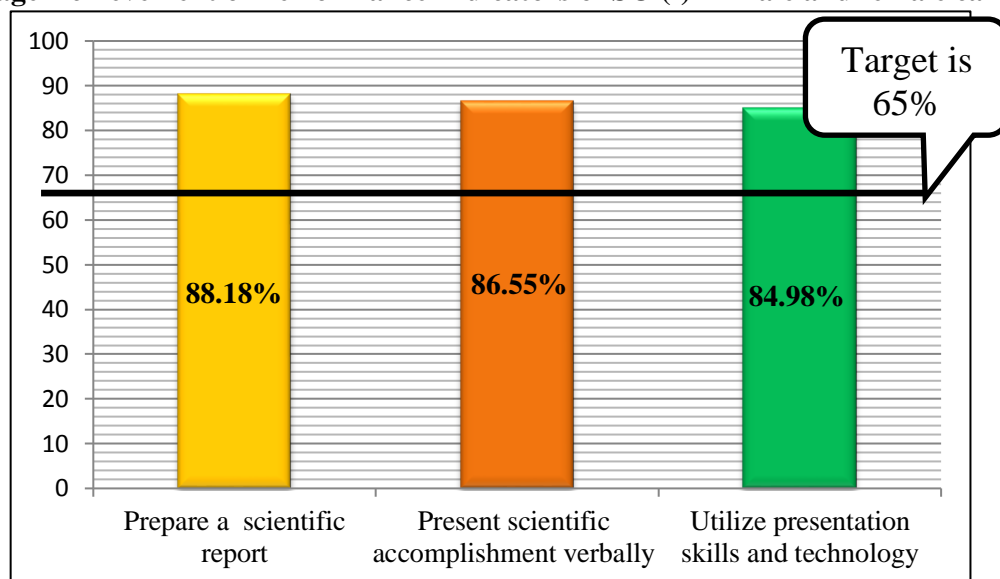


Figure 1: Average achievement of SO (f) in male and female campus

Student Outcome (f) Assessment in Male Campus

Two computer science courses, graduation project-I (491CSS-4) and graduation project-II (492CSS-4) were selected as source of assessment in male campus. No student group registered the graduation project-I (491CSS-4) and only groups registered graduation project-II (492CSS-4) in female campus during first semester 2019/2010. Average achievement of SO (f) in male campus is 82.04%. Moreover, achievement of each performance indicator of SO (f) is shown in figure 2. It can be seen that PI f.1, PI f.2 and PI f.3 was achieved 85.63%, 82.25% and 78.25% respectively in male campus.

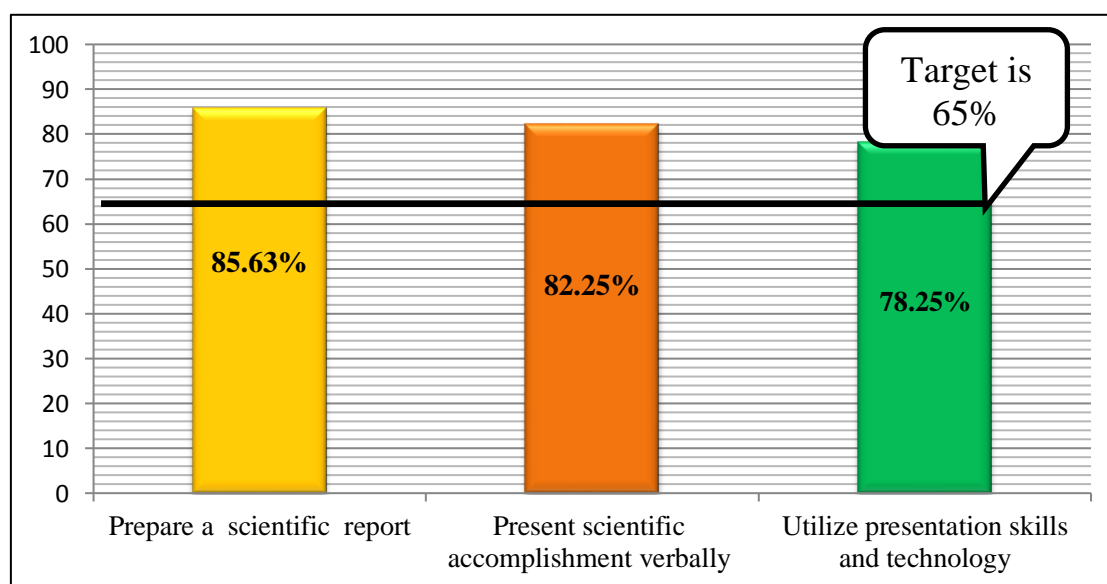


Figure 2: Achievement of SO (f) in male campus

Graduation Project-I (491CSS-4)

There was no student registered in 491CSS-4 in male campus in first semester 2019/2020.

Graduation Project-II (492CSS-4)

Only one group consists of two students registered the graduation project-II (492CSS-4) in the male campus during the first semester 2019/2010. As it is mentioned earlier that a rubric was prepared to assess the achievement of SO (f) and it consists of three performance indicators (PI). The rubric was given to the project supervisor and project examiners to evaluate each student in the group based on the criteria and liker scales given in the rubric. Table 4 given below shows the evaluation results submitted by the project supervisor and examiners by following the rubric. It can be seen that each performance indicators achieved the target of 65%.

Table 4: SO (f) achievement results received from project supervisor and project examiners

Supervisor and Examiners	436100833			436100591		
	SO (f)			SO (f)		
	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3
Mr. Adlan Balola Ali (Project Supervisor)	80%	80%	85%	90%	85%	90%
Dr. Ghassan ali	85%	80%	70%	85%	80%	70%
Mr. Abdallah abosaq	88%	87%	85%	87%	86%	86%
Dr. Turki	85%	80%	70%	85%	80%	70%

Student Outcome (f) Assessment in Female Campus

Two computer science courses, graduation project-I (491CSS-4) and graduation project-II (492CSS-4) were selected as the source of assessment in the male campus. Four groups registered the graduation project-I (491CSS-4) and three groups registered graduation project-II (492CSS-4) in the female campus during the first semester 2019/2010. Average achievement of SO (f) in the female campus is 91.09%. Moreover, the achievement of each performance indicator of SO (f) is shown in figure 3. . It can be seen that PI f.1, PI f.2 and PI f.3 was achieved 90.72%, 90.85% and 91.70% respectively in the female campus.

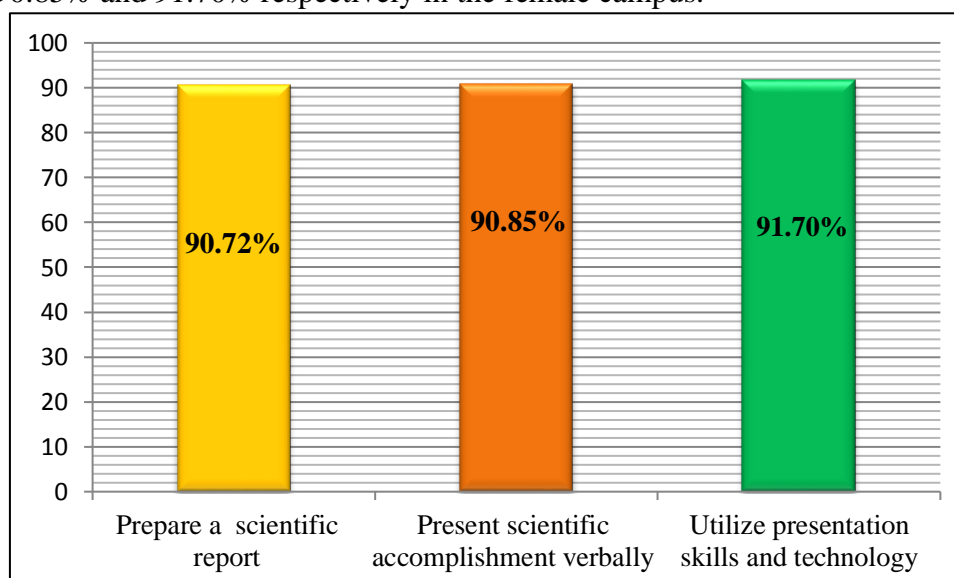


Figure 3: Achievement of SO (f) in female campus

Graduation Project-I (491CSS-4)

Four groups registered the graduation project-I (491CSS-4) in the female campus during the first semester 2019/2010. As it is mentioned earlier that a rubric was prepared to assess the SO (f) and it consists of three performance indicators (PI). The rubric was given to the project supervisor and project examiners to evaluate each student in the group based on the criteria and measurement scales given in the rubric. The following section shows the group-wise data collected from the project supervisor and project examiners.

Project Title: Mobile application to search and provide private lessons and available online resources in our society.

This group was consisting of three students and table 5, shows the evaluation results submitted by the project supervisor and examiners by following the rubric. It can be seen that each performance indicators achieved the target of 65%. Moreover, two project examiners submitted the evaluation results but did not receive from one project examiner.

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Supervisor and Examiners	436301467			436404315			437304867		
	SO(f)			SO (f)			SO (f)		
	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3
Dr. Aisha (Project Supervisor)	98%	94%	95%	98%	94%	95%	98%	95%	95%
Dr. Adel									
Ms. A Nyla	82%	88%	90%	82%	88%	90%	82%	82%	90%
Ms. Ahood				94%	94%	93%	94%	93%	93%

Project Title: Education game for NU Students

This group was consisting of two students and table 6, shows the evaluation results submitted by the project supervisor and examiners by following the rubric. It can be seen that each performance indicators achieved the target of 65%. Moreover, two project examiners submitted the evaluation results but did not receive from one project examiner.

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Supervisor and Examiners	436303402			437304360		
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	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3
Ms. Raniah (Project Supervisor)	90%	97%	97%	90%	92%	97%
Dr.Hani						
Ms. Asma	94%	98%	96%	94%	98%	96%
Ms. Nyla	87%	82%	85%	87%	88%	85%

Project Title: Personal Library System an Android Application

This group was consisting of three students and table 7, shows the evaluation results submitted by the project examiners by following the rubric. It can be seen that each performance indicators achieved the target of 65%.

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	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3
Dr. Khairi (Project Supervisor)	99%	96%	98%	99%	96%	98%	99%	96%	98%
Dr.Samar	80%	75%	80%	80%	75%	75%	80%	75%	85%
Ms. Maha	75%	75%	95%	75%	70%	95%	75%	95%	95%
Ms. Raniah	93%	87%	92%	93%	87%	92%	94%	96%	93%

Project Title: Najran University Event Management Systems

This group was consisting of three students and table 8, shows the evaluation results submitted by the project examiners by following the rubric. It can be seen that each performance indicators achieved the target of 65%. Moreover, all three project examiners submitted the evaluation results but did not receive the evaluation results from the project supervisor.

