Academic Affairs
UNIVERSITY of ALASKA ANCHORAGE

3211 Providence Drive
Anchorage, AK 99508-4614
907.786.1050

2022 ANNUAL ACADEMIC ASSESSMENT REPORT FORM
(Due October 15 to the dean)

The Faculty Senate Academic Assessment Committee (AAC) is committed to a vision of assessment that leads to continuous program improvements and benefits students. Annual assessment reporting informs decision making and resource allocation aimed at improving student learning and success. It also enables the AAC to analyze assessment across the institution and to respond to UA System, Board of Regents, legislative, and Northwest Commission on Colleges and Universities (NWCCU) requests. We thank you for your continued support of and participation in this annual activity.

Starting in Spring 2021, UAA moved to one academic assessment reporting mechanism. The below form merges and streamlines the former Annual Academic Assessment Survey and the Annual Academic Assessment Report. It also incorporates questions about how academic programs contribute to student achievement of institutional core competencies and to student success.

This annual report will be due to the dean on October 15. Programs with suspended admissions and new programs in the first year of implementation are not required to complete this form.

These reports are public documents and will be posted on the assessment website. Responses are to be narrative only, and must be ADA- and FERPA-compliant. Do not embed any links, including to webpages or other documents. To be FERPA-compliant, do not include the names of any current or former students. Rather, use statements such as, "In AY22 four program graduates were accepted to graduate programs in the field." Programs with specialized accreditation or other external recognitions must comply with restrictions regarding what can be published, as per the accreditor or external organization. Do not include appendices. Appendices to this form will not be accepted.

The form uses narrative, text, and drop-down boxes. Narrative boxes have a character limit, which includes spaces. When using text and drop-down boxes, if you want to undo an answer, press "Control-Z" or "Command-Z."

Note: To ensure the fillable fields function correctly, the form must be completed in Microsoft Word. It will not function properly in Google Docs. Programs that wish to record collaborative discussion of the report might consider creating a separate document to take notes, before entering final responses in the official fillable form.

For technical assistance with this form, email Academic Affairs (uaa.oaa@alaska.edu).

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PROGRAM SECTION (Due to the dean on October 15)

After completing the Program Section, the program should email this form to the dean, with a copy to the appropriate community campus director(s) if the program is delivered on a community campus.

Submission date: 10/27/2022

Submitted by: Frank Witmer, Associate Professor and Chair, fwitmer@alaska.edu

Program(s) covered in this report: Computer Science BA/BS
(Programs with suspended admissions and new programs in the first year of implementation are not required to complete this form.)

If you selected "Other" above, please identify. *(100 characters or less)*

College: College of Engineering

Campuses where the program(s) is delivered: ☒**Anchorage** ☐**KOD** ☐**KPC** ☐**MSC** ☐**PWSC**

Specialized accrediting agency (if applicable): Applied Science Accreditation Commission of ABET
If explanation is necessary, such as only some of the certificates and degrees are covered by the specialized accreditation, briefly describe: Only the BS degree is accredited by ABET.

INSTITUTIONAL STUDENT LEARNING CORE COMPETENCIES

In 2020, UAA launched a consensus-based, deliberative process to identify the key skillsets that help students achieve academic and post-graduation success. After a year-long process that included students, faculty, staff, administrators, alumni, and employers, the UAA community identified four core competencies at the heart of a quality UAA education. Students develop mastery of these competencies through curricular (e.g., courses), co-curricular (e.g., internships, conferences), and extra-curricular (e.g., student clubs) learning experiences.

After the stakeholder-based process in AY20, UAA is phasing in the integration of the core competencies into ongoing processes, including program student learning outcomes assessment. Personal, Professional, and Community Responsibility (PPCR) was integrated into the AY21 Annual Academic Assessment Report. The AY22 Annual Academic Assessment Report now also integrates Effective Communication.

Question #1 below is designed to engage program faculty in thinking about how they can or already do promote student learning in these two core competencies.

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1. **A.** ***Personal, Professional, and Community Responsibility: The knowledge and skills necessary to promote personal flourishing, professional excellence, and community engagement.***

- **If last year you provided your program's current or planned example of an intentionally designed course, assignment, or activity that develops and showcases the student learning in this core competency, please discuss that implementation and any observations you have regarding how well it is working.** ***(500 characters or less)***
  NA

- **If last year you *did not* identify a current or planned example of an intentionally designed course, assignment, or activity that provides students the opportunity to develop and showcase this core competency, please identify one now.** ***(500 characters or less)***
  As part of the CSCE A470 Capstone class, students discuss ethics and moral responsibility to society and their community. They complete an essay where they evaluate the larger impact on society/community from their capstone project or related field.

B. ***Effective Communication: The knowledge and skills necessary to engage in effective communication in diverse contexts and formats.***

- **What would you hope a student would say if asked where in your program or support service they had the opportunity to develop proficiency in this core competency?** ***(500 characters or less)***
  Oral Communication GER

  Written Communication GER

  ENGL 313, 414 or 478

  CSCE A470 Capstone

- **Provide your program's current or planned example(s) of an intentionally designed course, assignment, or activity that showcases the student learning in this core competency.** ***(500 characters or less)***
  As part of the CSCE A470 Capstone class, students must present their project both to their classmates during class, as well as to department faculty. The latter format is typically a poster session during which faculty members evaluate the extent to which students meet department learning outcomes.

