



Annual Program Report

Computer Science Program
2019/2020

Annual Program Report

| | |
|---------------------------------------|----------------------------|
| Program Name: | Computer Science |
| Qualification Level: | Bachelor |
| Department: | Computer Science |
| College: | College of Science |
| Institution: | Northern Border University |
| Academic Year: | 2019/2020 |
| Main Location: | College of Science – Arar |
| Branches offering the Program: | NA |

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A. Implementation of Previous Action Plan

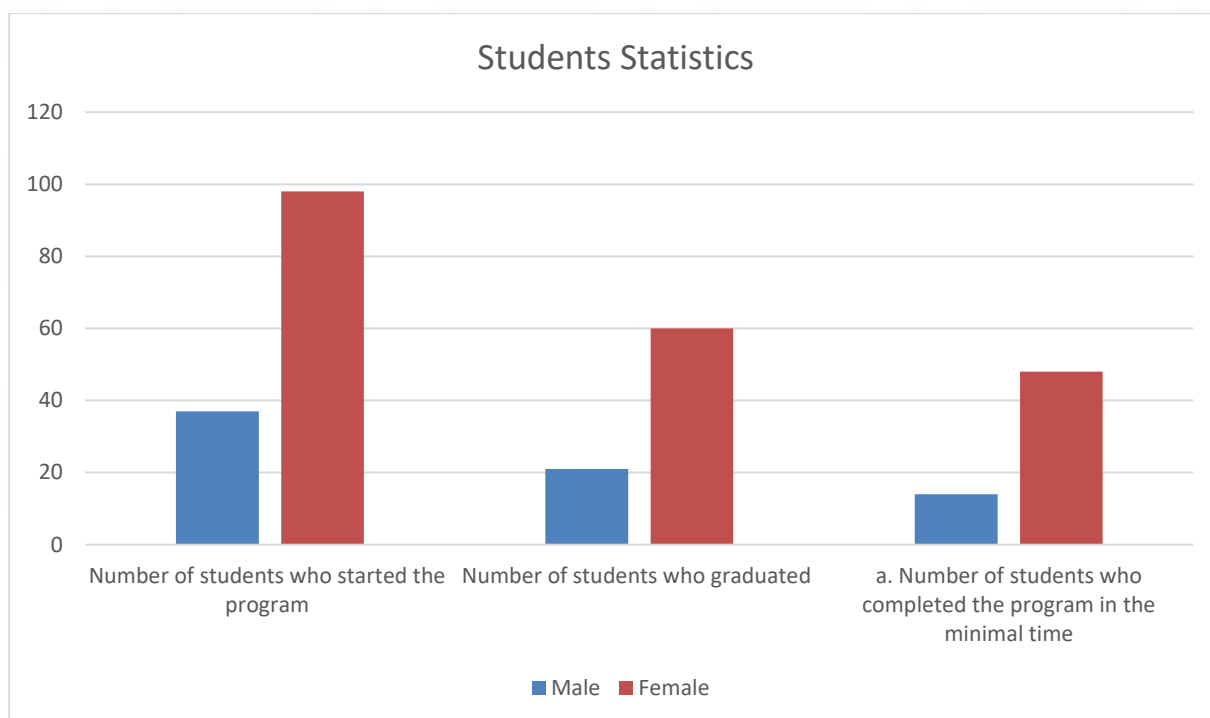
Considering the recommendations of previous year annual report, list the planned actions and their status.

| Planned Actions | Responsibility of Action | Planned Completion Date | Level of Completion | | If Not Completed | |
|---------------------------------|--------------------------|-------------------------|---------------------|---------------|------------------|------------------|
| | | | Completed | Not Completed | Reasons | Proposed Actions |
| This is the first annual Report | NA | NA | NA | NA | NA | NA |

B. Program Statistics

1. Students Statistics (in the year concerned)

| No. | | Male | Female | Results |
|---|--|------|--------|---------|
| 1 | Number of students who started the program | 37 | 98 | 135 |
| 2 | Number of students who graduated | 21 | 60 | 81 |
| 3 | Number of students who completed major tracks within the program (if applicable) | NA | NA | NA |
| 4 | a. Number of students who completed the program in the minimal time | 14 | 48 | 62 |
| 5 | a. Percentage of students who completed the program in the minimal time (Completion rate) | 67% | 80% | 77% |
| 6 | Number of students who completed an intermediate award specified as an early exit point (if any) | NA | NA | NA |
| 7 | Percentage of students who completed an intermediate award specified as an early exit point (if any) | NA | NA | NA |
| Comment on any special or unusual factors that might have affected the completion rates: <ul style="list-style-type: none"> - The Percentage of students who completed the program in the minimal time is satisfied. - It is recommended to investigate the reasons faced the student who couldn't complete in time. | | | | |



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 (2016/2017) | M | 21 | 1 | 20 | 0 | 20 | 100% |
| | F | 61 | 3 | 58 | 0 | 58 | 100% |
| | Total | 82 | 4 | 78 | 0 | 78 | 100% |
| Two Years Ago (2017/2018) | M | 20 | 0 | 20 | 0 | 20 | 100% |
| | F | 58 | 1 | 57 | 0 | 57 | 100% |
| | Total | 78 | 1 | 77 | 0 | 77 | 100% |
| Last Year (2018/2019) | M | 20 | 0 | 20 | 1 | 19 | 95% |
| | F | 57 | 2 | 55 | 1 | 51 | 93% |
| | Total | 77 | 2 | 77 | 2 | 75 | 97% |
| Current Year (2019/2020) | M | 19 | 0 | 19 | 0 | 19 | 100% |
| | F | 51 | 0 | 51 | 0 | 51 | 100% |
| | Total | 75 | 0 | 75 | 0 | 75 | 100% |

Comments on the results:

- The enrolment of student in the program is increasing every year, this required more staff, class rooms and labs.

3. Analysis of Program Statistics

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

| Strengths : |
|---|
| <ul style="list-style-type: none"> - Learning Resources and Facilities are available and variate like: Laboratory, classroom, e-learning, - The instructors were available to assist during office hours and in every free time - Acceptable ratio of faculty to the number of students. |

| |
|--|
| <ul style="list-style-type: none"> - Good organizational climate and supportive academic environment. - High integrity, fairness, and equality in academic and administrative practices of the program. - Powerful electronics tools (Blackboard) are used for exchanging information's and instructions between program staff and students. |
| Areas for Improvement: <ul style="list-style-type: none"> - Improve the program plan - Improve the courses specification and update the references - The department needs to address the issue of students failing in various courses and adopt measures to improve the overall teaching process such that a student entering the program has better chances of achieving the learning outcomes in the minimum time. - There is a need to develop a systematic way to collect and evaluate feedback from students |
| Priorities for Improvement: <ul style="list-style-type: none"> - Planning to provide more counselling to students to complete the program in time. - Follow up of student's performance and results in the reformed curriculum with comparisons of results with previous one. |

C. Program Learning Outcomes Assessment

1. Program Learning Outcomes Assessment Results.

| # | Program Learning Outcomes | Assessment Methods (Direct and Indirect) | | Performance Target | Results |
|------------------|---|---|--|--------------------|---------|
| Knowledge | | | | | |
| K1 | Demonstrate knowledge of mathematical, statistical, and relevant sciences and the ability to use them in the field of Computing. | Direct | Indirect | 70% | |
| K2 | Demonstrate detailed knowledge and understanding of the core areas of Computing concepts and principles to different Computing functions and the underlying principles and theories associated with it. | 1.Oral test. 2.Written test 3.Observation sheet. 4.Homework assessment. 5.Peer assessment. 6.Assessment of information | 1.Student`s program evaluation survey. 2.Student`s course evaluation survey. 3-Academic advising feedback. | | |
| K3 | Demonstrate technical, analytical, and creative skills in the Computing discipline that are fundamental to problem solving and decision-making within a variety of organizational settings and real-world scenario. | 7. summarization 8.Portfolios 9.Online tests | | | |

| Skill | | | | | |
|-------|--|---|--|--|-----|
| S1 | Apply computer science theory and software development fundamentals to produce computing-based solutions. | | | | |
| S2 | Solve relatively complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions. | 1. Practical tests 2. Evaluating practical activities in terms of procedures and importance. 3. Applied projects 4. Observation. | | 1-Academic advising feedback. | 70% |
| S3 | Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline. | 5. Reports 6. Written test | | 2-Student grades in graduation 3-Statistical data | |

| Competence | | | | | |
|------------|---|---|--|--|-----|
| C1 | Communicate effectively in a variety of professional contexts. | | | | |
| C2 | Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline. | 1. Projects. 2. Collective research. 3. Reports. 4. Presentations. | | 1-Student grades in graduation 2-Statistical data | 70% |
| C3 | Show professional responsibilities and make informed judgments in computing practice based on legal and ethical principles. | 5. Observation and follow-up. | | | |

Comments on the Program Learning Outcome Assessment results.