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	SO (f)			SO (f)			SO (f)		
	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3
Dr. Khairan Rajab (Project Supervisor)									
Dr. Anwar	91%	92%	90%	90%	92%	89%	90%	92%	90%
Ms. Zahra				95%	97%	94%	95%	97%	94%
Dr. Hanan	94%	94%	94%	94%	94%	94%	94%	94%	94%

Graduation Project-II (492CSS-4)

Three groups registered the graduation project-II (492CSS-4) in the female campus during the first semester 2019/2010. As it is mentioned earlier that a rubric was prepared which consists of three performance indicators (PI). The rubric was given to the project supervisor and project examiners to evaluate each student in the group based on the criteria and measurement scales given in the rubric. The following section shows the group-wise data collected from the project supervisor and project examiners.

Project Title: Android Auction Application

This group was consisting of two students and table 9 shows the evaluation results submitted by the project supervisor and examiners by following the rubric. It can be seen that each performance indicators achieved the target of 65%. Moreover, two project examiners submitted the evaluation results but evaluation results did not receive from one project examiner.

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Dr. Homdi						
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This group was consisting of two students and table 10 shows the evaluation results submitted by the project supervisor and examiners by following the rubric. It can be seen that each performance indicators achieved the target of 65%. Moreover, two project examiners submitted the evaluation results but evaluation results did not receive from one project examiner.

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Ms. Nourah (Project Supervisor)	90%	80%	85%	100%	100%	85%	90%	90%	85%
Dr. Fikry	90%	91%	93%	89%	90%	94%	90%	93%	92%
Ms. Somaya									
Ms. Ahood	93%	92%	93%	93%	92%	93%	94%	93%	94%

Project Title: Restaurant rating Application

This group was consisting of two students and table 10 shows the evaluation results submitted by the project supervisor and examiners by following the rubric. It can be seen that each performance indicators achieved the target of 65%. Moreover, two project examiners submitted the evaluation results but evaluation results did not receive from one project examiner.

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	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3	PI-1	PI-2	PI-3
Ms. Soad (Project Supervisor)	96%	97%	98%	96%	97%	98%	96%	97%	98%
Dr. Mohammed Shargabi	94%	93%	92%	94%	93%	93%	94%	92%	93%
Ms. Eman	88%	95%	95%				88%	95%	95%
Ms. Zahra									

O IMPROVEMENT PLAN

Figure 4, below shows the general view of SO improvement plan.

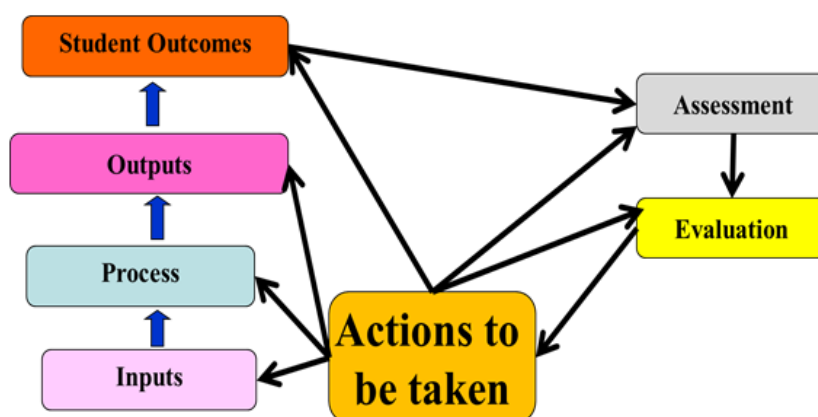


Figure 4: SO (f) improvement plan

Overall SO evaluation result shows that SO (f) achieved the benchmark of 65%. However, the results presented in the assessment report are only based on the two computer science courses. Data from other courses from a higher level can produce more authentic and reliable assessment results. So the assessment committee recommends the following actions to improve the results;

- It is required that computer science knowledge groups review the mapping of the higher-level courses (mainly level 8 and level 9) and look for mapping of other courses with SO (f). More courses mapped with SO (f) will be helpful to improve the source for assessment for summative assessment.
- Some project supervisors and/or project examiners did not submit the evaluation results, so it is required to improve the response rate.
- Course instructor needs to explain the topics in more detail and give more practice on lectures which are related to SO (f).
- Regular meeting with theory instructor, lab instructor and course coordinator is very important to improve the achievement results.

CONCLUSION

Graduation Project-I (491CSS-4) and Graduation Project-II (492CSS-4) was selected as a source of assessment for SO (f) in first semester 2019/2020. Data were collected from a total of eight graduation projects (i.e. four graduation projects-I and four graduation project-II). Overall results show that the achievement rate of SO (f) in the male campus is 82.04% as compared to 91.09% in the female campus. It shows that both campuses achieve a target of 65%. It is also proposed by the assessment committee to review the mapping of level 8 and level 9 courses with SO (f). Data from more courses will be helpful to produce the assessment report from a different source of assessment.

Program Learning Outcome Analysis for Second Semester 2019/2020 (1440/1441).

SO (d): An ability to function effectively on teams to accomplish a common goal.

INTRODUCTION

According to the student outcome (SO) assessment plan 2017-2021, student outcome SO (d) was selected for assessment. A rubric was designed to assess the SO (d), the rubric was mainly based on the following three performance indicators (PI);

PI b.1: Share knowledge and ideas to achieve a common goal.

PI b.2: Adhere to team responsibilities to achieve a common goal.

PI b.3: Listen to other team members.

These three PIs were measured against four performance level i.e. “exemplary”, “accomplished”, “developing” and “beginning”. More explanation on measurement is given in section 2.

Since it was required to do the summative assessment, so courses are selected only from level 8 and 9 with a strong relationship with SO (d). Data was collected for Computer Science (CS) program to evaluate the SO (d) in the second semester 2019/2020 and evaluation results are presented in this report.

GENERAL RUBRIC TO ASSESS THE STUDENT OUTCOME (d)

Student Outcome (d): An ability to function effectively on teams to accomplish a common goal.

Semester/Year Data collected: Second Semester, 2019/2020

PI No	Performance Indicators	Exemplary	Accomplished	Developing	Beginning	Marks in %age
PI d.1	Share knowledge and ideas to achieve a common goal.	Collects and presents to the team a great deal of relevant information; offer well developed and clearly express ideas to achieve a common goal.	Collect basic, useful information related to the project; occasionally offer useful ideas to achieve a common goal.	Collects information when prodded; tried to offer some ideas, and not clearly expressed to achieve the common goal.	Collect very few relevant information; no useful suggestions to achieve a common goal.	
PI d.2	Adhere to team responsibilities to achieve a common goal.	Performs all tasks very effectively; attends all meetings and participates enthusiastically; very reliable.	Performs all assigned tasks; attends meetings regularly and usually participates effectively; generally reliable;	Performs assigned tasks but needs many reminders; attends meetings regularly but generally does not say anything constructive; sometimes expects others to do his/her work;	Perform very few assigned tasks; often misses meetings and, when present, does not have anything constructive to say; relies on others to do the work;	
PI d.3	Listen to other team members.	Always listens to others and their ideas; helps them develop their ideas while giving them full credit; always helps the team reach a fair decision.	Usually listens to others' points of view; always uses appropriate and respectful language; tries to make a definite effort to understand others' ideas;	Sometime listen to other's point of view; does not pay much attention when others talk, and often assumes their ideas will not work; no personal attacks and put-downs.	Rarely listen to other's point of view and often argues with team mates; doesn't let anyone else talk; occasional personal attacks and put-downs.	

*All = 90% and above [Exemplary]

*Most of the = 75% to 89% [Accomplished]

*Some of the = 50% to 74% [Developing]

*Very few = less than 50% [Beginning]

*** A Performance Indicator is said to be achieved if 65% of the students at the developing or above levels.

STUDENT OUTCOME ASSESSMENT PLAN

Student outcome (d): An ability to function effectively on teams to accomplish a common goal.

Semester/Year Data collected: Second Semester, 2019-2020

Assessment Coordinator (Collection Agent): Mr. Shah Masud, Ms. Raniah, Dr. Asadullah Shaikh, Dr. Mana Al Reshan, and Dr. Magzoub Abdullah

Program: Computer Science

Table 1, shows the assessment plan of SO (d) for the computer science program. Assessment plan includes the strategies used to assess the SO (d), assessment method, source of assessment and target to achieve the SO (d). Because we have to do the summative assessment, so courses are selected only from level 8 and 9 with a strong relationship of course learning outcome with SO (d). Moreover, curriculum mapping is also considered during selecting the CS courses as a source of assessment.

Table 1: Student Outcome (d) assessment plan for computer science program

PI No	Performance Indicators	Strategies	Assessment Method(s)	Source of Assessment	Target for Performance	Evaluation of Results
PI b.1	Share knowledge and ideas to achieve a common goal.	111CSS-4, 113CSS-4, 212CSS-3, 227CSS-3, 330CSS-3, 342CSS-3, 345CSS-3, 380CSS-3, 456CSS-3, 474CSS-3, 491CSS-4, 492CSS-3	Written project report and oral presentation with scoring rubrics	491CSS-4, 492CSS-4	65% of the students at the accomplished or above levels	SO Assessment Group
PI b.2	Adhere to team responsibilities to achieve a common goal.	113CSS-3, 212CSS-3, 222CSS-3, 227CSS-3, 235CSS-3, 329CSS-3, 330CSS-3, 340CSS-3, 342CSS-3, 345CSS-3, 380CSS-3, 429CSS-3, 456CSS-3, 457CSS-3, 474CSS-3, 491CSS-4, 492CSS-4	Written project report and oral presentation with scoring rubrics	491CSS-4, 492CSS-4	65% of the students at the accomplished or above levels	SO Assessment Group
PI b.3	Listen to other team members.	328CSS-3, 330CSS-3, 340CSS-3, 342CSS-3, 380CSS-3, 429CSS-3, 474CSS-3, 491CSS-4, 492CSS-4	Written project report and oral exam.	491CSS-4, 492CSS-4	65% of the students at the accomplished or above levels	SO Assessment Group

SO (D) ASSESSMENT RESULTS

The collected data is measured using the rubric as follows:

1. The project examiner and project supervisor of 491CSS-4 and 492CSS-4 were asked to fill out the relevant criteria of the rubrics and return the evaluation results to the SO assessment group.
2. SO assessment group reviews the evaluation results and prepared the assessment report.
3. Since there is more than one source of data, the SO Assessment group must aggregate the evaluation results.