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PROGRAM STUDENT LEARNING OUTCOMES

2. **Please list the Program Student Learning Outcomes your program assessed in AY22. For each outcome, indicate one of the following: Exceeded faculty expectations, Met faculty expectations, or Did not meet faculty expectations.**

   Example: Communicate effectively in a variety of contexts and formats – Exceeded faculty expectations.

   Five out of six Program Student Learning Outcomes were assessed for AY2020-21. Faculty expectations are met when at least 75% of students are rated Satisfactory or Excellent; expectations are exceeded when at least 90% of students are rated Satisfactory or Excellent.

   Outcome 1: Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.

   Exceeded faculty expectations.

   Outcome 2 Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.

   Met faculty expectations.

   Outcome 3: Communicate effectively in a variety of professional contexts, including technical and non-technical audiences for business, end-user, client, and computing contexts.

   Exceeded faculty expectations.

   Outcome 4: Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.

   Exceeded faculty expectations.

   Outcome 5: Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.

   Met faculty expectations.

   Outcome 6: Apply computer science theory and software development fundamentals to produce computing-based solutions.

   No data collected due to an abrupt leave of absence for one of our faculty.

3. **Describe your assessment process in AY22 for these Program Student Learning Outcomes, including the collection of data, analysis of data, and faculty (and other, e.g., advisory board) conversations around the findings. *(750 characters or less)***

   Faculty teaching the below courses evaluate students based on established rubrics for each outcome. Students are evaluated as Poor, Developing, Satisfactory, or Excellent. Results are entered into a master spreadsheet for analysis and discussion by department faculty members.

   Outcome 1: CSCE A401 (Software Engineering) and CSCE A470 (Capstone)
   Outcome 2: CSCE A401 and CSCE A470
   Outcome 3: CSCE A401 and CSCE A470

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Outcome 4: CSCE A465 (Computer and Network Security) and CSCE A470
Outcome 5: CSCE A401 and CSCE A470
Outcome 6: CSCE A351 (Automata and Algorithms)

4. **What are the findings and what do they tell the faculty about student learning in your program? *(750 characters or less)***
   For the five student learning outcomes evaluated, students met or exceeded faculty expectations for each of them. A portion of the sixth outcome can be evaluated based on results from the national Educational Testing Service (ETS) Major Field Test in Computer Science. For AY2021-22, our students scored in the 63rd percentile for Programming Fundamentals, 30th percentile Computer Organization/Architecture/Operating Systems, and 81st percentile in Algorithms/Theory/Math. This is the first time the Comp Org/Arch/OS subject area result has been below the 50th percentile mark. We are not sure why this score was so low, but we will be watching it closely to see if it is a one-time anomaly, or a persistent trend that requires our attention.

5. **Based on the findings, did the faculty make any recommendations for changes to improve student achievement of the Program Student Learning Outcomes? Please describe the recommended action, what improvement in student learning the program hopes to see with this change, the proposed timeline, and how the program will know if the change has worked. If no recommendations for changes were made, please explain that decision. *(750 Characters or less)***
   Based on these findings, we did not make any changes.

PROGRAM IMPROVEMENTS AND ASSESSING IMPACT ON STUDENT LEARNING

6. **In the past academic year, how did your program use the results of previous assessment cycles to make changes intended to improve student achievement of the Program Student Learning Outcomes? Please check all that apply.**
   - ☐Course curriculum changes
   - ☐Course prerequisite changes
   - ☐Changes in teaching methods
   - ☐Changes in advising
   - ☐Degree requirement changes
   - ☐Degree course sequencing
   - ☐Course enrollment changes (e.g., course capacity, grading structure [pass/fail, A-F])
   - ☐Changes in program policies/procedures
   - ☐Changes to Program Student Learning Outcomes (PSLOs)
   - ☐College-wide initiatives (e.g., High-Impact Practices)
   - ☐Faculty, staff, student development
   - ☐Other

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☒No changes were implemented in AY22.

If you checked "Other" above, please describe. ***(100 characters or less)***

7. **Do you have any information about how well these or other past improvements are working? Are they achieving their intended goals? Please include any data or assessment results that help you demonstrate this.** ***(750 characters or less)***
   For AY2020-21, we revised the introductory sequence to require a new class, CSCE A101 Introduction to Computer Science, as a prerequisite to CSCE A201. The goal was to reduce the high Drop/Fail/Withdraw (DFW) rates for CSCE A201 and improve student programming skills throughout the program. The following table shows DFW rates have improved (decreased) for CSCE A201 since implementing these changes in Fall 2020:

Term	DFW
SP17	48%
FA17	52%
SP18	44%
FA18	47%
SP19	45%
FA19	59%
SP20	51%
FA20	38%
SP21	27%
FA21	27%
SP22	36%

STUDENT SUCCESS AND THE CLOSING OF EQUITY GAPS

Student success depends on many aspects of a student's experience. On the academic program level, it can relate to correct placement, course sequencing, standardized pre-requisites across sets of courses, the intentional use of high-impact practices, proactive advising, course scheduling practices, etc.