There is no assessment plan to measure the Program Learning Outcomes Assessments for the academic year 2019/2020.

The Action plan for the next academic year 2020-2021 will be:

Creating sub- Quality assurance committee in charge of PLOs assessment plan.

The committee will be responsible of:

1. Making clear program assessment plan for the Course learning outcomes then for the program learning outcomes based on appropriate assessment tools.
2. Collect clear evidence for all the PLOs and CLOs assessment tools and update the evidence in each semester.
3. Make schedule for the assessment plan: each CLO and each PLO will be measured at each time in the semester and by which assessment tool.
4. Writing PLOs assessment report.

* 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)

| |
|---|
| Strengths: NA |
| Areas for Improvement: The program Quality assurance committee must focus more on Program Key performance indicators for each program learning outcome. |
| Priorities for Improvement: Creating sub- Quality assurance committee responsible of PLOs assessment plan |

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 |
|---|---|--|---|
| First Semester | | | |
| All the courses were taught according to the plan | | | |
| Second Semester | | | |
| Introduction to Programming (1105 211) | -The practical part of the Control Structure. -The practical part of the Function. | Because of Covid19 lockdown which the education mode has been changed to online mode. | Next semester if the University will reopen, the students can get remedy practical labs to cover whatever they miss during this semester. |
| Data Structures (1105-241) | -The practical part for some subjects in the course | Students did not practice the practical part for some subjects as they should because of Covid19 lockdown which most of the students are not able to practice. | Next semester if the University will reopen, the students can get remedy practical labs (in the course 1105-314) to cover whatever they miss during this semester |
| Artificial Intelligence (1105-333) | -The theory part has been covered totally. - There were no practical class due to Covid-19 issues. - Software is not available for students | S1, S2 not achieved partially | None |
| Pattern Recognition (1105487) | Sequential Pattern Recognition | - The theory part has been covered totally. - students didn't do the practical by their self because of Covid19 lockdown which most of the students are not able to practice. | The practical part was handled by teachers where we showed the students how to implement the code only using blackboard by sharing the teachers' desktop |
| Analysis & Design of Algorithms (1105314) | -The practical part for some topics | -Due to Covid19 lockdown -Most of students don't have personnel computer to practice at home. | -Students can get access to laboratory at their free time to practice the missing parts. |
| Local Area Networks (1105371) | -Labs/ It influenced practical applications of theoretical concepts | Covid-19 | Only Discuss the practical application without applying |
| Simulation and modeling (1105481) | -The practical part for some topics | The theory part has been covered totally. Around 40% of the practical part was handled by teachers where we showed the students how to implement the code | |

| | | | |
|--|--|---|---|
| | | only using blackboard by sharing the teachers' desktop, but the students didn't do the practical by their self because of Covid19 lockdown which most of the students are not able to practice. | Next semester if the University will reopen, the students can get remedy practical labs to cover whatever they miss during this semester. |
|--|--|---|---|

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 |
|-----------------------------------|--|---|--|
| First Semester | | | |
| Graduation Project (1105492) | Almost all grades are in the range of A+ | The nature of the course | None |
| Simulation and Modeling (1105481) | Almost all grades are in the range of A+ | The number of students is limited to 6 in the section | Contact the course Coordinator |
| Second Semester | | | |
| Field Training (1105491) | All grades are IC | because of Covid19 lockdown | Next semester if the University will reopen, the students can get remedy |
| Graduation Project (1105492) | Almost all grades are in the range of A+ | The nature of the course | None |
| Simulation and Modeling (1105481) | Almost all grades are in the range of A+ | because of Covid19 lockdown exams was taken at home | None |
| O.O.P (1105-313) | Almost all grades are in the range of A+ | because of Covid19 lockdown exams was taken at home | None |

a. Analyze the completion rates, grade distributions by section.

Tables 1,2,3,4,5,6 show that most students have passed their courses registered at the end of each semester for the academic year 2019/2020.

All the results are normally distributed except the courses shown in the above (Courses with Variations).

Table 1: Grade distribution in First Semester 2019/2020(Male Section)

| Course code | W | DN | F | D | D+ | C | C+ | B | B+ | A | A+ | Total |
|-------------|---|----|---|---|----|---|----|---|----|----|----|-------|
| 1105-101 | 6 | 6 | | 2 | 3 | 4 | 8 | 3 | 3 | 5 | 3 | 43 |
| 1105-102 | | 4 | 3 | | | 3 | 3 | 7 | 10 | 17 | 35 | 82 |
| 1105-211 | 1 | | 1 | 8 | | 3 | 1 | 2 | 2 | | | 18 |
| 1105-212 | | | | 1 | | 1 | 1 | 4 | 1 | 3 | 5 | 16 |
| 1105-221 | | | | 2 | 2 | 2 | 2 | 2 | 2 | | | 12 |
| 1105-222 | 1 | | 1 | 1 | | 6 | 1 | 2 | 2 | 4 | 2 | 20 |
| 1105-231 | 1 | | 1 | | 1 | 3 | 4 | 6 | 3 | 5 | | 24 |
| 1105-232 | | | 1 | | 1 | 1 | 2 | 2 | | 3 | 4 | 14 |
| 1105-241 | | | | 1 | 3 | | | 2 | 4 | 6 | 2 | 18 |
| 1105-281 | | | | 2 | 1 | 3 | 5 | 1 | 1 | | | 13 |
| 1105-313 | | | | | 2 | 1 | 4 | 4 | 2 | 3 | 4 | 20 |

| Course code | W | DN | F | D | D+ | C | C+ | B | B+ | A | A+ | Total |
|--------------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| 1105-314 | | | 1 | 1 | 3 | 1 | 4 | 1 | 3 | 2 | | 16 |
| 1105-315 | | | 1 | 3 | 2 | 1 | | 1 | | | | 8 |
| 1105-323 | | | 1 | 3 | 2 | 6 | 4 | 1 | | 1 | 3 | 21 |
| 1105-333 | | 1 | 1 | 2 | 4 | 1 | | 1 | 1 | 1 | | 12 |
| 1105-342 | | | 1 | 1 | | 3 | 4 | 4 | 1 | | 5 | 19 |
| 1105-351 | | | 1 | | 2 | 2 | 2 | | 1 | | | 8 |
| 1105-361 | | | | | 2 | 3 | 2 | 2 | | | | 9 |
| 1105-371 | | | 3 | 3 | 1 | 1 | | 2 | | | | 10 |
| 1105-443 | | | | | | 1 | | | | | | 1 |
| 1105-462 | | | 1 | 5 | | 2 | 2 | 1 | | | | 11 |
| 1105-463 | | | | 6 | 5 | 1 | | 1 | | | | 13 |
| 1105-472 | | | | | | 1 | 2 | 2 | | 1 | | 6 |
| 1105-473 | | | | | 7 | 3 | 1 | 3 | | | | 14 |
| 1105-481 | | | | | 1 | 1 | 5 | 1 | | | | 8 |
| 1105-486 | | | | 2 | 2 | 5 | 2 | | | | | 11 |
| 1105-487 | | | 1 | | | 4 | 1 | 5 | | 2 | | 13 |
| 1105-492 | | | | | | 1 | 2 | 3 | 3 | 3 | 2 | 14 |
| Total | 9 | 11 | 18 | 43 | 44 | 64 | 62 | 63 | 39 | 56 | 65 | 474 |

Table 2: Grade distribution in First Semester 2019/2020 (Female Section 1)