Overall, SO (d) Assessment in Male and Female Campus

Two courses 491CSS-4 (Graduation Project-I) and 492CSS-4 (Graduation Project-II) were selected to assess the SO (d). Assessment is based on the three-graduation project-I and 2 graduation project-II. Table 2 shows the overall assessment result of SO (d) based on the data collected from both male and female campus. Assessment result shows that 82.91% of students achieved the SO (d) in male campus and 93.01% students achieved in the female campus. Average achievement rate in male and female campus is 87.96% which achieved the target of 65%.

Table 2: SO (d) achievement for computer science courses in male and female campus

Campus	SO (d) achievement
Male Campus	82.91%
Female Campus	93.01%
Average	87.96%

Table 3 below shows the achievement of each performance indicator of SO (d) in the male and female campus. SO (d) was divided into three performance indicators and the result shows that average achievement of PI b.1 is 86.32%, average achievement of PI b.2 is 88.05% and average achievement of PI b.3 is 86.04%. Individual assessment in male and female campus is also shown in table 3. As shown in figure 1, each performance indicator in male and female campus achieves the target benchmark.

Table 3: SO (d) achievement for computer science courses in male and female campus

CS Student Outcomes		Percentage of Performance			Source of Data	Time of Data Collection
Student outcome (d): An ability to function effectively on teams to accomplish a common goal.		Male Campus	Female Campus	Average		
PI b.1	Share knowledge and ideas to achieve a common goal.	82.03%	92.74%	87.38%	491CSS-4, 492CSS-4	Second Semester 2019/2020
		81.09%	93.62%	87.35%	491CSS-4, 492CSS-4	Second Semester 2019/2020

PI b.2	Adhere to team responsibilities to achieve a common goal.					
PI b.3	Listen to other team members.	85.61%	92.69%	89.15%	491CSS-4, 492CSS-4	Second Semester 2019/2020

*** Target for Performance is 65% of the students are at the developing or above levels

Average of Achievement of Performance Indicators of SO (d) in male and female campus

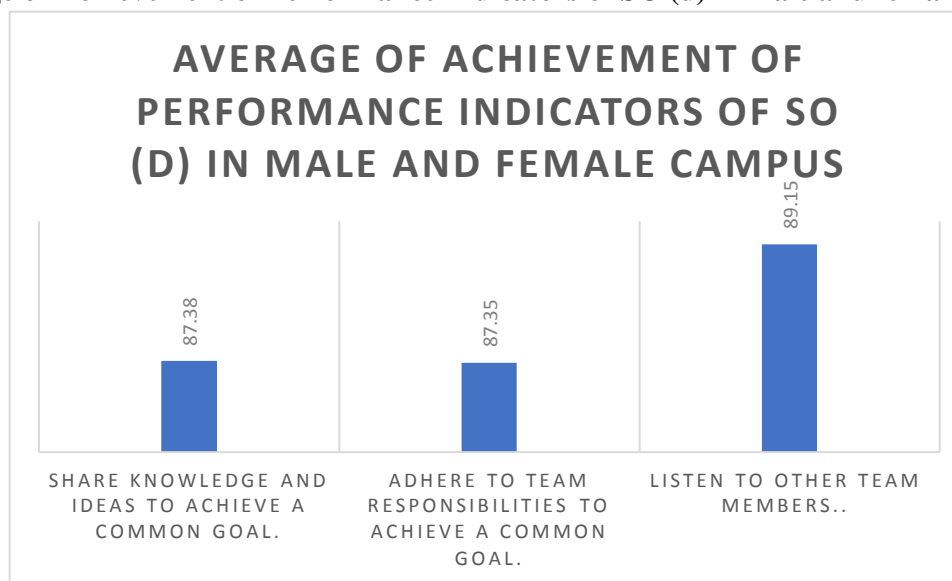


Figure 1: Average achievement of SO (d) in male and female campus

SO IMPROVEMENT PLAN

Figure 2 below shows the general view of SO improvement plan.

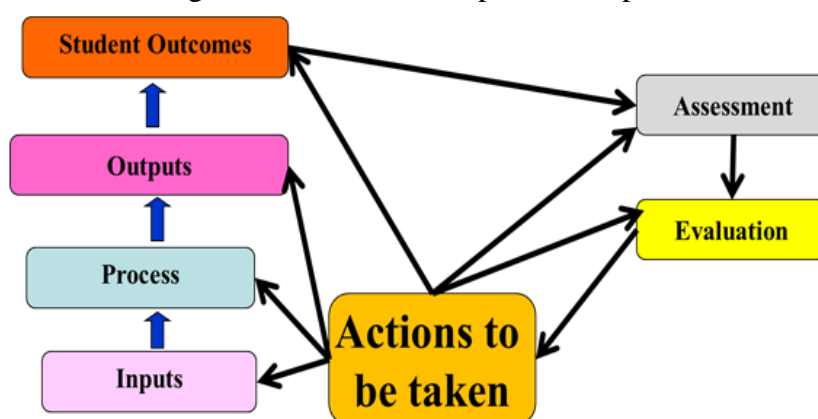


Figure 2: SO (d) improvement plan

By and large SO assessment result shows that SO (d) accomplished the benchmark of 65%. In any case, the outcomes introduced in the appraisal report are just founded on the two software engineering courses. Information from different courses from more elevated level can create a

more credible and dependable appraisal results. Along these lines, the evaluation council prescribes the following activities to improve the outcomes. It is necessitated that software engineering information bunches audit the planning of the more elevated level courses and search for the planning of different courses with SO (d). More courses planned with SO (d) will be useful to improve the hotspot for appraisal. Some venture chiefs or potentially venture analysts didn't present the assessment results, so it is required to improve the reaction rate. Course teacher needs to clarify the subjects in more detail and give more practice on addresses which are identified with SO (d). Regular meeting with hypothesis educator, lab teacher and course facilitator are critical to improving the accomplishment results.

CONCLUSION

Graduation Project-I (491CSS-4) and Graduation Project-II (492CSS-4) was selected as a source of assessment for SO (d) in first semester 2019/2020. Data were collected from a total five graduation Overall results shows that achievement rate of SO (d) in the male campus is 82.91% as compared to 93.01% in the female campus. It shows that both campuses achieve a target of 65%.

SO (j): An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modelling and design of computer-based systems in a way that demonstrates comprehension of the trade-offs involved in design choices

INTRODUCTION

According to the student outcome (SO) assessment plan 2017-2021, student outcome SO (j) was selected for assessment. A rubric was designed to assess the SO (j), the rubric was mainly based on the following three performance indicators (PI);

PI j.1: Apply math foundations in the modelling and design of computer-based systems

PI j.2: Apply algorithmic principles in the modelling and design of computer-based systems

PI j.3: Apply computer science theory in the modelling and design of computer-based systems

These three PIs were measured against four performance level i.e. “exemplary”, “accomplished”, “developing” and “beginning”. More explanation on measurement is given in section 2.

Since it was required to do the summative assessment, so courses are selected only from level 8 and 9 with a strong relationship with SO (j). Data was collected for Computer Science (CS) program to evaluate the SO (j) in the second semester 2019/2020 and evaluation results are presented in this report.

GENERAL RUBRIC TO ASSESS THE STUDENT OUTCOME (j)

Student Outcome (j): An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modelling and design of computer-based systems in a way that demonstrates comprehension of the trade-offs involved in design choice

Semester/Year Data collected: Second Semester, 2019/2020

Student outcome (j): An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modelling and design of computer-based systems in a way that demonstrates comprehension of the trade-offs involved in design choices

PI. No	Performance Indicator	Exemplary	Accomplished	Developing	Beginning	Marks in %age
PI j.1	Apply math foundations in the modelling and design of computer-based systems	Math foundations in the modelling and design of computer-based systems is applied distinguishably	Math foundations in the modelling and design of computer-based systems is applied Proficiently	Math foundations in the modelling and design of computer-based systems is applied Marginally	Math foundations in the modelling and design of computer-based systems is applied Unacceptably	
PI j.2	Apply algorithmic principles in the modelling and design of computer-based systems	Algorithmic principles in the modelling and design of computer-based systems is applied distinguishably	Algorithmic principles in the modelling and design of computer-based systems is applied Proficiently	Algorithmic principles in the modelling and design of computer-based systems is applied Marginally	Algorithmic principles in the modelling and design of computer-based systems is applied Unacceptably	
PI j.3	Apply computer science theory in the modeling and design of computer-based systems	Computer science theory in the modeling and design of	Computer science theory in the modeling and design of computer-based systems	Computer science theory in the modeling and design of	Computer science theory in the modeling and design	

		computer-based systems is applied distinguishably	is applied Proficiently	computer-based systems is applied Marginally	of computer-based systems is applied Unacceptably	
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*All = 90% and above [Exemplary]

*Most of the = 75% to 89% [Accomplished]

*Some of the = 50% to 74% [Developing]

*Very few = less than 50% [Beginning]

*** A Performance Indicator is said to be achieved if 65% of the students at the developing or above levels.

STUDENT OUTCOME ASSESSMENT PLAN

Student outcome (j): An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modelling and design of computer-based systems in a way that demonstrates comprehension of the trade-offs involved in design choices

Semester/Year Data collected: Second Semester, 2019-2020

Assessment Coordinator (Collection Agent): Mr. Shah Masud, Ms. Raniah, Dr. Asadullah Shaikh, Dr. Mana Al Reshan, and Dr. Magzoub Abdullah

Program: Computer Science

Table 1, shows the assessment plan of SO (j) for the computer science program. Assessment plan includes the strategies used to assess the SO (j), assessment method, source of assessment and target to achieve the SO (j). Because we have to do a summative assessment, so courses are selected only from level 8 and 9 with the strong relationship of course learning outcome with SO (j). Moreover, curriculum mapping is also considered during selecting the CS courses as a source of assessment.

Table 1: Student Outcome (j) assessment plan for the computer science program

PI No	Performance Indicators	Strategies	Assessment Method(s)	Source of Assessment	Target for Performance	Evaluation of Results
PI j.1	Apply math foundations in the modeling and design of computer-based systems	111CSS-4, 113CSS-4, 212CSS-3, 227CSS-3, 330CSS-3, 342CSS-3, 345CSS-3, 380CSS-3, 456CSS-3, 474CSS-3, 491CSS-4, 492CSS-3	Written project report and oral presentation with scoring rubrics	491CSS-4, 492CSS-4	65% of the students at the accomplished or above levels	SO Assessment Group
PI j.2	Apply algorithmic principles in	113CSS-3, 212CSS-3, 222CSS-3, 227CSS-3, 235CSS-3, 329CSS-3,	Written project report and	491CSS-4, 492CSS-4	65% of the students at the	SO Assessment Group

	the modeling and design of computer-based systems	330CSS-3, 340CSS-3, 342CSS-3, 345CSS-3, 380CSS-3, 429CSS-3, 456CSS-3, 457CSS-3, 474CSS-3, 491CSS-4, 492CSS-4	oral presentation with scoring rubrics		accomplished or above levels	
PI j.3	Apply computer science theory in the modeling and design of computer-based systems	113CSS-3, 212CSS-3, 342CSS-3, 345CSS-3, 380CSS-3, 429CSS-3, 456CSS-3, 457CSS-3,	Written project report and oral presentation with scoring rubrics	491CSS-4, 492CSS-4	65% of the students at the accomplished or above levels	SO Assessment Group

SO (j) ASSESSMENT RESULTS

The collected data is measured using the rubric as follows:

1. The project examiner and project supervisor of 491CSS-4 and 492CSS-4 was asked to fill out the relevant criteria of the rubrics and return the evaluation results to the SO assessment group.
2. SO assessment group reviews the evaluation results and prepared the assessment report.
3. Since there is more than one source of data, the SO Assessment group must aggregate the evaluation results.

