

# Electronic Engineering Technology

July 13, 2022



## Academic Program Plan - Electronic Engineering Technology (2020-2023)

Department/Program Goals	Actions	Progress Report	Use of Results
<p><b>1.1 Student Engagement and Success</b>                      - Increase Student Involvement in Professional Activities  <b>Goal Status:</b> Active  <b>Planned Assessment Year(s):</b> 2020 - 2021, 2021-2022, 2022-2023  <b>Start Date:</b> 01/21/2020  <b>Targeted Completion Date:</b> 05/13/2023</p>	<p><b>In Progress</b> - Increase Student Involvement in Professional Activities  <b>Outcome (Measure of Success):</b> The club had ~ 10 active members as of 1/2020.  <b>Current Information/Data:</b> The IEEE Club was previously managed by the CN/CS Program Coordinator. Since she retired (1/2020), the club responsibility has been permanently transferred to the Electrical Engineering Technology / Computer Engineering Program Coordinator who is currently Don Marcotte. The club will continue to be open to new members from any major including EET/CN/CS students. The CN/CS students will be encouraged to continue their involvement in the IEEE club as well as other clubs.  <b>Action Start Date:</b> 01/21/2020  <b>Target Completion Date:</b> 05/13/2023  <b>Required Funding:</b> &lt;now managed by EET so \$0 for CN/CS&gt;  <b>Individual Responsible:</b> transferred to Don Marcotte as well as the CN/CS program coordinator</p>	<p><b>Reporting Period:</b> 2021-2022  <b>Result Type:</b> Still In Progress                      IEEE club was restarted and managed by the CS program coordinator. Meetings were held on a bi-weekly basis. Activities included local business presentations and a trip to a gaming conference in Boston. (06/29/2022)  <hr/> <b>Reporting Period:</b> 2020-2021  <b>Result Type:</b> Still In Progress                      Meetings did occur on a weekly basis until beginning of March 2020 including a conference. No meetings took place after that due to the pandemic. (04/02/2021)  <b>Explanation of Results:</b> An attempt was made to resume club activities in the S2021 but there was a scheduling conflict with students and club advisor.</p>	<p><b>Use of Results:</b> Plan is for EET department to resume mentoring of IEEE club after new EET FT faculty have worked at NCC for more than 1 year. (06/29/2022)</p>