UAA has selected the below metrics as student success metrics for accreditation.

In response to faculty questions and concerns about reporting on these data without more discussion and training, we will spend AY23 exploring together what equity data are and are not, how they can be used responsibly, and what programs can do to close equity gaps in student achievement on the below metrics, as well as to improve overall student achievement on them. UAA has a team participating in the NWCCU Data Equity Fellowship, and that team will help to guide these conversations.

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8. **PROGRAMS ARE NOT REQUIRED TO RESPOND TO QUESTION #8 FOR THEIR REPORT DUE ON OCTOBER 15, 2022. IT IS HERE JUST FOR THEIR REFERENCE. Describe the actions your program is taking to improve student achievement on one or more of the following metrics. Also, describe any resulting improvements in student learning.**

Metric	Definition	Rationale
UNDERGRADUATE COURSE PASS RATES BY COURSE LEVEL (Undergraduate lower-division, undergraduate upper-division).	The percentage of students who receive a passing grade (A, B, C, P) for all undergraduate students in a course offered by a program compared to the same rate calculated for all courses at that level. Based on a 5-year trend. Included in the denominator for undergraduate courses are the grades D, F, W, I, NP, NB. *Data source: RPTP end-of-term freeze files. Disaggregate as per accreditation.*	Low pass rates are one critical way to identify courses that are barriers to student success and degree completion. Failing key courses correlates with low retention and more major switching. Mitigation strategies can be internal or external to the course itself, including, among other things, the use of high-impact pedagogical practices, appropriate placement, course sequencing, tutoring, and other means to ensure student success within a particular course. This metric and the disaggregation of the data can inform planning, decision making, and the allocation of resources to programs and services designed to mitigate gaps in achievement and equity.
ANNUAL RETENTION 1ST TO 2ND FALL	Traditional measure of the % of first-time, full-time associate and baccalaureate degree-seeking freshmen who enter in a given fall term and return the following fall. *Data source: UA System Warehouse RPTP/DEDMGR end-of-term freeze files. Disaggregate as per accreditation on an annual basis.*	Following the student from the 1st fall to 2nd fall can indicate ongoing connections and support inside and outside of the classroom are motivating students to return to continue their studies at the institution. Continuing enrollment is a key factor in completion.
SEMESTERS TO DEGREE – GRADUATE PROGRAMS	The average number of semesters taken by students to complete any graduate degree or graduate certificate program. Determined by students who have graduated from a graduate program as their primary degree. 5-year trend. *Data source: UA*	Looking at the number of semesters graduate students take to complete their degrees illustrates how students progress through their degree programs (full-time, part-time, stop-out). This information on student behavior and completion can inform program structure and

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Metric	Definition	Rationale
	System Warehouse RPTP/DEDMGR end-of-term freeze files. Disaggregate as per accreditation on an annual basis.	help the institution support students in a way that honors the time needed for rigorous intellectual engagement and growth and also ensures that students can complete in a timely manner.

9. **Do you have any examples of post-graduate success you want to highlight? For example, major scholarships, the percent of students who pass licensure examinations, the percent of students accepted to graduate programs, the percent in post-graduation employment in the field or a related field. *(750 characters or less)***
   Maybe ETS exam results?

DEAN SECTION (Due to the program on January 15)

After completing the Dean Section and signing it, the dean should email this form to the program, and copy uaa_oaa@alaska.edu for posting. If the program is delivered on one or more community campus, the dean should consult with the appropriate community campus director(s) on the response and copy the appropriate community campus director(s) when emailing the response to the program.

1. **Based on the program's responses above, what guidance and support do you have for the program moving forward? *(750 characters or less)***
   The ABET Draft Statement received after the October visit did give the program a Concern for the fact that, although the assessment plan is well-designed and data are collected regularly, the process is not well-documented, particularly faculty meetings. Although ABET does not require corrective action for Concerns, the Department has formed and is implementing a plan to have a member of the college admin staff on hand to take minutes at future faculty meetings. ABET also gave the program a Weakness for insufficient faculty, and, as was reported in the 30-Day Due Process Response, a search is ongoing for a full-time, tenure-track faculty member.

2. **What is the program doing particularly well in terms of its processes for the assessment and improvement of student learning, for example, the achievement of the Program Student Learning Outcomes, the closing of equity gaps, or addressing the core competencies? *(750 characters or less)***
   The program is commended for a successful ABET visit in October 2022, and for all the accompanying preparation. The program was commended last year for taking the step of adding CSCE A101 to the curriculum, which was intended to improve the pass rate for CSCE A201. We agree that the data presented this year are encouraging!

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Dean's signature: Kenrick Mock **Date:** 1/23/2023