Overall, SO (j) Assessment in Male and Female Campus

Two courses 491CSS-4 (Graduation Project-I) and 492CSS-4 (Graduation Project-II) were selected to assess the SO (j). Assessment is based on the three-graduation project-I and 2 graduation project-II. Table 2 shows the overall assessment result of SO (j) based on the data collected from both male and female campus. Assessment result shows that 90.04% of students achieved the SO (j) in male campus and 91.56% students achieved in the female campus. Average achievement rate in male and female campus is 90.03% which achieved the target of 65%.

Table 2: SO (j) achievement for computer science courses in male and female campus

Campus	SO (j) achievement
Male Campus	90.04%
Female Campus	91.56%
Average	90.03%

Table 3 below shows the achievement of each performance indicator of SO (j) in male and female campus. SO (j) was divided into three performance indicators and the result shows that average achievement of PI b.1 is 89.36%, and average achievement of PI b.2 is 90.915%.

Individual assessment in male and female campus is also shown in table 3. As shown in figure 1, each performance indicator in male and female campus achieves the target benchmark.

Table 3: SO (j) achievement for computer science courses in male and female campus

CS Student Outcomes		Percentage of Performance			Source of Data	Time of Data Collection
Student outcome (j): An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modelling and design of computer-based systems in a way that demonstrates comprehension of the trade-offs involved in design choices		Male Campus	Female Campus	Average		
PI j.1	Apply math foundations in the modelling and design of computer-based systems	88.15%	90.57%	89.36%	491CSS-4, 492CSS-4	Second Semester 2019/2020
PI j.2	Apply algorithmic principles in the modelling and design of computer-based systems	90.31%	91.52%	90.915.%	491CSS-4, 492CSS-4	Second Semester 2019/2020
PI j.3	Apply computer science theory in the modelling and design of computer-based systems	91.67%	92.6%	92.135&	491CSS-4, 492CSS-4	Second Semester 2019/2020

*** Target for Performance is 65% of the students are at the developing or above levels

Average of Achievement of Performance Indicators of SO (j) in male and female campus

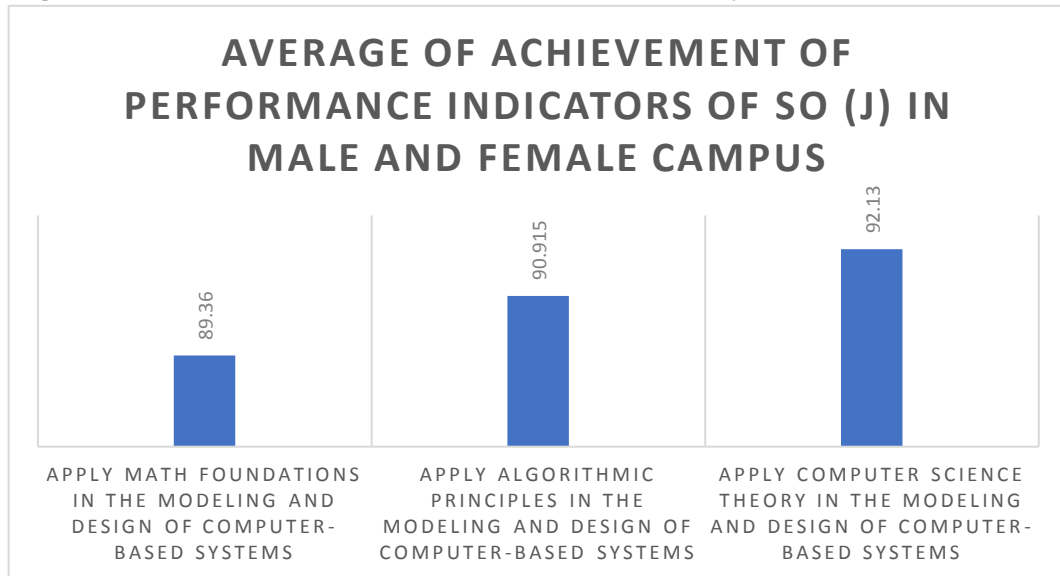


Figure 1: Average achievement of SO (j) in male and female campus

SO IMPROVEMENT PLAN

Figure 2 below shows the general view of SO improvement plan.

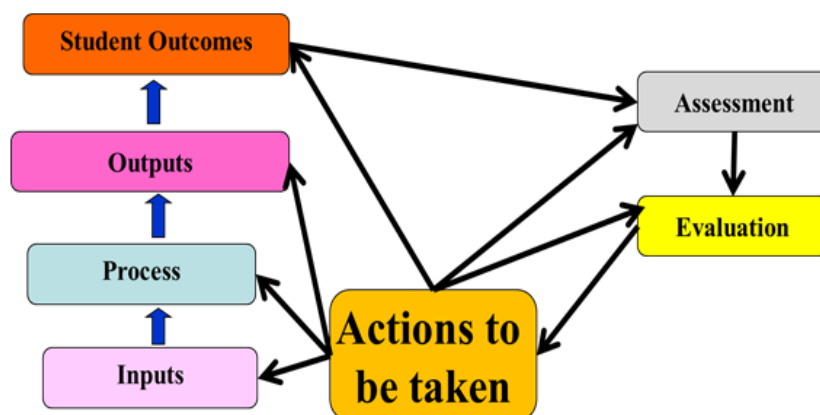


Figure 2: SO (j) improvement plan

By and large SO assessment result shows that SO (j) accomplished the benchmark of 65%. In any case, the outcomes introduced in the appraisal report are just founded on the two software engineering courses. Information from different courses from more elevated level can create a more credible and dependable appraisal results. Along these lines, the evaluation council prescribes the following activities to improve the outcomes. It is necessitated that software engineering information bunches audit the planning of the more elevated level courses and search for the planning of different courses with SO (j). More courses planned with SO (j) will be useful to improve the hotspot for appraisal. Some venture chiefs or potentially venture analysts didn't present the assessment results, so it is required to improve the reaction rate. Course teacher needs to clarify the subjects in more detail and give more practice on addresses which are identified with SO (j). Regular meeting with hypothesis educator, lab teacher and course facilitator are critical to improving the accomplishment results.

CONCLUSION

Graduation Project-I (491CSS-4) and Graduation Project-II (492CSS-4) was selected as a source of assessment for SO (j) in first semester 2019/2020. Data were collected from a total of five graduation projects. Overall results show that the achievement rate of SO (j) in the male campus is 90.04% as compared to 91.56% in the female campus. It shows that both campuses achieve a target of 65%.

Strengths :

1. Overall all PLOs/SOs are achieved during the first semester 2019/2020 and second semester 2019/2020.
2. For SO (b) average achievement is 86.81% but achievement rate in the female campus is better than male campus. Both the campuses achieved the target benchmark of 65%.
3. For SO (f), the average achievement is 86.56% but achievement rate in the female campus is better than male campus. Both the campuses achieved the target benchmark of 65%.
4. For SO (d), the average achievement is 87.96%. Both the campuses achieved the target benchmark of 65%.

Areas for Improvement:

Overall SO evaluation result shows that all assessed SOs achieved the benchmark of 65%. However, the results presented in the assessment report are only based on two computer science courses. Data from other courses from a higher level can produce more authentic and reliable assessment results. So the assessment committee recommends the following actions to improve the results;

- It is required that computer science knowledge groups review the mapping of the higher-level courses and look for mapping of other courses with SO (b), SO(d), SO (f) and SO (j). More courses mapped with SOs will be helpful to improve the source for assessment.
- Some project supervisors and/or project examiners delayed or did not submit the evaluation results, so it is required to improve the response rate.
- Course instructor needs to explain the topics in more detail and give more practice on lectures which are related to SOs.
- Regular meeting with theory instructor, lab instructor and course coordinator is very important to improve the achievement results.
- Higher-level courses can have course projects to be linked with SO (d) and (f).

Priorities for Improvement:

For the summative assessment, courses are normally selected only from higher levels (i.e. level 8 and 9) with the strong relationship of course learning outcome with SO (b). Current mapping shows that only a few courses are mapped with SO (b), SO (d), SO (f) and SO (j). So it is required that computer science knowledge groups review the mapping of the higher-level courses and look for mapping of other courses with SO (b), SO(d), SO (f) and SO (j). More courses mapped with SOs will be helpful to improve the source for assessment.

D. Summary of Course Reports

1. Teaching of Planned Courses / Units

List the courses/units that were planned and not taught during the academic year, indicating the reasons and compensating actions.

Course	Units/Topics	Reasons	Compensating Actions
111CSS-4	N/A	N/A	N/A
113CSS-4	N/A	N/A	N/A
212CSS-4	N/A	N/A	N/A
222CSS-4	N/A	N/A	N/A
227CSS_3	N/A	N/A	N/A
235CSS_3	N/A	N/A	N/A
281CSS_3	N/A	N/A	N/A
328CSS_3	N/A	N/A	N/A
329CSS_3	N/A	N/A	N/A
330CSS_3	Modern programming comparative study	Students did not attend the class in the last week	More lecture time to elaborate on the modern programming comparative study
342CSS_3	N/A	N/A	N/A
345CSS_3	Linear and Integer Programming Models, Queuing Theory	N/A	Need more problems to solve for practice
361CSS_3	N/A	N/A	N/A
380CSS_3	N/A	N/A	N/A
429CSS-3	N/A	N/A	N/A
440CSS_3	N/A	N/A	N/A
456CSS_3	N/A	N/A	N/A
457CSS_3	N/A	N/A	N/A
474CSS_3	N/A	N/A	N/A
491CSS-4	N/A	N/A	N/A

2. Courses with Variations

List courses with marked variations in results that are stated in the course reports, including: (completion rate, grade distribution, student results, etc.), and giving reasons for these variations and actions taken for improvement.