| Course Code | W | DN | F | D | D+ | C | C+ | B | B+ | A | A+ | Total |
|-------------|---|----|---|----|----|----|----|----|----|----|----|-------|
| 1105-101 | 4 | 5 | 5 | 22 | 11 | 16 | 6 | 7 | 2 | 12 | 9 | 99 |
| 1105-102 | | 1 | | 1 | 3 | 5 | 10 | 23 | 30 | 26 | 31 | 130 |
| 1105-211 | 3 | | 1 | 6 | 2 | 2 | 4 | 1 | | 1 | 1 | 21 |
| 1105-212 | 1 | | | | 1 | 3 | 4 | 4 | 1 | 7 | 8 | 29 |
| 1105-221 | 3 | | 2 | 10 | 6 | 4 | | 3 | 1 | | | 29 |
| 1105-222 | 1 | | 1 | 4 | 4 | 3 | 2 | 2 | 5 | 3 | 4 | 29 |
| 1105-231 | 3 | | | 5 | 3 | 3 | 2 | 2 | | 1 | 1 | 20 |
| 1105-232 | 1 | | 2 | 6 | 4 | 2 | 7 | 4 | 3 | 3 | 1 | 33 |
| 1105-241 | 1 | | | 7 | 3 | 1 | 5 | 6 | 5 | 2 | 1 | 31 |
| 1105-281 | 2 | | 1 | 2 | 2 | 2 | 3 | 1 | 2 | | | 15 |
| 1105-313 | | | | 2 | 2 | 2 | 3 | 3 | | 2 | 3 | 17 |
| 1105-314 | | | | 8 | 4 | 1 | 1 | 1 | | | | 15 |
| 1105-315 | | | | | | 1 | 6 | 4 | 1 | 5 | 6 | 23 |
| 1105-323 | | | | 1 | 2 | 2 | 4 | 2 | 1 | 1 | | 13 |
| 1105-333 | | | 1 | 3 | 2 | 3 | 4 | | 4 | 2 | 1 | 20 |
| 1105-342 | | | | 1 | 2 | 1 | 1 | 5 | 2 | 2 | 1 | 15 |
| 1105-351 | | | | | | 4 | 1 | 3 | 6 | 4 | 1 | 19 |
| 1105-361 | | | | 1 | 3 | 1 | 1 | 3 | 6 | 3 | 3 | 21 |
| 1105-371 | | | | 2 | 1 | | 2 | 8 | 4 | 2 | 1 | 20 |
| 1105-443 | | | | 6 | 5 | 1 | | | | 1 | | 13 |
| 1105-462 | | | | 2 | 4 | 2 | 1 | 2 | 1 | | 1 | 13 |
| 1105-463 | | | | 2 | | 1 | 2 | 2 | 7 | 8 | 7 | 29 |
| 1105-472 | | | | | | 2 | 2 | 5 | | 5 | | 14 |

| Course Code | W | DN | F | D | D+ | C | C+ | B | B+ | A | A+ | Total |
|--------------|-----------|----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|-----------|------------|
| 1105-473 | | | | 1 | | 1 | 3 | 5 | 11 | 4 | 4 | 29 |
| 1105-481 | | | | | | 5 | 2 | 1 | 1 | 1 | | 10 |
| 1105-486 | | | | | | 3 | 5 | 8 | 7 | 6 | 2 | 31 |
| 1105-488 | | | | 3 | 2 | | 1 | 5 | 9 | 7 | 4 | 31 |
| 1105-492 | | | | | | | | 5 | 5 | 10 | 9 | 29 |
| Total | 19 | 6 | 13 | 95 | 66 | 71 | 82 | 115 | 114 | 118 | 99 | 798 |

Table 3: Grade distribution in First Semester 2019/2020 (Female Section 2)

| Course code | W | DN | F | D | D+ | C | C+ | B | B+ | A | A+ | Total |
|--------------|---|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|------------|
| 1105-101 | | 1 | 1 | | | | 3 | | | | | 5 |
| 1105-211 | | | | | | 1 | | | | | | 1 |
| 1105-212 | | | | | | | | | 6 | 5 | | 11 |
| 1105-221 | | | | | | | | 1 | | | | 1 |
| 1105-222 | | | | | | | 2 | 3 | 3 | 3 | | 11 |
| 1105-231 | | | | | | 1 | | | | | | 1 |
| 1105-232 | | | | | | | | 2 | 4 | 3 | 3 | 12 |
| 1105-241 | | | | | | | | | 1 | 5 | 5 | 11 |
| 1105-281 | | | | | | 1 | | | | | | 1 |
| 1105-313 | | | | | | | | | 1 | | | 1 |
| 1105-314 | | | | | | | | 1 | | | | 1 |
| 1105-315 | | | | | | 2 | 3 | 1 | 1 | 5 | 2 | 14 |
| 1105-323 | | | | | | | | 1 | | | | 1 |
| 1105-333 | | | | 1 | | | 1 | | 1 | | | 3 |
| 1105-342 | | | | | | | | 1 | | | | 1 |
| 1105-351 | | | | | | | 2 | 2 | 2 | 3 | 5 | 14 |
| 1105-361 | | | | | | | | 2 | 2 | 5 | 5 | 14 |
| 1105-371 | | | | | | | 2 | 4 | | 3 | 5 | 14 |
| 1105-443 | | | | | | | 1 | 2 | 2 | 8 | 3 | 16 |
| 1105-462 | | | | 1 | 2 | 3 | 2 | 4 | 1 | 2 | | 15 |
| 1105-463 | | | | | | | | | 1 | 3 | | 4 |
| 1105-472 | | | | | | | | 1 | | 3 | 1 | 5 |
| 1105-473 | | | | | | | | | | 1 | 3 | 4 |
| 1105-481 | | | | | | | | | 1 | | 5 | 6 |
| 1105-486 | | | | | | | | | | 3 | 1 | 4 |
| 1105-487 | | | | | | 1 | 1 | 1 | 2 | 1 | | 6 |
| 1105-492 | | | | | | | | | | 4 | | 4 |
| Total | | 1 | 1 | 2 | 2 | 9 | 17 | 26 | 28 | 57 | 38 | 181 |

Table 4: Grade distribution in Second Semester 2019/2020 (Male Section)

| Course code | W | NF | NP | IC | D | D+ | C | C+ | B | B+ | A | A+ | Total |
|-------------|---|----|----|----|---|----|---|----|---|----|----|----|-------|
| 1105-101 | 6 | 11 | 11 | | 1 | 1 | 5 | 5 | 5 | 12 | 15 | 13 | 85 |
| 1105-211 | | 2 | 7 | | | 2 | 2 | 5 | 3 | 1 | 2 | 1 | 25 |
| 1105-212 | | | | | | | | | 1 | | 1 | 11 | 13 |
| 1105-221 | | 1 | 7 | | | 1 | 5 | 7 | 2 | 1 | 1 | | 25 |

| Course code | W | NF | NP | IC | D | D+ | C | C+ | B | B+ | A | A+ | Total |
|--------------|-----------|-----------|-----------|----|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| 1105-222 | | | | | | | 3 | 1 | 3 | 2 | 2 | | 11 |
| 1105-231 | | 1 | 6 | | | 1 | 1 | 3 | 11 | 3 | 1 | | 27 |
| 1105-232 | 1 | | | | | | | 2 | 4 | 5 | 1 | 2 | 15 |
| 1105-241 | | 1 | 1 | | | | 2 | 3 | 4 | | 2 | | 13 |
| 1105-281 | | 1 | 4 | | | | 1 | 3 | 5 | 5 | 2 | 3 | 24 |
| 1105-313 | | | | | | | | | | | 1 | 15 | 16 |
| 1105-314 | | | 3 | | | | 2 | 3 | 4 | 5 | 2 | | 19 |
| 1105-315 | | 1 | | | | | | 1 | 7 | 4 | 2 | 3 | 18 |
| 1105-323 | | | 3 | | | | 1 | 2 | 3 | 3 | 5 | 2 | 19 |
| 1105-333 | 1 | | 2 | | | | | 2 | 6 | 3 | 5 | 6 | 25 |
| 1105-342 | | | 3 | | | | 2 | 1 | 3 | 1 | 2 | 5 | 17 |
| 1105-351 | | | | | | | | | 3 | 7 | 4 | 3 | 17 |
| 1105-361 | | | 7 | | | | | 6 | 3 | 1 | 2 | | 19 |
| 1105-371 | | | 1 | | | | | | 6 | 9 | 5 | 2 | 23 |
| 1105-443 | 1 | 0 | 7 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 11 |
| 1105-462 | | | 1 | | | | | | 2 | | 4 | 3 | 10 |
| 1105-463 | | | 1 | | | | | | | 2 | 5 | | 8 |
| 1105-472 | | | | | | | 2 | 2 | 1 | 1 | 1 | | 7 |
| 1105-473 | | | 2 | | | | 1 | 2 | 1 | | | | 6 |
| 1105-481 | | | | | | | | | 2 | 2 | 1 | 2 | 7 |
| 1105-486 | | | | | | | | | | 1 | 2 | 1 | 4 |
| 1105-487 | 1 | | 2 | | | | 2 | 1 | 1 | 1 | | | 8 |
| 1105-492 | | | | | | | | | | | 2 | 4 | 6 |
| Total | 10 | 18 | 68 | | 1 | 5 | 30 | 51 | 80 | 69 | 70 | 76 | 478 |

