**Department/Program Review Summary**

**2020-2021**

**Department:** 0570 –CAM – Computer Aided Manufacturing

**Date of Review:** March 19, 2021

**Review Team Members and Titles:**

Kathleen Cleary, Senior Vice President, and Interim Provost

Jennifer Kostic, Associate Provost

Jared Cutler, Assistant Provost of Accreditation and Assessment

Natalie Fleck, Associate Professor, Veterinary Technology

Amanda Romero, Chairperson/Professor, Design

Diane Murphy, Advisor, Academic Advising

Cari Gigliotti, Faculty, Chemistry

Trish Burke Williams, Manager, Academic Advising

**Department Members Present:**

Anthony Ponder, Dean, Science, Mathematics, and Engineering

Ron Ulrich, Chair, Computer Aided Manufacturing (CAM)

Faculty:

Keith Bernheisel

Daryl Curnutte

David Griffith

Kevin McNeeley

Natalie Royer

Staff:

Teri Hecht

**Commendations:**

* This was an excellent Program Review. Not only was the self-study exceptionally well written, but the Review Team also enjoyed discussing with the department in the meeting the truly impressive work it has done in the years since the last Program Review. The new programs that have been developed, the restructuring of program offerings to better accommodate students, the move of equipment to Eaker Street, and the many other accomplishments that were discussed are the work of an engaged, dedicated, and very busy group of faculty and staff.
* The work of the department chairperson merits special mention. His leadership has been crucial in moving the department in the direction of expansion and growth, and his outreach with local businesses has generated new professional relationships and opportunities for students. In the few years he has been at Sinclair, he has demonstrated remarkable leadership in these areas.
* Among the many impressive things the department has accomplished in the past few years, one of the most noteworthy is the development of the welding program, which has generated unparalleled interest among prospective students. The welding program is a great example of the department recognizing a major need in the region and moving to meet that need. Rarely has a new program generated as much interest and “buzz” as this one has.
* The department has been wise to embed Industry Recognized Certificates (IRC) into its degrees and certificates, which enhance their value to students in terms of making them more marketable to potential employers.
* The department has been extremely active in the development of new programs, designing and implementing four new certificates and one new degree since the last Program Review.
* The Review Team was also impressed with the department’s work with The CNC Boot Camp two-week overview course that focuses on recruiting the unemployed and underemployed in the region. Utilizing unemployment agencies and underemployed groups to get people into the course is brilliant, and provides a much-needed connection between individuals looking for employment opportunities and industry need.
* The Review Team was particularly impressed by the ability of this department to pivot in response to unpredictable and challenging economic and social factors. The department has an excellent grasp of how their students are impacted by these factors, and are nimble and creative in adapting and adjusting to continue to meet student needs as conditions change. For example, as the department noted that employers needed their employees to work more hours during the pandemic, leaving their students with significantly decreased opportunities to attend classes, the department realigned STEP II to better meet the availability of students. This flexibility removed a barrier to completion, thus creating opportunities for many students to continue their education and stay on track during the pandemic.
* The Review Team, and in fact Sinclair in general, greatly appreciates what the department has done to embrace the Board of Trustees’ direction to increase our efforts in advanced manufacturing and skilled trade areas. Often this can make a department feel as though the pressure is on, especially on the chair, but also on all of the faculty, and it can be challenging to adjust to the changes that are coming in all of the skilled trades. But as noted earlier, the department does an exceptional job of pivoting when necessary, and the Review Team wishes to thank the department for hanging in there, for being willing to make those crucial pivots to better serve students, and encourages the department to continue to pursue the growth opportunities identified in the self-study.
* The department also deserves a lot of credit for the way it handled the challenge of moving equipment to the Eaker Street building, and in the way it adjusted to the consequent loss of equipment and space, while still managing to maintain quality offerings. The Review Team found the department’s work in this regard to be highly commendable.
* The Review Team really can’t say enough about the department’s job placement rate – it is highly impressive, and demonstrates how students benefit from the excellent reputation the department has, and the relationships with employers that it has carefully cultivated. These relationships with industry professionals are truly crucial to helping our graduates find employment – while it takes lot of time and work to build these relationships, it is an investment that really pays off for our students. These relationships are also evidenced in the department’s Advisory Board, which has been invaluable in maintaining links with local industry.
* The Review Team was struck by the department’s 86-90% completion course success rates – this is truly outstanding. This considerably exceeds the course success rate average for the college as a whole.
* While this was an unforeseen challenge, the department handled the reduced classroom capacity due to COVID restrictions with professionalism, finding a way to continue offering a quality educational experience under new and unprecedented constraints.
* The Review Team wishes to highlight the one-on-one faculty advising students receive as they come into the program. While this requires a great deal of time on the part of faculty, it makes a tremendous difference to students in terms of developing strong relationships with their instructors, and in fostering a sense that the department cares about them and is interested in helping them succeed. The Review Team recognizes how time intensive these efforts are, and greatly respects this individualized approach to mentoring students.
* The ATS degree the department has developed is a model for offering students flexible options that can move them in any one of a number of directions aligned with their strengths and interests, and serves as an example of how departments can develop students holistically. Programs like these can build a bridge to the future for students who have been told they don’t have a lot of options, who may have been erroneously told that they don’t have what it takes to succeed in college. This department offers opportunities to students who have been misled to believe that they don’t have any.
* It appears that the department chairperson and faculty really went out of their way to work with MECA to make the situation work with space for evening classes, and is an excellent example of being a good partner with other educational providers.
* The self-study was written at a level that allowed a layperson to understand the issues being discussed, which the Review Team really appreciated. Most of us don’t understand technical aspects of what the department does, but the self-study was written in a manner that was easy to follow for those unacquainted with the field. The department really did an excellent job of tailoring its writing to non-professionals in the field.
* This department is very student-focused, and is intentional about what students need in order to complete their programs. This is obvious from the work it puts into orientation, its modification of scheduling to help students finish programs, its work helping students with MAPs, and other student-focused efforts that are evidence of a personalized approach to how it supports students. It creates a sense of accountability in students when they feel a relationship with faculty.
* The Review Team was also impressed with the mutually beneficial relationship the department has developed with Hobart, it is very much a two-way street, where students come to Sinclair after completing Hobart training and get an associate degree. These kinds of relationships not only serve as an enrollment pipeline, but also help the department cultivate key relationships with external stakeholders.
* The internship placement rate for the department exceeds 95% - this is truly remarkable, and frequently leads to employment for students of the department. It is a true indication of the quality of the program that they are able to arrange internship experiences for so many of their students.