Course Name & Code	variation	Reasons for variation	Actions taken
111CSS-4	N/A	N/A	N/A

113CSS-4	N/A	N/A	N/A
212CSS-4	N/A	N/A	N/A
222CSS-4	N/A	N/A	N/A
227CSS_3	N/A	N/A	N/A
235CSS_3	N/A	N/A	N/A
281CSS_3	N/A	N/A	N/A
328CSS_3	N/A	N/A	N/A
329CSS_3	N/A	N/A	N/A
330CSS_3	N/A	N/A	N/A
342CSS_3	N/A	N/A	N/A
345CSS_3	N/A	N/A	N/A
361CSS_3	N/A	N/A	N/A
380CSS_3	N/A	N/A	N/A
429CSS-3	N/A	N/A	N/A
440CSS_3	N/A	N/A	N/A
456CSS_3	N/A	N/A	N/A
457CSS_3	N/A	N/A	N/A
474CSS_3	N/A	N/A	N/A
491CSS-4	N/A	N/A	N/A

3. Result Analysis of Course Reports

(including strengths, Areas for Improvement, and priorities for improvement)

Strengths :

- Students were able to get the most benefit of tutorial classes.
- The students are provided with the course plan, syllabus and other course materials in the beginning of the semester.
- Faculty members relate course learning outcomes to topics and teaching strategies and assessment methods.
- Teaching strategies of the courses were effective and facilitated a better understanding of the concepts to the students.
- The course instructors explain the content of the learning material repetitively whenever requested by the students.
- The course instructors encourage the students to ask questions and develop their ideas in the course.
- Course Instructor was collaborative and the course content was clear
- The Course Instructor was always present to assist during office hours.

Areas for Improvement:

- Encourage the students to attend the local programming hackathons and contests.
- Maintain a sense of competition among students and encourage them especially in programming.
- The learning resources such as the hard copy of the books from the central library should be accessible to the students.
- Encourage students to visit the course instructor to check their answer sheets and learn from their mistakes.
- Need to follow-up classroom facilities by the program leaders.
- Follow-up the overall quality issues of the course which includes updating the course syllabus and course learning outcomes (CLO).
- Reviewing the mapping of course learning outcomes with program learning outcomes.
- To continue the implementation of actions recommended in the previous semester for the course improvement in the following semester.
- To fix a minimum of the one-hour tutorial is compulsory in every week in the working hours from 8:00 am – 2:00 pm
- Interactive tutorials with group discussions and seminars should be conducted every week.
- Improving the student's ability to analyze the syntactical differences of commonly used programming languages for the course 330CSS-3
- Devote more time to use skills in writing, analyzing and debugging OpenGL programs in the course 281CSS-3
- Devote more time to Solve simple queries by using the operations (selection, projection, join, a Cartesian product) of the theoretical database language Relational Algebra in the course 380CSS-3
- Add more practical topics to discuss applying the HCI methodologies to the emerging technologies in the course 328CSS-3
- Periodical maintenance of the projector in the classroom should be done
- Assign more tasks for classwork and homework for discussing the theory of parallel and distributed algorithms in the course 456CSS-3
- Explain the basic concepts during lecture and use the tutorial time to solve problems related to scheduling algorithms, thread, deadlocks etc. in the course 227CSS-3
- To motivate students at regular intervals is very important in this environment. It is observed that students did not actively participate during the lecture; this active

participation can be achieved by asking related questions, taking short quizzes during the lecture, group discussion etc.

- Organize at least two meetings during the whole semester to discuss the progress in the Projects and student-learning outcome.
- Update the lab activities in 328CSS-3 with more UI/UX tools and more varieties of programming languages.
- Extra time for lectures has been given to students.
- Instructors may explain more on concepts of dynamic programming and instructors can focus on more problems.
- A new teaching strategy to engage students with the real-life scenario that serves the purpose of this course, Computer Security.
- Improve the research skills in the course 440CSS-3
- Understanding the exam questions and solving questions efficiently and analyze various case studies related to the use and misuse of technology in the course 440CSS-3.
- Motivate students to the importance of seeing other students' projects in another university and focus on the real need of the market in the course 491CSS-4

Priorities for Improvement:

- Due to COVID-19 pandemic study activities have been converted to online/ e-Learning mode, in the second semester 2019-2020, hence clear policy is required from the college level to cope up with the situation in the next semester if the same situation prevails.
- Track the students' problem with their academic advisors to solve them before they lead to withdrawing the whole semester.
- More assignments needed, encourage students to study from books, improve the English language, increase the awareness of students about the significance of attending all lectures and the importance of self-learning.
- Students should know the expectations in the assessment methods.
- Upload the Course Materials to the course blackboard page in the first week of the semester.
- Follow the current course syllabus and course specification.
- To motivate students to be active during class by asking questions regularly during the lecture.

- To direct the students to refer to the internet as a learning resource to improve their understanding.
- It is good to include seminars/ posters / mini projects in every level course to develop the communication and interpersonal skills of the students during undergraduate studies.
- Train students with the type of questions on critical thinking rather than memorizing.
- Add Project and group discussion to match the competence learning program outcomes
- The course syllabus has to be updated periodically with current technology topics for every two years.
- Supplying the halls with the smart boards and the data show
- Prepare and install all required software in the labs' PCs before the beginning of next semester
- Course topics should be updated to match the need for real-world jobs.
- Lab PCs should be upgraded.
- Follow up the progress on actions proposed for improving the quality of selected projects in the course 491CSS-4.
- Students must be encouraged to attend at least one weekly tutorial hour through which more group work will be implemented in the project.
- Instructor required to teach using real-world problems
- Explaining CLO's and its relations to program SO's at the beginning of the course
- Revising CLOs for this course due to students' lack of knowledge and enhance their skills by adding extra tutorials or adding new security courses.
- Need major modification of CLOs in the course 429CSS-3, Labs should focus on Computer Security tools rather than programming.
- Implementing a final project is very important in this course, 429CSS-3 and Implementing cryptographic algorithms with symbolic computation software is essential as well.
- Instructor of lab and theory recommended being the same instructor for both
- Better grading mechanism such as grades during presentation 1 and 2 need to be implemented for the course 491CSS-4

E. Program Activities

1. Student Counseling and Support

Activities Implemented	Brief Description *
(Male Section)	
Orientation	Orientation for new students on 11/09/2019 at 11:00 am and there were 18 participants.
Visiting the IT Center	Visiting NU IT Center on 15/10/2019 at 11:00 am and there were 8 participants.
NU Swimming Tournament	Participating in the NU swimming competition on 27/10/2019 at 7:00 pm and there were 2 participants.
Soccer Training	Playing friendly soccer matches on 30/10/2019 at 7:00 pm and there were 30 participants.
Soccer Training	Playing friendly soccer matches on 01/11/2019 at 7:00 pm and there were 31 participants.
Soccer Tournament	Playing soccer matches which occurred on 04-14/11/2019 at evening and there were 33 participants.
Employable Skills	Employable skills for graduating students which occurred on 04/11/2019 at 11:00 am and there were 5 participants.
Python	Python programming language training course which occurred on 06/11/2019 at 11:00 am and there were 19 participants.
Employable Qiyas Test Training	Employable Qiyas Test training for students which occurred on 12/11/2019 at 10:00 am and there were 8 participants.
Swimming Competition	Participating in Saudi Universities Sports Federation – Swimming Competition which occurred on 16/11/2019 at 8:00 am and there was 1 participant.
Meeting with HoDs	Students open meeting with HoDs which occurred on 17/11/2019 at 8:00 am and there were 15 participants.
Volunteering Seminar	The importance of volunteering seminar which occurred on 17/11/2019 at 8:00 am and there were 15 participants.
Future Skills Workshop	The workshop introduces the important skills for the future and the importance of gaining these skills which occurred on 18/11/2019 at 8 am and there were 9 participants.
Computer Science and Multimedia Concepts Seminar	Computer science and multimedia concepts seminar which occurred on 19/11/2019 at 11:00 am and there were 3 participants.
Gathering for Graduating Students	Gathering for graduating students which occurred on 11/12/2019 at 8:00 pm and there were 10 participants
Orientation	Orientation for new students Second Semester, guidelines & instructions for the new students about the CS program which occurred on 11/02/2020 at 9:00 am and there were 20 participants

Introduction to Cybersecurity Workshop	The workshop introduces cybersecurity and threat which occurred on 02/03/2020 at 11:00 am and there were 85 participants
Najran University Futsal Tournament	Participating in Najran university Futsal tournament which occurred on 02-05/03/2020 at 9:00 am and there were 13 participants
(Female Section)	
Orientation	Orientation for new students which occurred on 07/09/2019 and there were 14 participants. The Objective: to clarify the importance of academic advising and to introduce them to college and department systems.
National Day Celebration	National Day Celebration which occurred on 25/09/2019.
Time management	Time management which occurred on 02/10/2019 there were 6 participants. This event seeks to provide students with the importance of time management.
Teacher's Day	Which occurred on 07/10/2019
How to prepare for the exams?	Which occurred on 16/10/2019. The objective is to prepare students psychologically and mentally during the exam.
Breast cancer event	Breast cancer event which occurred on 12/10/2019.
World Mental Health Day	Which occurred on 31/10/2019. Distribute cards containing educational information about mental health.
A journey of a thousand miles begins with a single step	A journey of a thousand miles begins with a single step which occurred on 06/11/2019 and there were 65 participants.
Manage references (Mendeley)	Familiarize students, especially the advanced levels, with how to use Mendeley program to organize references scientifically.
Afforestation initiative	Afforestation initiative which occurred on 20/11/2019. The Goal: To initiate forestation between the buildings of the college.
Orientation	Orientation for new students which occurred on 12/02/2020 and there were 31 participants.
Happiness Event	Happiness event which occurred on 24/02/2020.
Cyber Security Logo Design Competition	Which occurred on 16/02/2020 until 27/02/2020 and there were 12 participants.
Comment on Student Counseling and Support **	
The performance evaluated by distributing a questionnaire at the end of each event.	

* including action time, number of participants, results and any other statistics.