Table 5: Grade distribution in Second Semester 2019/2020 (Female Section 1)

| Course code | W | NP | NF | IC | D | D+ | C | C+ | B | B+ | A | A+ | Total |
|-------------|---|----|----|----|---|----|---|----|----|----|----|----|-------|
| 1105-101 | 7 | 9 | 2 | | | 1 | 2 | 7 | 15 | 39 | 25 | 9 | 116 |
| 1105-211 | 1 | 18 | 8 | | | 2 | 4 | 5 | 5 | 6 | 1 | 10 | 60 |
| 1105-212 | | | | | | | | | | 3 | 8 | 5 | 16 |
| 1105-221 | 1 | 3 | 2 | | | | | 5 | 8 | 16 | 15 | 11 | 61 |
| 1105-222 | | 1 | | | | 1 | | | 1 | 7 | 8 | 5 | 23 |
| 1105-231 | 1 | 11 | 2 | | | 1 | 1 | 4 | 9 | 15 | 7 | 10 | 61 |
| 1105-232 | | | | | | | 1 | | 7 | 4 | 3 | | 15 |
| 1105-241 | | 1 | | | 1 | 1 | | 7 | 2 | 1 | | | 13 |
| 1105-281 | 1 | 11 | 1 | | | | 2 | 7 | 8 | 17 | 7 | 7 | 61 |
| 1105-313 | | 2 | 1 | | | | | 1 | | 3 | 9 | 13 | 29 |
| 1105-314 | | 11 | | | | | 4 | 4 | 6 | 3 | 1 | | 29 |
| 1105-315 | | 1 | | | | 1 | 6 | 1 | | | 3 | | 12 |
| 1105-323 | | 4 | | | | | | 1 | 3 | 2 | 8 | 7 | 25 |
| 1105-333 | | | | | | | | 1 | 3 | 5 | 2 | 5 | 16 |
| 1105-342 | | 4 | 2 | | | 1 | 1 | 2 | 4 | 3 | 7 | 6 | 30 |
| 1105-351 | | | | | | | | | | 7 | 7 | 6 | 20 |
| 1105-361 | | 4 | | | | 1 | 1 | | 1 | 1 | 1 | 1 | 10 |
| 1105-371 | | | | | | | | | 1 | 5 | 4 | 3 | 13 |

| Course code | W | NP | NF | IC | D | D+ | C | C+ | B | B+ | A | A+ | Total |
|--------------|-----------|-----------|-----------|----|----------|----------|-----------|-----------|-----------|------------|------------|------------|------------|
| 1105-443 | 1 | 3 | | | | | | 3 | 3 | 2 | 2 | 4 | 18 |
| 1105-462 | | | | | | | | | | 1 | 9 | 12 | 22 |
| 1105-463 | | | | | | | | | 2 | 3 | 3 | 2 | 10 |
| 1105-472 | | 2 | | | | | | | | 13 | 3 | 2 | 20 |
| 1105-473 | | 4 | | | | | 4 | 1 | 1 | | | | 10 |
| 1105-481 | | | | | | | | | | | 3 | 16 | 19 |
| 1105-486 | | | | | | | | | | 2 | 4 | 2 | 8 |
| 1105-488 | | | | | | | | 1 | 2 | 5 | 2 | 1 | 11 |
| 1105-492 | | | | | | | | | | | 5 | 5 | 10 |
| Total | 12 | 89 | 18 | | 1 | 9 | 26 | 50 | 81 | 163 | 147 | 142 | 738 |

Table 6: Grade distribution in Second Semester 2019/2020 (Female Section 2)

| Course code | W | NP | NF | IC | D | D+ | C | C+ | B | B+ | A | A+ | Total |
|--------------|----------|-----------|----|----|---|----|---|-----------|-----------|-----------|-----------|-----------|------------|
| 1105-101 | 1 | | | | | | | 8 | 9 | 16 | 6 | 4 | 44 |
| 1105-211 | | | | | | | | | | 1 | 5 | 7 | 13 |
| 1105-212 | | | | | | | | | 1 | | | | 1 |
| 1105-221 | | 3 | | | | | | | 1 | 6 | 2 | 1 | 13 |
| 1105-222 | | | | | | | | 1 | | | | | 1 |
| 1105-231 | | 2 | | | | | | | 2 | 2 | 3 | 4 | 13 |
| 1105-232 | | | | | | | | | | 1 | | | 1 |
| 1105-241 | | | | | | | | 1 | | | | | 1 |
| 1105-281 | | | | | | | | | | 2 | 4 | 7 | 13 |
| 1105-313 | | 7 | | | | | | | | 3 | | 1 | 11 |
| 1105-314 | | 7 | | | | | | | 1 | 1 | 2 | | 11 |
| 1105-315 | | | | | | | | | | 1 | | | 1 |
| 1105-323 | | | | | | | | | | 1 | 5 | 5 | 11 |
| 1105-333 | | 2 | | | | | | 1 | 1 | 3 | 4 | 1 | 12 |
| 1105-342 | | | | | | | | | | 5 | 4 | 2 | 11 |
| 1105-351 | | | | | | | | | 1 | | | | 1 |
| 1105-361 | | | | | | | | | | | 1 | | 1 |
| 1105-371 | | | | | | | | | | | 1 | | 1 |
| 1105-443 | | | | | | | | | 1 | 1 | 1 | | 3 |
| 1105-462 | | | | | | | | 1 | 1 | 2 | | | 4 |
| 1105-463 | | 6 | | | | | | 3 | 1 | 2 | 3 | 1 | 16 |
| 1105-472 | | | | | | | | | 2 | 3 | 8 | 1 | 14 |
| 1105-473 | | | | | | | | | | 2 | 3 | 11 | 16 |
| 1105-481 | | 2 | | | | | | | 2 | 2 | 2 | 5 | 13 |
| 1105-486 | | | | | | | | | | 3 | 5 | 9 | 17 |
| 1105-487 | | 5 | | | | | | | 2 | 4 | 2 | | 13 |
| 1105-492 | | 1 | | | | | | 3 | | 4 | 8 | | 16 |
| Total | 1 | 35 | | | | | | 18 | 25 | 65 | 69 | 59 | 272 |

b. Analyze the completion rates, grade distributions for computer sciences program.

Table 9 shows the distribution of the degrees obtained by students and shows the number of students withdrawing from courses for the first semester 1440/144. The number of withdrawn students is 28 out of 1,453 students.

The completion rate of students is 98.1 % and the non-completion rate is 1,9%.

Table 7: Grade distribution for the First Semester 2019/2020 (Computer sciences program)

| Section | W | DN | F | D | D+ | C | C+ | B | B+ | A | A+ |
|------------------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|
| Male section | 9 | 11 | 18 | 43 | 44 | 64 | 62 | 63 | 39 | 56 | 65 |
| Female Section 1 | 19 | 6 | 13 | 95 | 66 | 71 | 82 | 115 | 114 | 118 | 99 |
| Female Section 1 | 0 | 1 | 1 | 2 | 2 | 9 | 17 | 26 | 28 | 57 | 38 |
| Total | 28 | 18 | 32 | 140 | 112 | 144 | 161 | 204 | 181 | 231 | 202 |

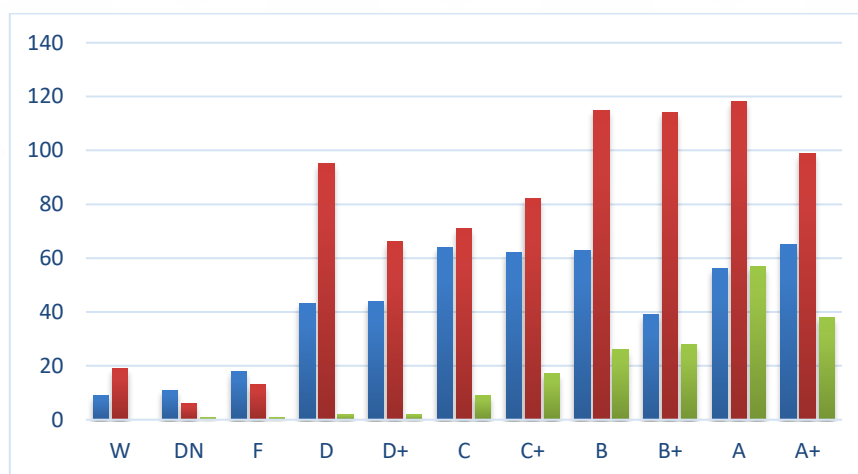


Figure1. Grades -First Semester 2019/2020 (Computer sciences program)

- Table 10 shows the distribution of the degrees obtained by students and shows the number of students withdrawing from courses for the second semester 2019/2020. The number of withdrawn(W) and IC students is 23 out of 1,488 students.
- The completion rate of students is 98.5 % and the non-completion rate is 1,5%.