**Recommendations for Action:**

* For the purposes of recruitment, particularly for students who may not otherwise consider enrolling in the department’s programs, the Review Team recommends that the department establish connections with the career community coordinator for STEM, with the high school interfacing programs (e.g. student engagement programs), with the transition programs, in addition to developing connections with non-STEM career communities. The department provides excellent opportunities that lead to employment, and has already been mindful of the potential for attracting students who might not be aware they would succeed in this area.
* While this effort is already underway, the department with support from the division dean and provost’s office should continue to find ways to promote the new ATS degree with its five options, and other offerings in the department. Given that Sinclair’s Board of Trustees has prioritized promotion of advanced manufacturing programs, the department is strongly encouraged to find ways to promote its new ATS degree. The department may want to consider working with the Provost’s Office to make this an official, permanent degree program.
* The department is encouraged to review the program outcomes among its various degrees and certificates, ensuring that there are differences between program outcomes between its programs, such that no two programs have the same outcomes. A review of all of its program outcomes to determine whether any need to be updated may also be in order.
* The transition to digital thread framework provides an excellent opportunity to incorporate the General Education Information Literacy and Critical Thinking rubrics into existing or new assignments.
* The Review Team recommends that the department consider increased use of the eLearn Learning Management System in terms of gradebooks, online activities, etc. These tools provide increased options for improving student learning that may not be fully realized at the present time.
* It is important for the department to emphasize considerations of equity, social justice, and bias. The Review Team recommends that the department look for equity gaps in enrollment and success in its programs, and consider how to increase diversity in the department. Educating students about issues related to diversity, equity, and inclusion needs to be a priority for all departments at Sinclair right now. Perhaps the department could consider using an OTM course that addresses these concepts in curricula for its programs.

**Overall Assessment of Department’s Progress and Goals:**

The self-study celebrates an amazing list of accomplishments for a relatively small department. It is clear that the chair and faculty are hardworking and committed to finding ways to help more of their students succeed. It is a department that has been visionary about developing new programs, and efficient in incorporating pieces of existing programs where possible rather than simply creating new curricula.

This department really understands their strengths, weakness and threats. Because of its self-awareness regarding its strengths, it is able to leverage those strengths to maximize benefits for its students. It is also a department that seeks ways to address weaknesses and mitigate threats, displaying a remarkable amount of flexibility in doing so. It is a department that is always looking ahead, considering what factors may emerge in coming years, and ensuring that they make sure they are staying in touch with industry needs to stay ahead of those emerging factors.

The past year has presented unforeseen challenges to most departments, but some of the challenges this department has been presented with have been unique. Faculty have done an exceptional job of maintaining the quality of its educational offerings within the constraints caused by the pandemic.

The department benefits from strong leadership and dedicated faculty who work as a team. They understand strengths of various members of their team, and know how to utilize and leverage the individual strengths of each of its members in providing excellent service to its students. Not only does it demonstrate exemplary dedication to the students it already has, but also goes above and beyond to bring new students into the program.

What has been accomplished in the past few years in terms of new programming has been amazing, and is especially impressive in that they have done so much in such a small amount of time. This was an outstanding Program Review in all respects, and the Review Team feels the department has much to be proud of.

**Institutional or Resource Barriers to the Department’s Ability to**

**Accomplish Its Goals, if any:**

* Marketing for recruitment is a challenge for most departments at Sinclair. The department is making efforts to market to high school students, to those who are already in the industry without a degree, and to out-of-work individuals. Targeting certain groups for marketing is critical (e.g. high school counselors). In that institutional marketing resources for individual departments at Sinclair are limited, the department will want to be intentional in maximizing its efforts. It should be sure to focus its efforts where the students are – for example, students are often on different social media platforms than Sinclair faculty and staff. The department should continue to build relationships for the purpose of recruiting students. One approach may be to highlight the success of graduates, using outcomes such as placement rates to help recruit new students, sharing stories of successful graduates, etc.
* The challenges of space constraints at the Eaker Street building are not easy to resolve, the department will need to continue to work with its dean to attempt to find solutions.
* This appears to be a field where faculty training for new technologies and tools is required from time to time – the department will want to be sure to communicate these needs to the dean as they arise.
* The departure of the senior lab technician has hampered the department’s ability to move forward. The dean is working to prioritize this staffing need – the department will want to be sure and communicate with the dean regarding any other staffing needs that may arise.
* There is also the issue of aging equipment – the department may need to develop proposals for equipment upgrades to leverage digital thread programs and other new programs. The department will need to work with the dean to ensure these needs are met. Are there opportunities for developing arrangements with community partners who might help provide a means of acquiring new equipment?