** including performance evaluation on these activities

2. Professional Development Activities for Faculty and Other Staff

Activities Implemented	Brief Description *
Authentication and Secure Session Establishment in Body Area Networks Using Multiple Biometrics and Physiological Signals	This seminar was presented by Dr. Mana Al Reshan on 02/09/2019 at 11:00 am and there were 30-35 participants
Understanding Design Factors in Software Crowdsourcing	This seminar was presented by Dr. Turki Alelyani on 11/09/2019 at 11:00 am and there were 30-35 participants
Training and Evaluation in a Large-Scale Virtual Environment for a Location-Based Mobile Application	This seminar was presented by Dr. Adel Al-Sulaiman on 16/09/2019 at 11:00 am and there were 30-35 participants
Blackboard	This seminar was presented by Deanship of E-Learning on 18/09/2019 at 11:00 am and there were 25-30 participants
Advances in LaTeX	This seminar was presented by Dr. Asadullah Shaikh on 30/10/2019 at 10:30 am and there were 25-30 participants
Monthly Seminar	This seminar was conducted by the Seminar and Scientific Activities Unit to discuss the current research and the roadmap for future series of talks and activities. The speakers were Dr. Abdullah Alabas, Dr Turki Alelyani, Dr. Asadullah Shaikh, Dr. Adel Al-Sulaiman, Mr. Ahmad Almasabi, and Mr. Ibrahim Alyami. The seminar was organized on 12/12/2019 at 11:00 am and there were 30-35 participants
Designing and Evaluating the Use of Digital Behavioral Change Interventions (DBCIs): Life guide Toolbox Software	This seminar was presented by Dr. Yousef Asiri on 17/02/2020 at 11:00 am and there were 30-35 participants
Secure and Efficient Models for Retrieving Data from Encrypted Databases in Cloud	This webinar was presented by Dr. Sultan Almakdi on 07/05/2020 at 9:00 pm and there were 30-35 participants
Active Deep Learning Method to Automate Unbiased Stereology Cell Counting	This webinar was presented by Dr. Saeed Alahmari which occurred on 11/05/2020 at 9:30 pm and there were 30-35 participants
Data-Driven Indoor Mobility Analyses, Modeling, and Encounter Classification for IoT Applications	This webinar was presented by Dr. Mimonah Al Qathrady on 12/05/2020 at 10:00 pm and there were 30-35 participants

Changing Energy Consumption Patterns Based on Multi-Agent Human Behavior Modeling for Analyzing the Effects of Feedback Techniques	This webinar was presented by Dr. Mesfer Alrizq on 13/05/2020 at 10:00 pm and there were 30-35 participants
Comment on Professional Development Activities for Faculty and Other Staff** During the year 2019-2020, a total of 11 professional development activities conducted at different times of the year and on different topics in computer science such as Internet of Things and Deep Learning. Due to Covid-19, some activities were successfully conducted virtually.	

* including action time, number of participants, results and any other statistics.

** including performance evaluation on these activities

3. Research and Innovation

Activities Implemented	Brief Description*
Year 2019 Publications	CS Dept Published = **10
Asiri, Y., Millard, D. and Weal, M., (2019). Studying the Usability of A Mobile Behavior Change Intervention to Enhance Critical Thinking in Project Supervision. In Journal of IEEE Transactions on Learning Technologies.	
Asiri, Yousef, Millard, David and Weal, Mark (2019). Evaluating the Impact of the Components of A Mobile Behavior Change Intervention to Support Critical Thinking in Research Projects. In Mobile Learning - Proceedings of the 15th ML Conference, International Association for Development of the Information Society (IADIS). Pp.65-72.	
S. Almakdi and B. Panda, "Secure and Efficient Query Processing Technique for Encrypted Databases in Cloud," in 2019 2nd International Conference on Data Intelligence and Security (ICDIS), IEEE, 2019, pp. 120–127.	
S. Almakdi and B. Panda, "Designing a Bit-Based Model to Accelerate Query Processing Over Encrypted Databases in Cloud," in the 9th International Conference on Cloud Computing (CloudComp 2019), Springer, Cham, 2019.	
S. Almakdi and B. Panda, "A Secure Model to Execute Queries Over Encrypted Databases in the Cloud," in 2019 IEEE International Conference on Smart Cloud (SmartCloud), IEEE, 2019.	
Patanasakpinyo, T., Batinov, G., Whitney, K., Sulaiman, A., & Miller, L. (2019). Enhanced Prediction Models for Predicting Spatial Visualization (VZ) in the Address Verification Task. EPiC Series in Computing, 58, 247–256.	
Akram, Muhammad and Rosnafisah Sulaiman. "Comparative web accessibility evaluation of Saudi government websites for compliance with WCAG 1.0 and WCAG 2.0 using automatic web accessibility tools." <i>Journal of theoretical and applied information technology</i> 97 (2019): 2656-2668.	

Alshehri, Ali; Marcinek, Pawel; Alzahrani, Abdulrahman; Alshahrani, Hani; Fu, Huirong; ", PUREDroid: Permission Usage and Risk Estimation for Android Applications, Proceedings of the 2019 3rd International Conference on Information System and Data Mining,,179-184,2019,	
Alzahrani, Abdulrahman; Alshahrani, Hani; Alshehri, Ali; Fu, Huirong; ", An Intelligent Behavior-Based Ransomware Detection System for Android Platform, "The First IEEE International Conference on Trust, Privacy and Security in Intelligent Systems, and Applications', 2019.	
Alqhtani, S.M., Alqahtani, A., Raizza, A. (2019), 'Steganography Android Application Using LSB and DCT Techniques for Gray and Color Images', Academicsera, 14 November 2019	
Year 2020 Publications	CS Dept Published = **4
Alzahrani, Abdulrahman; Alshehri, Ali; Alshahrani, Hani; Fu, Huirong; ", Ransomware in Windows and Android Platforms,arXiv preprint arXiv:2005.05571,2020,	
Ali Farooq, Farhan Ahmad, Nyla Khadam, Birgy Lorenz and Jouni Isoaho The Impact of Perceived Security on Intention to use E-Learning Among Students	
M. Asiri, T. Sheltami, L. Al-Awami and A. Yasar, "A Novel Approach for Efficient Management of Data Lifespan of IoT Devices," in IEEE Internet of Things Journal, vol. 7, no. 5, pp. 4566-4574, May 2020, DOI: 10.1109/JIOT.2019.2955099.	
Muhammad Akram & Rosenafisah Bte Sualiamin, "An Empirical Study to Evaluate the Accessibility of Arabic Websites by Low-Vision Users" The 8th International Conference on Information Technology and Multimedia, Transcending Humanity Through Industrial Revolution 4.0 and Beyond, 24-25 August 2020, Malaysia	
Total Accepted 9th Stage Projects	**4 from CS**
Using Data Analytics-based Approaches to Inform Decisions Making in Academic Programs	Adel Sulaiman
A Study for the Relationship between Digital Empathy and Well-being Issues in Social Media Saudi Arabia Context	Yousef Asiri
Coll Droid A Collaborative Framework to Detect Android Malicious Applications Based on Blockchain Technology	Hani Alshahrani
Deep Learning for Event Detection in Social Media	Samar Alqhtani
Total Accepted 10th Stage Projects (COVID 19)	**2 from CS**
Using eLearning for Emergency Online Teaching in Two Different Crises: War Case and COVID19 in Saudi Arabia	Yousef Asiri
A Study of The Impact of COVID19 on the Emergency Management Resources in Saudi Universities	Yousef Asiri
Comment on Research and Innovation **	
Recommendations	
<ul style="list-style-type: none"> • Provide an open access fee to each faculty member to publish in Scopus, ESCI, and SCIE or SSCI without an approved DSR project. • Allow each faculty to travel for a conference without any deductions and support financially at least once a year. 	

- Encourage research groups at NU to establish their research lab to conduct high-quality research and write research papers that can be published in Scopus, ESCI, and SCIE or SSCI journals.
- Provide funding to buy research equipment to conduct experimental results.
- If open access fee is provided the citation number will automatically improve as papers will be available free for reading.
- Encourage faculty members to apply research projects at DSR and the requirement of completion of the project can be Scopus indexed paper rather than SCIE/SSCI paper.
- Once the papers are published, citation can only be obtained if papers are freely available, therefore, encourage each staff member to upload their papers on a personal website and official website of the college.
- Access of plagiarism software to each faculty member of the college.

* including action time, number of participants, results and any other statistics.

** including performance evaluation on these activities

4. Community Partnership

Activities Implemented	Brief Description*
Informative lecture about programs in College of computer science and IS.	Informative lecture to high school students about programs in College of computer science and IS features offered in November 2020
Google education features	Informative lecture to high school teachers out Google Education November features offered in 2020
How to protect yourself in the Internet world	Informative lecture to high school and intermediate students about different ways to protect your information in the internet world offered in November 2020
Mobile application development (future development)	Informative lecture to high school and intermediate students about programing the mobile application offered in November 2020
The little programmer	Informative lecture to primary school students about programming skills and information and ways to learn it offered in November 2020
Python programming language basics and concepts	Informative lecture and practical lessons to CSIS students about Python programming language basics and concepts
Multimedia techniques concepts	Informative lecture to Najran University's students about multimedia uses in computers offered in November 2020

ELECTRONIC COMMERCE	Teaching and training students to understand business basic concepts and how to create an electronic commerce application offered in November 2020
Programming competition	Competition between CSIS students in computer programming offered in November 2020
Training about computer applications	Training held for university students about important computer applications offered for three days in November 2020
Extra food donation application	Provide training for creating computer application for food donation offered in November 2020
Artificial Intelligence in E-Learning	Help students who have the interest to learn the importance of E-Learning using artificial intelligence. Targeted CS Students (Female) and
Medical Robotics	Help students to learn the usage of robots in the medical industry and how these robots save the time of humans. targeted Department of Radiology (Female)
Teaching a course "Fundamentals of Cryptography" in Cyber Security diploma program	assist students to learn the basic concepts of cryptography and understand the basic concept of number theory. Also, they will distinguish symmetric and asymmetric cryptographic algorithms and their applications and discuss applications for cryptographic hash functions. Targeted Cyber Security diploma program
Mendeley Reference Manager	To help the Graduation Project Students for Managing References in final project reports. Targeted graduation project students (female)
Survey Monkey Workshop	To help the Graduation Project Students for conducting Surveys. Targeted graduation project students (female)
Teaching Faculty at the Cybersecurity higher diploma program	Teaching the Principles of Information Security. Targeted Cyber Security diploma program
Teaching Faculty at the management of Security Forces - Najran	Teaching and Training Police personnel on the use of Computer for office purposes. Targeted police personnel
The workshop will be given to TAs and Lecturers at Najran University on Things I	This workshop will cover topics that are of interests to those who are looking to pursue their master and PhDs. Targeted Teaching Assistants and Lecturers at Najran University

wish I knew before Starting Graduate School?	
Introduction to Python	Two hours workshop will cover the fundamentals of Python. It will be open for Najran University Students. Targeted NU Students
Comment on Community Partnership **	
<p>The departments of Computer Science and information systems have two campuses (male and female) with 14 Academic staff who participated in 20 community services activities. There were over 100 participants to these activities inside and outside the university. The highest percentage of Academic staff who worked together in community services was in providing seminars for all university of Najran students. Also, the example of activities offered to outsiders is the police department in Najran.</p>	

* including action time, number of participants, results and any other statistics.