Table 8: Grade distribution for the Second Semester 2019/2020 (Computer sciences program)

| Section | W | NF | NP | IC | D | D+ | C | C+ | B | B+ | A | A+ |
|------------------|-----------|------------|-----------|----------|----------|-----------|-----------|------------|------------|------------|------------|------------|
| Male section | 10 | 18 | 68 | 0 | 1 | 5 | 30 | 51 | 80 | 69 | 70 | 76 |
| Female Section 1 | 12 | 89 | 18 | 0 | 1 | 9 | 26 | 50 | 81 | 163 | 147 | 142 |
| Female Section 1 | 1 | 35 | 0 | 0 | 0 | 0 | 0 | 18 | 25 | 65 | 69 | 59 |
| Total | 23 | 142 | 86 | 0 | 2 | 14 | 56 | 119 | 186 | 297 | 286 | 277 |

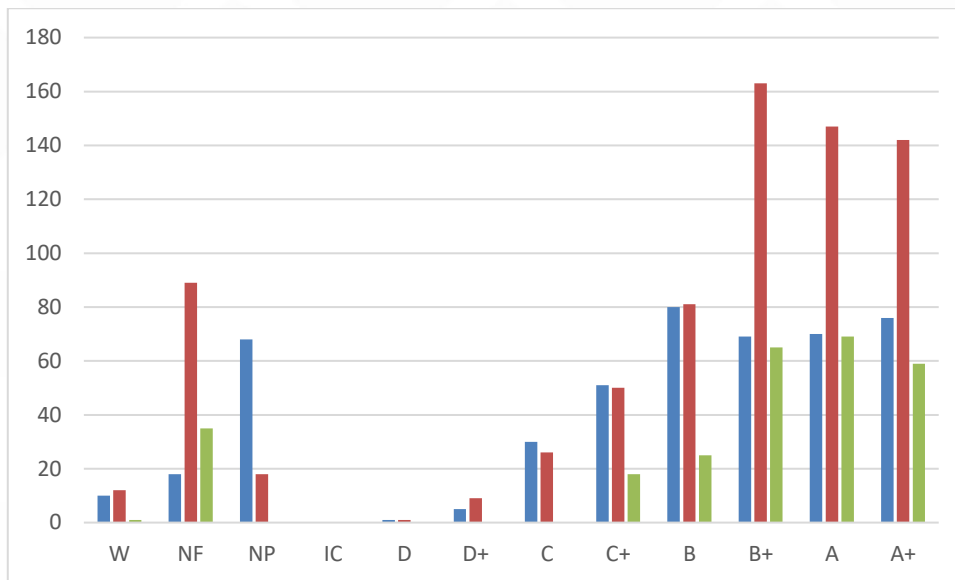


Figure2. Grades -Second Semester 2019/2020 (Computer sciences program)

- Generally, no significant difference in the completion rate between first and second semesters.
- The completion rate for the first semester was 98.1 and 98,5 for the second semester. There is a rise in the number of a+, A, B+ , B in the second semester of the year 2019/2020 due to the change of teaching and assessment methods due to the Covid-19 pandemic.

3. Result Analysis of Course Reports

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

Strengths:

- -The policies are focused according to the learning objective.
- -The vision, mission and goals are aligned to the learning objectives.

Areas for Improvement:

- Unifying the evaluation and assessment.
- Elective courses need to be updated periodically.
- Enhancing students ' programming skills.
- Enhance students ' English writing and speaking skills.

Priorities for Improvement:

- Update the content of some courses
- Reduced lab hours from two hours and forty minutes to two hours
- Unifying the subject material.

E. Program Activities

1. Student Counseling and Support

| Activities Implemented | Brief Description* |
|---|---|
| Honoring the excellent students | The faculty hold a party to honor students and their mothers |
| Follow and encourage the students who have insufficient academic level | The monthly meeting between academic supervisor and their students |
| Make a competition between students who have the insufficient academic level to improve their grades | The academic supervision unit holds a competition each term between the students who have insufficient academic level |
| Every academic member has office hours reserved to help the students | Every academic member has four office hours reserved for this purpose in his timetable |
| Comment on Student Counseling and Support** | |
| - The students counseling and support is considered as a strong point in the faculty especially in the computer science program | |

* 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* |
|---|---|
| Academic counseling workshop | At the beginning of every academic year a professional member of academic staff gives a workshop cover principal of academic counseling for the staff |
| Saudi Digital Library (SDL) electronic training course | The SDL provide continuously electronic training course available for academic staff, |
| Periodic seminar | In the first semester monthly one of the program staff gives a seminar about a specific topic |
| Conferences and workshop | the program staff has the possibility to participate in the national or international conferences and workshop during the academic year |
| Comment on Professional Development Activities for Faculty and Other Staff** | |
| These activities are sufficient and can improve the staff skills | |

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

** including performance evaluation on these activities

Program academic activity during (2019/2020)

Participants who publish or attend conferences or workshop

| Location | No. of publications | No. of conferences and workshop | No. of participants |
|-------------------|---------------------|---------------------------------|---------------------|
| In the university | 0 | 5 | 7 |
| In the Kingdom | 0 | 15 | 7 |
| Aboard | 21 | 2 | 8 |
| Total | 21 | 21 | 22 |

Seminars conducted by department staff

| Participant | Date | Title |
|--------------------|------|---|
| Dr. Sultan Khiliwi | 2020 | Securing the mobility location management in a wireless mesh network |
| Dr. Nidal Husain | 2020 | An efficient search model over Encrypted Arabic Document in cloud computing |
| Dr. Tawfiq Tohami | 2020 | Roadside units' deployment in Vehicular ad-hoc networks |
| Dr. Salem Belhaj | 2020 | Introduction to Linux |

List of staff who participated in Seminars or workshops

1. Dr. Sultan Khiliwi The Global Cybersecurity Forum (GCF),(Riyadh, Saudi Arabia from 4-5 February 2020)
2. A workshop entitled (Electronic Transformation of General Courses) on (21-4-1441 AH) for a period of two hours - in the training hall in the university city of Arar, which was transmitted via video conference.
3. A training program entitled (Electronic Accreditation "Daman") on 15-4-1441 AH for His Excellency Dr. "Mohammed bin Hussein Al-Harbi" for a period of three hours - in the training hall at the Deanship of Education Development in Arar.
4. A training course entitled "Effective Teaching Strategies" directed to faculty members at the Northern Border University for a period of one day (five training hours) on (29/3/1441 AH) at the headquarters of the College of Science.
5. A training course entitled "Strategic Planning in University Education" directed to faculty members at the Northern Border University for two days (ten training hours) on February 17-18, 1441 AH, at the headquarters of the College of Science.
6. A training program entitled "Building Quality Initiatives to Contribute to Realizing the Kingdom's Vision (2030)" for Dr. "Rajab Muhammad Al-Sayegh" for a period of three hours on (11/2/1441 AH) at the headquarters of the College of Science.
7. "How to search and use ACM Digital Library" 10/28/2019
8. Blackboard Basics Course Tuesday October 1, 2019 (Online)
9. Introductory meeting for college departments 27 Jumada Al-Awwal 1441
10. A workshop for the development of departments, programs and specializations of the college 15 Jumada Al Thani 1441
11. Course on How to Use the Blackboard E-Learning System March 12, 2020 (Online)
12. Designing electronic exams on the Blackboard e-learning system
13. Methods of evaluating students in the education management system (Blackboard) course, Shaban 5, 1441
14. Course Description: "Program, Course, Field Experience" 21-23 Shaban 1441
15. Report cycle: "Program, course, field experience" 27-29 Shaban 1441
16. Basics of Cyber Security Course 14-16 Shaban 1441
17. Applications course on data analysis using R program April 14, 2020
18. Introduction To ProQuest Ebook Central Course March 29, 2020
19. General Guidelines for the Ethics of Scientific Research Course April 1, 2020
20. Interactive Blackboard (course) - in coordination with the Blackboard unit
21. Duties of the Academic Advisor (course) - Coordination with the Deanship of Education Development
22. Digital Library (course) - in coordination with the Deanship of Education Development
Encrypted Digital Currencies (Seminar) - Department of Computer Science Dr. Ahmed Al-Omari (transmitted via video).

List of Workshops conducted by program staff

1. A course on the basics of cyber security (Dr. Ahmed Al-Omari)
2. " Cyber Security - Be Protected" course (Dr. Sultan Al-Khelaiwi)
3. A course in the use of Excel (Dr. Tawfiq Tohamy)
4. Operations Management Course in Linux (Prof. Lubna Ben Taqieh)
5. " Scholarship Excellence in Distance Education" course (Dr. Abdel Basset Darem)
6. A course on creating mobile applications using the ionic program (Mr. Iman Hamouda)
7. A course in computer maintenance (Mr. Ateeq Ahmed)

8. " Dynamic webpage development" course (Dr. Ashraf bin Milad)
9. " Static webpage design" course (Dr. Ashraf bin Milad)
10. " Preparation of Graduation Projects" course (Prof. Shams Jabnoun)
11. Preparing the trainers ToT (course) - in coordination with the Deanship of Education Development
12. Effective administrative leadership course for staff and administrators (course) - in coordination with the Deanship of Education Development
13. Educational activities (security and safety posters in laboratories) (activity) - female section, Department of Computer Science
14. Introduction to Cyber Security (course) - in coordination with the Deanship of Education Development
15. Using modern technology with functional discipline (symposium) - Department of Computer Science, Dr. Shawky Abbad
16. Introduction to linux Department of Computer Science, Dr. Salem Belhaj (seminar)
17. Roadside units' deployment in Vehicular ad-hoc networks Department of Computer Science, Dr. Tawfiq Tohamy (seminar).
18. Securing the mobility location management in wireless mesh network- Dr. Sultan Al-Kheliwi

3. Research and Innovation

| Activities Implemented | Brief Description* |
|---|--|
| <p>International Collaboration</p> | <ul style="list-style-type: none"> ● Research team from the department and international researcher from Deakin University, Australia and Malaysia lead by Dr. Abdulbasit Darem has won a three-year research grant from ministry of education in Cybersecurity. ● Research collaboration project with group of researchers from IIIT Allahabad, India lead by Dr. Abdulbasit Darem. ● Two Research collaboration projects with group of researchers from Deakin University, Australia, led by Dr. Asma Ahmed. ● Research collaboration project with group of researchers from Deakin University, Australia, led by Dr. Abdulbasit Darem. |
| <p>Publication</p> | <ul style="list-style-type: none"> ● Constraint-based recommender for procurement opportunities ● A RoadSide Unit Deployment Framework for Enhancing Transportation Services in Maghrebian Cities ● Towards a Smarter Directional Data Aggregation in VANETs ● Query Learning-Based Scheme for Pertinent Resource Lookup in Mobile P2P Networks ● A Smart Data Dissemination Protocol for Vehicular Ad-hoc Networks ● CDP: a Content Discovery Protocol for Mobile P2P Systems ● A Lightweight Dynamic Crypto Algorithm for Next Internet ● Smart Tourism and Location Based Service ● A Proposed Integrated Conceptual Model for M-Government Acceptance in Developing Countries (Jordan: A Case Study) ● Applying Fuzzy C Mean Clustering and Support Vector Machine as Machine Learning Techniques to Cluster obese People in Order to Detecting the Degree of Cardiovascular Risk Based on Body Compositions Data and Clinical Lab Results ● Routing protocols from wireless sensor networks to the internet of things: An overview ● CDP: A Content Discovery Protocol for Mobile P2P Systems ● Average Link Stability with Energy-Aware Routing Protocol for MANETs ● Position-based Selective Neighbors ● Healthcare Software Design and Implementation—A Project Failure Case ● A Comparison of Functionality-Based Packaging Using GA and Adaptive KNN Clustering as Two Approaches to Package Software ● Fuzzy Logic Driven Expert System for the Assessment of Software Projects Risk. |

| | |
|--|--|
| | <ul style="list-style-type: none"> ● Core Factors for Software Projects Success ● Software Reliability Prediction in Various Software Development stages ● Priority based Fuzzy Decision Multi-RAT Scheduling Algorithm in Heterogeneous Wireless Networks ● Fuzzy Logic Based On-demand Routing Protocol for Multi-hop Cellular Networks (5G) ● Levenberg-Marquardt Deep Learning Algorithm for Sulfur Dioxide Prediction ● LSTR: Lightweight and Secure Tree-based Routing for Wireless Sensor Networks ● Data Mining Algorithms for Weather Forecast Phenomena: Comparative Study ● Levenberg-Marquardt Deep Learning Algorithm for Sulfur Dioxide Prediction ● Priority based Fuzzy Decision Multi-RAT Scheduling Algorithm in Heterogeneous Wireless Networks ● Fuzzy Logic Based On-demand Routing Protocol for Multi-hop Cellular Networks (5G) |
| Review | <p>1- Review: Predicting Weather events using Soft Computing Techniques for the 4th International Conference of Reliable Information and Communication Technology 2019 (IRICT 2019) that is held in Pulau Springs Resort, Johor, Malaysia, on Sep 22</p> <p>2- Review: Development of Sustainable Acid Blue 113 Dye Adsorption System Using Nutraceutical Industrial Fenugreek Seed Spent, Applied Water Science 1</p> <p>3- Review: International Journal of Communication Systems</p> |
| Editorial Board Members and reviewers | <ul style="list-style-type: none"> ● Dr. Ahmad Al-Omari : Engineering and Applied Sciences(EAS) ● Dr. Shawqi Abbad: IET Software ● Dr. AbdulBasit Darim: The First International Conference of Intelligent Computing and Engineering ● Dr. AbdulBasit Darim: International Conference on Applications and Techniques in Cyber Intelligence ATCI 2019 ● Dr. AbdulBasit Darim: International Conference on Cyber Security Intelligence and Analytics (CSIA 2020) ● Dr. Asma Al-Hashmi: The First International Conference of Intelligent Computing and Engineering |
| Comment on Research and Innovation ** | |
| <ul style="list-style-type: none"> - Good research activities are carried out in the department. - There are around 27 research paper has been published during the last year, and 14 participations in paper reviews. - International research collaboration will bring a high impact to research in the department and will increase the rank of the university. - Expected publication in Q1 and Q2 Journals. | |

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

** including performance evaluation on these activities

4. Community Partnership

| Activities Implemented | Brief Description * |
|---|--|
| Community service | The academic staff participate in different community services in each academic term |
| Field training | The program cooperates with the community for training the student after finishing the sixth level |
| Comment on Community Partnership ** | |
| <ul style="list-style-type: none"> - Community Partnership is sufficient and appropriate | |

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

** including performance evaluation on these activities

Community Services

| Location | Date | Title |
|-------------------------------|-----------|---|
| Deanship of Community Service | 26/6/1441 | Mawhiba Summer Enrichment Program 2019 (Dr. Al-Saeed Mashahit) |
| King Saud High School | 10/7/1441 | A lecture on the dangers of cyberspace (Dr. Sultan Al-Khelaiwi) |
| Deanship of Community Service | 1/1/1442 | A course in cloud computing (Dr. Abdel Basit Darem) |

5. Analysis of Program Activities

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

| |
|---|
| <p>Strengths:</p> <ul style="list-style-type: none"> - Academic supervision has an important role in following and advising the students - Service community has an important and good effect on the society - Training courses improve the students' skills. |
| <p>Areas for Improvement:</p> <ul style="list-style-type: none"> - The need to compel students to study English language courses and get certificates from world authorities for programs such as TOEFL and IELTS and don't admit students with low score in mathematics. - The need to provide the necessary number of administrative and technical staff to do managerial and technical jobs instead of faculty members - The necessity to give access to program coordinators to get into admission databases to acquire the necessary information from them. - The necessity of providing enough faculty doctoral graduates who are highly qualified and giving them sufficient salaries to do their jobs in the best way. |
| <p>Priorities for Improvement:</p> <ul style="list-style-type: none"> - Encourage the academic staff to the research |

F. Program Evaluation

1. Evaluation of Courses

| Course Code | Course Title | Student Evaluation (Yes-No) | Other Evaluations (specify) | Developmental Recommendations |
|-------------|------------------------------------|-----------------------------|-----------------------------|--|
| 1101101 | General Physics 1 | Yes | | |
| 1101101 | Calculus 1 | Yes | | |
| 1104131 | Statistics | Yes | | |
| 1100101 | Scientific Terminology | Yes | | |
| 1601101 | Islamic Culture 1 | Yes | | |
| 1102101 | General Chemistry 1 | Yes | | |
| 1103101 | General Biology 1 | Yes | | |
| 1602101 | Arabic Language | Yes | | |
| 1105101 | Introduction to Computer Science | Yes | | |
| 1601201 | Islamic Culture 2 | Yes | | |
| 1105211 | Int. to Programming | Yes | | <ul style="list-style-type: none"> - Increase the number of contact hours - Reducing the number of students in the laboratory so that it does not exceed 15 students in order to allow the course instructor to follow the students during the process and for the student to have more opportunity to follow up Improve the course content to focus on problem solving rather than teaching C++ language - In theory classes, the focus must be on algorithms and flowcharts rather than direct code. - Programing in C++ can be done in lab - Recommendation to update the reference. - |
| 1105221 | Digital Logic Design | Yes | | <ul style="list-style-type: none"> - Need more advanced training kits - The number of wires used to implement the digital circuits is limited |
| 1105281 | Ethical and Professional Practices | Yes | | <ul style="list-style-type: none"> - Using different Assessment Methods contribute to the optimizing of the student results. - Reduce the course material - More simplifying the English terms in course slides. - Unifying the subject material - Reduce the number of subject chapters - simplifying more the Concepts (themes) in chapters: <ul style="list-style-type: none"> *An Overview of Ethics And chapter *Ethics for IT Professionals and IT Users - Go more deeper in chapter: <ul style="list-style-type: none"> *Intellectual Property |
| 1105231 | Discrete Mathematics | Yes | | <ul style="list-style-type: none"> - Encourage self -learning teaching strategy - Add more exercises and homework |
| 1601xxx | Elective (1) Islamic Culture | Yes | | |
| 1105212 | Programming Applications | Yes | | <ul style="list-style-type: none"> - At the beginning of the course, the instructor must discuss with the students about the course and clarify the objectives and syllabus for this course. - make available lab for students to practice any time during their free time - More practical applications and theoretical revisions to help students understand the course more. - Use C++ language instead of C language - Update required textbooks |