** including performance evaluation on these activities

5. Analysis of Program Activities

(including strengths, Areas for Improvement: and priorities for improvement)

Strengths :
<ul style="list-style-type: none"> • Diversity and inclusiveness in the topics of seminars that are introduced to the staff and students. • Most of the seminars and webinars selected carefully to keep tracking the trends in the computer area and research. • Introduced activities for staff and faculty members are related to the functionality and performance evaluation of the staff.
Areas for Improvement:
<ul style="list-style-type: none"> • Specifies a budget for seminars, webinars and workshops which is targeted at the faculty members. • Awarded for the best topic of seminars, webinars and workshops. • Support and encourage the staff members by offering software and hardware that they need to complete their scientific research and then introducing it as workshops. • Specifies a suitable environment (e.g. room for seminars, and another room for the other activities) with its accessories (e.g. computers, data show, stage, entertainment, etc.)

- Ensure that the seminars and webinars are recorded and available publicly on the college's website or using some platforms such as YouTube.

Priorities for Improvement:

- Financial support to faculty to conduct their researches and projects.
- Equality in sports activities in male and female campuses.
- Students should volunteer to participate in research, webinars, or seminars.

F. Program Evaluation

1. Evaluation of Courses

Course Code	Course Title	Student Evaluation (Yes-No)	Other Evaluations (specify)	Developmental Recommendations
111ISL-2	Introduction to Islamic Culture	Yes	N/A	Developmental recommendations for each course are mentioned in the course report in details
104PHIS-4	Fundamental of Physics	Yes	N/A	
111CSS-4	Programming Language 1	Yes	N/A	
106MATH-3	Introduction to Integration	Yes	N/A	
152MATH-3	Discrete Mathematics	Yes	N/A	
201ARAB-2	Arabic Skills	Yes	N/A	
342MATH-3	Linear Algebra	Yes	N/A	
113CSS-4	Object-Oriented Programming	Yes	N/A	
324STAT-3	Probabilities and Engineering Statistics	Yes	N/A	
203MATH-3	Advanced Calculus	Yes	N/A	
112ISL-2	Islamic Culture 2	Yes	N/A	
212CSS-3	Data Structures and Algorithms	Yes	N/A	
105PHIS-4	Advanced Physics	Yes	N/A	
222CSS-4	Computer Organization and Architecture	Yes	N/A	
330CSS-3	Programming Paradigms	Yes	N/A	
227CSS-3	Operating Systems	Yes	N/A	
113ISL-2	Islamic Culture 3	Yes	N/A	
212CSS-3	Data Structures and Algorithms	Yes	N/A	
105PHIS-4	Advanced Physics	Yes	N/A	

222CSS-4	Computer Organization and Architecture	Yes	N/A
330CSS-3	Programming Paradigms	Yes	N/A
227CSS-3	Operating Systems	Yes	N/A
113ISL-2	Islamic Culture 3	Yes	N/A
342CSS-3	Software Engineering	Yes	N/A
101BIOL-4	General Biology	Yes	N/A
235CSS-3	Theory of Computation	Yes	N/A
281CSS-3	Computer Graphics	Yes	N/A
361CSS-3	Artificial Intelligence	Yes	N/A
457CSS-3	Internet Technologies	Yes	N/A
380CSS-3	Fundamental of Database Systems	Yes	N/A
329CSS-3	Data Communication and Computer Networks	Yes	N/A
491CSS-4	Graduation Project 1	Yes	N/A
456CSS-3	Parallel and Distributed Systems	Yes	N/A
114ISL-2	Islamic Culture 4	Yes	N/A
328CSS-3	Human and Computer Interaction	Yes	N/A
474CSS-3	Algorithm Design and Analysis	Yes	N/A
492CSS-4	Graduation Project 2	Yes	N/A
345MATH-3	Operational Research	Yes	N/A
440CSS-3	Social, Ethical, and Professional Issues	Yes	N/A
429CSS-3	Computer Security	Yes	N/A
202ARAB-2	Arabic Writing	Yes	N/A

2. Students Evaluation of Program Quality

Evaluation Date: May 2020	Number of Participants:22
Students Feedback	Program Response
<p>When the exit survey was conducted successfully, we get the following conclusion</p> <p>Firstly, it is evident that 60% of students are much satisfied with supportive services. Secondly, only 46% of the students are satisfied with the learning resources that include the library, lecture halls,</p>	

computing facilities, and equipment for non-class activities.

Thirdly, it is evident that most of the students are satisfied with the professional preparation and educational practices adopted in the college, thus it helps them in building up their knowledge, interpersonal and communication skills.

Fourthly, it is evident that out of the 66 performance indicators of the SOs, the students are confident with all the 66 performance indicators (learning outcomes). The overall satisfaction rate is approximately 79.8%.

Strengths:

- The students are satisfied with the academic and professional advising received from the faculty members.
- Students are very much satisfied with the learning process of the CS program and they find the program is very beneficial for them.

When the e-learning survey was conducted successfully **we got the following conclusion:**

It is evident that 45.55% students are much satisfied (strongly agree/agree) with the E-Learning.

Strengths:

- The students are satisfied with the places of their Course components and easy to access
- Students are satisfied with The Blackboard system for their learning process

Areas for Improvement:

- The college library is established on the female campus, but the students did not use the books in the library.
- Lecture halls are equipped with the wireless projector
- Labs are installed with updated software but still there are issues with the computing facilities because of instability of the Wi-Fi services in the campus and connection with the wireless projectors and some of the labs still have old computers.

<p>Suggestions for improvement:</p> <ul style="list-style-type: none"> • The students should be motivated to use the books from the college library. • Seminars and workshops should be conducted in order to motivate the students to continue the learning process even after graduation. • Students should be given counseling regarding career and the job prospects in the related field. • The curriculum of the CS program should be updated with the modern programming languages and other courses based on the market needs such as data science and machine learning. • The Wi-Fi services in the college campus should be upgraded. • The Labs should be equipped with the computers with latest configuration and updated software settings. • Recommendation: • Training students to be professional users of the blackboard 	<ul style="list-style-type: none"> • The new CS study plan was approved by the Department and College Council updated to meet the market needs such as data science and machine learning. • E-learning admission presented Training workshop in using blackboard for students
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* Attach report on the student's evaluation of program quality

3. Other Evaluations

(e.g. Evaluations by independent reviewer, program advisory committee, and stakeholders (e.g., faculty members, alumni, and employers))

Evaluation method: Survey	Date:23-9-2020	Number of Participants :12
Summary of Evaluator Review		Program Response
Achievement Criteria	Overall Achievement in Percentage	
Program Educational Objectives (PEOs)	80.6%	
The theoretical and academic preparation of employee	91.67%	
The industrial and practical preparation of employee	91.67%	
Average of Overall Achievement	87.98%	

Strengths: <ul style="list-style-type: none"> The employees are satisfied with the theoretical and academic preparation of employee The employees are satisfied with industrial and practical preparation of employee Alumni: Alumni overall achievement according to PEOs for CS program 46%. Alumni overall achievement according to Curriculum for CS program 62%. Alumni overall achievement according to Overall Evaluation for of learning and teaching 62%	
Strengths: <ul style="list-style-type: none"> The alumni are satisfied with the learning and teaching of CS program The alumni are satisfied with of Curriculum for CS 	
Points for Improvements: <ul style="list-style-type: none"> To distribute and collect the responses between 90-100 % stakeholders 	
Suggestions for improvement <ul style="list-style-type: none"> To distribute and collect the responses between 90-100 % stakeholder. 	

* Attach independent reviewer's report and stakeholders' survey reports (if any)

4. Key Performance Indicators (KPIs)

List the results of the program key performance indicators (including the key performance indicators required by the National Center for Academic Accreditation and evaluation)

No	KPI Code	KPI	Actual Benchmark (2019-2020)	Target Benchmark	Internal Benchmark (2019-2020-IS Program)	Analysis	New Target Benchmark (2020-2021)
1	KPI-P-01	Percentage of achieved indicators of the program operational plan objectives	Male: 89.51% Female: 89.51% Overall: 89.51%	85%	88.92%	1. Achievement percentage shows that 83.33% of the committee's operational plan achieved the target benchmark. (i.e. average achievement of ten committees operational plan out of twelve committees achieved the target benchmark) 2. Achievement percentage of all indicators of library and	90%

						<p>periodicals committee's operational plan is 100%.</p> <p>3. Achievement percentage of all indicators of examinations committee's operational plan is 100%.</p> <p>4. Achievement percentage of all indicators of academic schedule committee's operational plan is 100%.</p> <p>5. Achievement percentage of all indicators of laboratories, devices and halls committee's operational plan is 96.42%. All indicators of operational plan achieved the target benchmark (i.e. 85%).</p>	
2	KPI-P-02	Students' Evaluation of quality of learning experience in the program	<p>Male: 69.75% \approx 3.5(on five-point scale)</p> <p>Female: 69.26% \approx 3.46(on five-point scale)</p> <p>Overall: 69.51% \approx 3.48(on a five-point scale)</p>	75% \approx 3.75 (on a five-point scale)	65% \approx 3.25 (on a five-point scale)	The exit survey was conducted for the final year students to analyze this KPI.	75% \approx 3.75 (on a five-point scale)
3	KPI-P-03	Students' evaluation of the quality of the courses	<p>Male: 81.77% \approx 4.09(on five-point scale)</p> <p>Female: 76.7% \approx 3.84(on a five-point scale)</p> <p>Overall: 79.24% \approx 3.96(on five-point scale)</p>	85% \approx 4.25(on five-point scale)	83.45% \approx 4.17 (on five-point scale)	The university adopts the good practice of getting the students' satisfaction level for their registered courses every semester.	80% \approx 4.0(on a five-point scale)
4	KPI-P-04	Completion rate	<p>Male: 28.57%</p> <p>Female: 93.8%</p> <p>Overall: 61.19%</p>	75%	50%	The overall percentage of students entering undergraduate programs who complete those programs in minimum time increased as compared to the previous year.	75%