| | | | | |
|---------|---------------------------------|-----|--|---|
| 1105222 | Digital Systems Design | Yes | | <ul style="list-style-type: none"> - Reduce number of students in laboratory session to 15 - Encourage self-learning teaching strategy - Get original version of the software tool (ModelSim) used in this course for practical part - Update course content and references - Encourage the student to present new topic from the textbook |
| 1105241 | Data Structures | Yes | | <ul style="list-style-type: none"> - introduce more assignments and activities. - Reduce the number of students in the labs (maximum 15 students) - Use another language for practical like c# or Python - |
| 1105232 | Computation Theory | Yes | | -- |
| 1601xxx | Elective (2) Islamic Culture | Yes | | |
| 1105313 | O.O.P. | Yes | | <ul style="list-style-type: none"> - Update the references - Reduce number of students in Laboratory session - Ameliorate the content by adding GUI |
| 1105314 | Analysis & Design of Algorithms | Yes | | <ul style="list-style-type: none"> - Reduce the number of contact hours for lab from 3 to 2 hours - Remove Linked list and Queue from the list of topics because it was studied in data structures - Improve the course specification to focus on algorithms paradigm |
| 1105323 | Computer Architecture | Yes | | <ul style="list-style-type: none"> - Change the textbook of this course: Suggested textbook "David A. Patterson, Computer Organization and Design, 5th Ed., Morgan Kaufmann Series in Computer Architecture and Design, 2013" - change the course Description - change the course learning outcomes |
| 1105342 | Database Systems | Yes | | <ul style="list-style-type: none"> - Recommendation to update the reference. - Reducing the number of students in the laboratory so that it does not exceed 15 students in order to allow the course instructor to follow the students during the process and for the student to have more opportunity to follow up |
| | Free Course1 | Yes | | |
| 1105315 | Web Programming | Yes | | <ul style="list-style-type: none"> - Improve the course materials with a new web technology, using intermediate code editor. Find a support material for the student. - The instructor must discuss with the students about the course and clarify the objectives and syllabus. |
| 1105333 | Artificial Intelligence | Yes | | <ul style="list-style-type: none"> - Add more homework and reading materials - Make students Write reports - Add reading chapters - More emphasis in Discussion - Update References |
| 1105351 | Computer Graphics | Yes | | <ul style="list-style-type: none"> - Install OpenGL in lab - Improve the course materials with a mini game program to demonstrate the OpenGL routines interactively - Next semester we need to find a portable IDE that support OpenGL - Add reading chapters - Discussion - Write reports |

| | | | | |
|------------------------|--------------------------------|-----|--|---|
| 1105361 | Operating Systems | Yes | | <ul style="list-style-type: none"> - Necessity to solve the practical part problem of the course |
| 1105371 | Local Area Networks | Yes | | <ul style="list-style-type: none"> - Students who pass this course are strongly recommended to continue with the CCNA certification, which is a logical continuation of this module. This will help the students to boost their experience in the field of computer networks. - The student must have labs class next semester to cover the topics that hasn't been covered |
| 1105462 | Computer Systems Programming | Yes | | <ul style="list-style-type: none"> - Update course content - Update course reference - Reduce number of students in laboratory session to be not exceed 15 students |
| 1105443 | Software Engineering | Yes | | <ul style="list-style-type: none"> - Reducing the number of students in the class so that it does not exceed 25 students in order to allow the course instructor to follow the students during the process and for the student to have more opportunity to follow up. - Adding a practical part (i.e., lab) like in the well-known universities - Adding a new optional course named 'Advanced Software Engineering' to address the advanced topics in this area - The students need to use software tool to represent the software systems using UML - Update the course content to help students better understand and more meaningfully interact with course content - Asking the students to do Mini project many times |
| 1105472 | Wide Area Networks | Yes | | <ul style="list-style-type: none"> - The students have to take remedy Labs after university reopening to improve their programming skills - Minimize the lab contact hours from 3 to 2 hours only - Work on providing physical routers and switches - Build wireless networks lab including mobile communication lab and fiber optics - Increase the contact hours - Update the textbook for newer version - More practical lab experience could help students better understand the subject - Enabling the Cisco Academy account to allow students get certification on networks - Minimize the lab contact hours from 3 to 2 hours - Minimize the number of attendees in each lab not more than 15 students per lab class |
| | Free Course2 | Yes | | |
| 1105- (481- 483) | Elective Specialization (1) | Yes | | <ul style="list-style-type: none"> - Focus on self-learning strategy - Each student present one presentation per semester - Each student present one presentation per semester |
| 1105491 | Field Training | Yes | | |
| 1105463 | Compiler Construction | Yes | | <ul style="list-style-type: none"> - Encourage self-learning teaching strategy - Reduce number of students in Laboratory session - Add theory of computation course as a pre-request course - Update the references - This course need the theory of computation as a pre-request course |
| 1105473 | Distributed Computing Systems | Yes | | <ul style="list-style-type: none"> - Double checking of 10% of final exam paper by department colleague should be practiced to verify the students' results. |

| | | | | |
|------------------------|--------------------------------|-----|--|---|
| | | | | <ul style="list-style-type: none"> - The students have to take remedy Labs after university reopening to improve their programming skills - Encourage self-learning teaching strategy. - Update the references. - Encourage the student for self-learning |
| 1105492 | Graduation Project | Yes | | <ul style="list-style-type: none"> - Improve programming skills - Teaching the graduation project over two semesters, the first semester is two hours of study for theoretical preparation of the project and other requirements, and the second semester is three hours for the actual implementation of the project |
| 1105- (484- 486) | Elective Specialization (2) | Yes | | <ul style="list-style-type: none"> - Reduce number of students in laboratory session to 15 - Encourage self-learning teaching strategy - Update the references - Reduce number of students in Laboratory session - Update course content - Encourage innovation learning strategies |
| 1105- (487- 489) | Elective Specialization (3) | Yes | | <p>Pattern Recognition</p> <ul style="list-style-type: none"> - make available lab for students to practice any time during their free time - Decrease The lab session timing - Improve the course content <p>Human Computer Interaction</p> <ul style="list-style-type: none"> - Add more practical exercises. - More practical applications and theoretical revisions to help students understand the course more. - Licensed copies of software for practical application must be available - The textbook for this course and the level of the textbook is not much appropriate for this course. |

2. Students Evaluation of Program Quality

| Evaluation Date: 22-5-2020 | Number of Responses: 3900 for all Courses |
|---|---|
| Students Feedback | Program Response |
| <p>Strengths:</p> <ul style="list-style-type: none"> - The good qualification of the academic staff member - Good equipment of the laboratories and classrooms. - Students are given enough information about the program and comprehensive orientation. - The program monitors the students' progress by applying academic sessions to ensure they are in right path. | Satisfied |
| <p>Areas for Improvement:</p> <ul style="list-style-type: none"> - Learning resources - Extracurricular activities | <ul style="list-style-type: none"> - The library has an adequate number of learning resources. - Students in the Computer Science program are offered extracurricular activities in variety of fields |
| <p>Suggestions for improvement:</p> <ul style="list-style-type: none"> - Develop procedures to ensure effective management of learning resources - Offer more extracurricular activities in variety of fields to develop their abilities and skills | |

* Attach report on the student's evaluation of program quality

3. Other Evaluations: Not applicable

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

| | | |
|---|--------------|---------------------------------|
| Evaluation method: | Date: | Number of Participants : |
| Summary of Evaluator Review | | Program Response |
| Strengths: ● | | |
| Points for Improvements:: ● | | |
| Suggestions for improvement ● | | |

* 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 | Target | Actual | Internal | Analysis | New Target |
|----|--|--------|----------|----------|--|------------|
| 1 | Percentage of achieved indicators of the program operational plan objectives | 80% | 60% | | The target benchmarks goals for AY 2019-2020 is Not achieved due to the various effect COVID-19. | 75% |
| 2 | Students' Evaluation of quality of learning experience in the program | 80 | 66.6 | | It is noted that the target value was not achieved due to the lack of clarity of the questionnaire designed to measure students' satisfaction with the services provided and that it is not comprehensive, as well as some shortcomings in the services provided | 75 |
| 3 | Students' evaluation of the quality of the courses | 70 | 62.8% | | A percentage scale was applied to calculate the weighted average rating of students on overall evaluation of courses. The overall rating for the quality of courses showed that the target benchmark is not achieved during AY 2019-2020. | 70 |
| 4 | Completion rate | 75% | 75% | | The Percentage of students who completed the program in the minimal time is 75% which is somehow fulfilling the required target. | 80% |
| 5 | First-year students retention rate | 100% | 99.31% % | | The students' retention rate was excellent in AY 2019-2020. | 100% |
| 6 | Students' performance in the professional and/or national examinations | N/A | N/A | | | N/A |
| 7 | Graduates' employability and enrolment in postgraduate programs | N/A | N/A | | | N/A |
| 8 | Average number of students in the class | 20 | 20 | | The average number of students in the class for male and female sections during AY 2019-2020 was acceptable. | 18 |
| 9 | Employers' evaluation of the program graduate's proficiency | N/A | N/A | | There are no data available overall rating of employers for the proficiency of the program graduates on a five-point scale in an annual survey. | N/A |
| 10 | Students' satisfaction with the offered services | 75% | 69.2% | | It is noted that the target value was not achieved due to the lack of clarity of the questionnaire designed to measure students' satisfaction with the services provided as well as some shortcomings in the services provided. | 75% |
| 11 | Ratio of students to teaching staff | 15:01 | 17:01 | | The ratio of students to teaching staff in the program differs | 15:01 |

| No | KPI | Target | Actual | Internal | Analysis | New Target |
|----|---|------------------------|------------------------|----------|--|------------------------|
| | | | | | between males and females. However, this ratio is better in male sections compared to female sections indicating the need of the program for female teaching staff at the female sections. | |
| 12 | Percentage of teaching staff distribution | Male:70% Female:30% | Male:75% Female:25% | | The percentage of teaching staff distribution according to gender is not satisfactory | Male:70% Female:30% |
| 13 | Proportion of teaching staff leaving the program | <5% | 9% | | It is noted that the target value was not achieved | <5% |
| 14 | Percentage of publications of faculty members | 40% | 30% | | The average percentage of full-time faculty members who published at least one research during the year to total faculty members in the program increased during AY 2019-2020 | 40% |
| 15 | Rate of published research per faculty member | 0.5:1 | 0.34:1 | | This rate generally depends on the total number of full-time or equivalent faculty members | 0.5:1 |
| 16 | Citations rate in refereed journals per faculty member | 20:1 | 13.65: 1 | | The citations rate in refereed journals per faculty member is less than the predefined target benchmark. | 20:1 |
| 17 | Satisfaction of beneficiaries with the learning resources | 75% | 65% | | The average value of satisfaction of beneficiaries with the learning resources is comparable for male and female sections during AY 2019-2020, showing the highest importance in both areas. | 75% |

Comments on the Program KPIs and Benchmarks results:

We seek to Develop detailed questionnaires to Measure satisfaction for students, staff, graduates, and employers in different areas (PLO's Clos, facilities,)

5. Analysis of Program Evaluation

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

| |
|--|
| <p>Strengths:</p> <ol style="list-style-type: none"> 1. The university provides sub-libraries that are distributed across the male and female sections. 2. The program uses electronic resources and systems to facilitate access to research materials and scientific journals. 3. There are enough books and scientific references in Arabic and English. 4. The university applies fair policies and procedures to recruiting qualified faculty members. 5. There are several rules, regulations, and procedures that define the general policy for recruitment operations. 6. . The program has approved and publicly disclosed criteria and requirements for the admission and registration of students that are appropriate to the nature of the program, and are applied fairly 7. The number of students admitted to the program is compatible with the available resources for the program (e.g., teaching staff, classrooms, labs, and equipment). |
| <p>Areas for Improvement:</p> <ul style="list-style-type: none"> • Improve and automate mechanisms for compliance, grievance, and disciplinary cases with program • Improve role of student and faculty member in community service activates and research partnership • confirm the value of scientific integrity, intellectual property rights, rules of ethical practices, and proper conduct in all academic, research, administrative, and service fields, and activities. |
| <p>Priorities for Improvement:</p> <ul style="list-style-type: none"> • Improve role of student and faculty member in community service activates and research partnership • confirm the value of scientific integrity, intellectual property rights, rules of ethical practices, and proper conduct in all academic, research, administrative, and service fields, and activities. |

G. Difficulties and Challenges Faced Program Management

| Difficulties and Challenges | Implications on the Program | Actions Taken |
|-----------------------------|-----------------------------|---------------|
|-----------------------------|-----------------------------|---------------|

| 1- Student Academic Preparedness | | |
|--|---|---|
| - Many students face the realization that their previous academic preparation was not at the level it needed to be to perform academically at the college level. Perhaps the underprepared student may not have taken the appropriate college preparatory courses or have not taken academic courses for such a long period of time that the required information has not been retained. This means that the underprepared student will likely require remedial courses to regain or attain a base level of academic competency. | These challenges can be extremely stressful for students and can often be the reasons that lead to student attrition. | Identifying and understanding these challenges students face is a key component of the computer science program. Helping students work their way through these obstacles can be both rewarding and difficult. |
| - Extreme weakness of students in English and mathematics as a direct result of the weakness of public education | Has a severe impact on the level of graduates. | The need to encourage students to study English language courses and don't admit students with low scores in mathematics. |
| 2- Teaching Staff | | |
| - Male teaching staff must handle classes in both boys' section as well as girl section | The lack of an opportunity for female students to study face-to-face with the teacher and reduces the chances of effective communication. | Demand for more female teaching staff |
| - Most of the teaching faculty are occupied with administrative and official duty out the department, they engaged with different work other than teaching. | This will distract them, and they will not get enough time to focus on teaching duties. | The need to provide enough number to do the administrative and technical work. |
| 3- Learning Environment | | |

| | | |
|--|--|--|
| <ul style="list-style-type: none"> - Students are more likely to perform well in conditions that are conducive to learning, so colleges and universities that provide these kinds of environments will be more successful in attracting students. - The program doesn't have enough classrooms, laboratories, and lecture halls. - The classrooms, laboratories, and lecture halls are shared with other departments which makes it difficult to manage. - The classrooms, laboratories, and lecture halls are small to accommodate the students. - Few labs are available. - Female students' study in a small building, and they don't have enough laboratories compared to the number of students. - Open lab is required 24x7 for students to be easy access at any time. - Lab should be set up to allow small-group discussions or collaborative learning. | <p>It will affect students' performance and their academic level</p> | <p>We demand for wider classrooms and laboratories equipped with everything needed for the educational process</p> |
| <ul style="list-style-type: none"> - Number of students in the lab some time exceed 15 students | <p>Affects the student's academic achievement</p> | <p>Divide the lab with more than 15 students into many groups</p> |
| <p>4- Program study plan</p> | | |
| <ul style="list-style-type: none"> - The study plan needs to be updated and establish new tracks and specializations | <ul style="list-style-type: none"> - It is not easy for student to get job. - It cannot keep up with modern technological developments | <ul style="list-style-type: none"> - It is recommended to update the program plan to be aligned with the tremendous changes in the computer field and job market. - It is required to open many tracks or specialization inside the program to give the student the chance to select the spatialization that fit with their tendencies |

*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. | Formally appointing coordinators for each subject | Assign a coordinator for each subject | Program Head | 01/09/2020 | 15/09/2020 | Number of coordinators in the program | 100% |
| 2. | Standardization of content in all sections where the program is taught | Review the courses content in all the sections | Course coordinators | 01/09/2020 | 15/09/2020 | Number of unified courses content | 100% |

| No. | Priorities for Improvement | Actions | Action Responsibility | Date | | Achievement Indicators | Target Benchmark |
|-----|---|---|---|-----------------|-----------------|---|------------------|
| | | | | Start | End | | |
| 3. | Organizing skill development workshop for the faculty regarding the measurement of learning outcomes; assessment methods and course portfolio | faculty will participate in the skill development workshops | Quality Assurance Committee | Sep 2020 | Sep 2021 | Staff Satisfaction | 100% |
| 4. | Forming different department committees like Curriculum committee to achieve the program tasks. | Establish different formal committees to follow the program's work | Program Head | 01/09/2020 | 30/09/2020 | Number of a committees | 100% |
| 5. | Improve the courses' specifications | Review the courses' specifications | Course coordinators | 01/09/2020 | 30/12/2020 | Number of updated courses | 100% |
| 6. | Develop a students' project guideline | Develop a students' project guideline | Projects' Committee | 01/09/2020 | 30/12/2020 | project guideline | 100% |
| 7. | Get the staff trained for quality and accreditation aspect to improve the level of work in the department | Allow the staff to join a variety of training program in the university | Development deanship | During the year | During the year | Number of staff joined different training program | 100% |
| 8. | Establish a student body like club or association | Ask student to form a club and participate in different activities. | Student affair committee | 01/09/2020 | 30/12/2020 | Activities organized by club. | 100% |
| 9. | Increase the number of assistant professor staff female in girl section. | Recruit an assistant professor staff female in girl section. | Department Chairman and Recruitment Committee | 01/09/2020 | 30/12/2020 | 5 | 100% |
| 10. | Prepare for NCAAA accreditation | Prepare all the requirements | Quality Committee | 01/09/2020 | 30/05/2021 | Number of NCAAA requirements getting ready | 80% |

I. Report Approving Authority

| | |
|---------------------|--|
| Council / Committee | |
| Reference No. | |
| Date | |

J. Attachments:

- A report on the student's evaluation of program quality