5	KPI-P-05	First-year students retention rate	Male: 88% Female: 92% Overall: 90%	60%	87.46%	The overall percentage of students entering programs who complete the first year is high.	90%
6	KPI-P-06	Students' performance in the professional and/or national examinations	N/A	N/A	N/A	N/A	N/A
7	KPI-P-07	Graduates' employability and enrolment in postgraduate programs	Male: a) 38% b) 13% Female: a) 7% b) 0% Overall: a) 22.5% b) 6.5%	a)30% b)10%	a)14.29% b) 0%	a) The computer science programs graduates are working in both the government and the private sectors. b) There was an improvement in this indicator as compared to the previous year which was 0%	a) 30% b) 10%
8	KPI-P-08	The average number of students in the class	Male: 11 Female:13 Overall:12	12	11	The average number of students in the class has increased in comparison to the previous year.	15
9	KPI-P-09	Employers' evaluation of the program graduate's proficiency	Male: 88% Female: 88% Overall: 88%	85%	87.98%	Employers' overall evaluation considering all the criteria of the survey of the program graduates' proficiency is very good.	90%
10	KPI-P-10	Students' satisfaction with the offered services	Male: 80.63% (4.03 on a 5-point scale) Female: 82.63% (4.13 on a 5-point scale) Overall: 81.5% (4.08 on a 5-point scale)	70% (3.5 on a 5-point scale)	81% (4 on a 5-point scale)	Students were comfortable and satisfied with the services offered by the CS program especially (academic advising) provided to them throughout their association with the academic advisors and awareness of rules and regulations. Most of the services are generally got a high percentage of students' satisfaction.	85% (4.25 on a 5-point scale)
11	KPI-P-11	Ratio of students to	Male: 1:6	1:20	1:4	The CS program has an adequate number of faculty members.	1:20

		teaching staff	Female: 1:15 Overall: 1:10				
12	KPI-P-12	Percentage of teaching staff distribution	Male: 67% Female: 13% Overall: 40%	70%	50%	Compared to the previous year, the number of PhD holders in the faculty has increased.	70%
13	KPI-P-13	The proportion of teaching staff leaving the program	Male: 13% Female: 0% Overall: 7%	≤ 10%	10%	Compared to the previous year, the number of staff leaving the program is less.	≤10%
14	KPI-P-14	Percentage of publications of faculty members	Male: 66.67% Female: 13% Overall: 40%	40%	70%	Compared to the previous year, the percentage of research publications from the faculty members in the female section increased.	50%
15	KPI-P-15	Rate of published research per faculty member	Male: 2:1 Female: 2:5 Overall: 1:1	2:1	2:1	Female faculty members published a few papers which is significantly more than last year which was zero.	2:1
16	KPI-P-16	Citations rate in refereed journals per faculty member	Male: 1:11.5 Female: 15:0 Overall: 1:5.7	1:4	1:5.3	There are more citations referred from publications from the faculty members in the male section	1:6
17	KPI-P-17	The satisfaction of beneficiaries with the learning resources	Male: 60% = 3 (on 5-point scale) Female: 51.78% = 2.59 (on 5-point scale) Overall: 55.89% = 2.79 (on 5-point scale)	70% = 3.5 (on 5-point scale)	54.04% = 2.7 (on 5-point scale)	Need to improve the learning resources	70% = (3.5 on 5-point scale)

18	KPI-P-1-1 (Additional KPI)	The proportion of full-time teaching and other staff actively engaged in community service activities.	Male: 1:3 Female: 1:3 Overall: 1:3	1:2	2:1	The number of faculty members in community activities decreased compared to the previous year due to COVID-19	1:2
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Comments on the Program KPIs and Benchmarks results:

The CS Program adopted 16 KPIs that are applicable out of 17 KPIs as stated by NCAAA. The CS program has also adopted 1 additional KPI related to the community service that falls under standard 2. Hence the CS Program has 17 KPIs to evaluate its performance.

The table above shows that out of 17 KPIs adopted by CS Program, there are 9 KPIs whose target benchmark is achieved and thus making the overall achievement of the KPI by the program to 53%.

The KPI Analysis of the NCAAA standards that are used to assess the performance of the program is performed. According to the KPI evaluation, the strengths, weakness and the priorities for improvement have been framed out.

Strengths:

- ✓ Most of the tasks in the CS operational plan has 100% achievement
- ✓ The overall percentage of students entering programs who complete the first year is high.
- ✓ Employers' overall evaluation considering all the criteria of the survey of the program graduates proficiency is very good.
- ✓ The students were comfortable and satisfied with the various services offered by the program especially academic advising provided to them.

Weakness:

- ✓ The students' satisfaction level is less in terms of supportive learning resources.
- ✓ The students' satisfaction level is less in terms of the quality of learning experience in the program.
- ✓ The graduates' employability rate and the enrolment rate in the postgraduate programs are very less.
- ✓ The completion rate of the students who enter the program and complete the program in minimum time is less.
- ✓ There are more Non-Ph.D holders than the PhD holders in the faculty section of the department.
- ✓ The publication rate of research by the faculty members should be more.
- ✓ The number of community service contributions from the faculty members should be more.

Priorities for improvement:

- ✓ Improve supportive learning resources.
- ✓ Industrial Visits and Field Trips should be organized for the students. Career Counselling should be provided for the students
- ✓ Arrange career days and inviting national and multinational companies so that students get benefitted for their future career
- ✓ Identifying the difficulties by conducting meetings and seminars with the students in each level. Finding the reasons for students' failing, dropping and withdrawing of their courses by meeting, seminars, and academic advising.
- ✓ Increase the percentage of Professors and Associate Professors by recruiting them. Encourage and support teaching staff to complete their higher studies.
- ✓ Encourage faculty members to publish more research papers. Support teaching staff to attend scientific conferences.
- ✓ Motivate the faculty members to indulge in projects that can address the community needs in all sectors.

5. Analysis of Program Evaluation

(Including strengths, Areas for Improvement: and priorities for improvement)

Strengths :

- ✓ The operational plan of the various working committees in the program has been well executed and hence contributes to achieving the program goals.
- ✓ Students' Course Survey is conducted and evaluated for all the courses that are delivered in the CS program.
- ✓ Surveys such as employer's survey, exit survey etc. are conducted successfully
- ✓ Orientation Programs are conducted for the new students and the faculty members

Areas for Improvement:

- ✓ Motivate the faculty members especially in the female section to publish papers and have more research contributions.
- ✓ Establish educational and research partnerships with other institutions and organizations to promote research contributions among faculty members.
- ✓ Encourage and Support teaching staff to attend scientific conferences within or outside Saudi Arabia.
- ✓ Make regular contact with advisory board members, schools, industry and alumni to get the needs of Najran region to develop community activities.

Priorities for Improvement:

- ✓ Approval of the new curriculum study plan that has been framed should be obtained so that the new plan can be adopted in the next year.
- ✓ Establish contacts and partnerships with the industries and IT companies so that the CS graduates get more employment opportunities.

- ✓ Need to increase the number of seminars and workshops for coming years that focus toward community needs.
- ✓ Encourage faculty members to publish more research papers.
- ✓ Improve supportive learning resources.
- ✓ Program administrators should follow and monitor the whole teaching and learning process of the program during the semester.

G. Difficulties and Challenges Faced Program Management

Difficulties and Challenges	Implications on the Program	Actions Taken
The number of students is less than it should be.	The evaluation is more likely to be not accurate with a few numbers of students and a waste of resources.	An event to be held at the Deanship of Preparatory Year in Najran University. The goal is to spread awareness among the students about the programs provided at the College of Computer Sciences and Information Systems. It is also to get them more interested in these programs.
Security Situation in Najran is not settled through.	Absence of the students and the teaching faculties are not settled.	Working with students and teaching faculties to lessen the damage e.g. E-learning.
Students absence is very high in the department.	Not understanding lectures that they did not attend, which is reflected in their grades.	Contact by the academic advisor
Resources are not fully supplied (laptop, printers, ink cartridge, scanners...etc.).	The instructors are wasting more time in finding ways to overcome this issue.	Request resources from higher management.
The number of teaching staff in the department is very low, especially the female campus.	There is an overload of quality work for the people in this department.	Request to hire more people.
COVID-19 Pandemic	Attendance of campus lectures	E-Learning

*Internal and external difficulties and challenges

H. Program Improvement Plan

No.	Priorities for Improvement	Actions	Action Responsibility	Date		Achievement Indicators	Target Benchmark
				Start	End		
1	Design plans, policies and guideline for online teaching and exams with proper evaluation and assessment methods during the COVID19 pandemic	Need to cooperate with the university	Head of Department	Beginning of the semester	Before the end of the academic semester	Ensure that the online resources are available for students to attend online classes remotely during the COVID19 pandemic	90%
2	Improve the level of computer application skills of our students by online workshops supported by student activity unit	Need to cooperate with activity unit	Head of Department		Before the end of the academic semester	Activity unit should arrange seminar, workshop to improve computer skills of students	80%
3	Improve the level of English language proficiency of our students by online workshops supported by student activity unit	Need to cooperate with activity unit	Head of Department		Before the end of the academic semester	Activity unit should arrange seminar, workshop to improve English language proficiency of students	80%

4	Ask students to see their academic advisors regularly online.	Organizing orientation seminar that should include the mentioned issues	Head of Department, Quality unit, and Academic advising unit	At the beginning of the semester		Arranged a seminar	At least 80% of students should attend
5	Remind students of the importance of graduating on time	Academic advisor and students' interaction for the same must be monitored	Academic advisor	During the semester		Students are completing the prerequisite courses for project 1 and project 2 in a timely manner. Students are registering project 1 and project 2 in due time	100%
6	Timeworn submission of Course Reports so that they can be evaluated and discussed in the department council	Remind and discuss with faculty	Faculty		End of semester	Faculty members involve preparing the courses report on a regular basis; they should not wait for the final moment of submission	100%

7	Overall course reports being discussed in the department council meeting for actions/implementation of small changes to be implemented at the start of the semester.	Need to form a dedicated committee for the same	Head of Department and Quality unit		End of semester	The committee must start working just after finishing the final exam to collect, evaluate and prepare the overall course report	7
8	Support and encourage the staff members by offering software and hardware that they need to complete their scientific research and then introduce them as workshops.	Need to raise the issue in College Council	Head of Department		Before the end of the academic semester	Dedicated lab with all supporting hardware and software for research	8
9	The rate of participation/ distributing the online survey/questionnaire and collecting the responses from the stakeholders should be between 90%-100%	Conducting survey in a timely manner	Quality unit		Before the end of the academic semester	Most of the stakeholders participate in the survey	9

10	Photocopy machine, ink cartridge of printers, papers, pens, and markers are to be available and must be in operational condition when required	Need to raise the issue in higher management about the limitation of necessary resources	Head of Department	Beginning of the semester	Before the end of the academic semester	Faculty members have enough access for photocopying for printing and they have no objection about it	80%
11	Blackboard trainings to newly joined faculty members at male and female campus (E-Learning coordinators)	Remind and discuss with faculty and E-Learning deanship	Head of Department and E-Learning unit	Beginning of the semester		Successful at using Blackboard in teaching and online exams	100%
12	Orientation program to students as well as faculty members	Remind and discuss with faculty	HoD Academic Advising Unit	Beginning of the semester		Faculty members can work properly on the quality stuff	90%

I. Report Approving Authority

Council / Committee	CS DEPARTMENT COUNCIL
Reference No.	SESSION NO. 6
Date	6/10/2020

J. Attachments:

- A separate cohort analysis report for male and female sections and each branch
- A report on the program learning outcomes assessment results for male and female sections and for each branch (if any)
- A report on the student's evaluation of program quality
- Independent reviewer's report and other survey reports (if any)