Department/Program Goals	Actions	Progress Report	Use of Results
<p><b>1.2 Student Engagement and Success</b>            - Update aging lab equipment  <b>Goal Status:</b> Active  <b>Planned Assessment Year(s):</b> 2020 - 2021, 2021-2022, 2022-2023  <b>Start Date:</b> 08/31/2020  <b>Targeted Completion Date:</b> 05/13/2023</p>	<p><b>In Progress</b> - Gradually start to replace the dated test equipment that is used in the classroom / lab  <b>Outcome (Measure of Success):</b> Having enough equipment to support our class offering w/o problems (breakdowns, no class or lab failures).  <b>Current Information/Data:</b> A few pieces have been updated but most have not. Given the costs, the equipment should be gradually updated over 3 years. The price for each is power supply ~\$1,437.00 ea. and Bench Function Generators ~\$300 ea. We need at least two handheld LCR meters. These go for ~425.00 each. The ones we have are over forty years old and are not very reliable. All of the above comes to: \$18,220.  <b>Action Start Date:</b> 08/31/2020  <b>Target Completion Date:</b> 05/13/2023  <b>Required Funding:</b> It looks like some of our equipment was previously paid for by Perkins but now has been moved to the program budget which has not been enough to even start.</p>	<p><b>Reporting Period:</b> 2021-2022  <b>Result Type:</b> Still In Progress            19 new power supplies, function generators, and DMMs have been approved for purchase to equip the new EET and Capstone labs as part of the STEM wing renovation. This will support 12 stations in the EET lab, 5 stations in the Capstone lab, and allow for 2 spares. (06/29/2022)</p> <hr/> <p><b>Reporting Period:</b> 2020-2021  <b>Result Type:</b> Still In Progress            None of these materials were purchased to date due to budget constraints. (04/02/2021)</p>	<p><b>Use of Results:</b> Equipment purchase request needs to go out for bid. Next to consider for purchase will be 2 handheld LCR meters. The oscilloscopes are currently in good shape, but will reevaluate this on a yearly basis to ensure that lab equipment remains current. (06/29/2022)</p>
<p><b>1.3 Student Engagement and Success</b>            - Maintain close relationships with Industry Partners  <b>Goal Status:</b> Active  <b>Planned Assessment Year(s):</b> 2020 - 2021, 2021-2022, 2022-2023  <b>Start Date:</b> 08/31/2020  <b>Targeted Completion Date:</b> 05/13/2023</p>	<p><b>In Progress</b> - Regularly meet with the industrial advisory board  <b>Outcome (Measure of Success):</b> Maintain the relationships to better understand employers' needs  <b>Current Information/Data:</b> The board meets with faculty at least once a year.  <b>Action Start Date:</b> 08/31/2020  <b>Target Completion Date:</b> 05/13/2023  <b>Required Funding:</b> \$225 – for food ay</p>	<p><b>Reporting Period:</b> 2021-2022  <b>Result Type:</b> Still In Progress            IAB meeting held May 9, 2022. New PC has established contact with ESSCO Calibration Laboratory and BAE Systems, who have hired many past NCC EET graduates. Also have established new contact with Allegro Microsystems. (06/29/2022)</p> <hr/> <p><b>Reporting Period:</b> 2020-2021  <b>Result Type:</b> Still In Progress            Last meeting was Fall 2019. Next meeting scheduled for late</p>	<p><b>Use of Results:</b> EET faculty will continue to strengthen existing industry partner relationships, as well as search for new potential industry partners in the area. (06/29/2022)</p>

Department/Program Goals	Actions	Progress Report	Use of Results
	meetings	April 2021. (04/02/2021)	
<p><b>1.4 Student Engagement and Success</b>  - Ability to run labs with adequate consumables  <b>Goal Status:</b> Active  <b>Planned Assessment Year(s):</b> 2020 - 2021, 2021-2022, 2022-2023  <b>Start Date:</b> 08/31/2020  <b>Targeted Completion Date:</b> 05/13/2023</p>	<p><b>In Progress</b> - Have enough consumable parts / boards for labs  <b>Outcome (Measure of Success):</b> labs can run without worrying about part availability and where to store them.  <b>Current Information/Data:</b> Not Good – There are enough parts/boards for us to give all students the same lab assignment. We end up substituting some parts with the closest match. One of the biggest issues are the parts storage bins. The bins we have are holder than any of our students  <b>Action Start Date:</b> 08/31/2020  <b>Target Completion Date:</b> 05/13/2023  <b>Required Funding:</b> \$1,000</p>	<p><b>Reporting Period:</b> 2021-2022  <b>Result Type:</b> Partially Complete  New component storage bins were purchased in May 2021. In December 2021, the EET lab was moved to a temporary lab space to support the STEM wing renovation. As part of that move, EET faculty were able to sort through storage cabinets and begin to properly organize the components in the lab. This year's operating budget was wholly utilized to purchase necessary components to support lab needs. There's still more work to be done, but it is heading in a positive direction. (06/29/2022)</p> <hr/> <p><b>Reporting Period:</b> 2020-2021  <b>Result Type:</b> Partially Complete  We made good progress with parts procurement but not so with storage capabilities. (04/02/2021)</p>	<p><b>Use of Results:</b> The new EET lab and new Capstone lab are expected to be completed for June 2023. At that time, EET faculty will do a second sort through the storage cabinets, and will complete the organization of components as is appropriate for a professional lab space. (06/29/2022)</p>
	<p><b>In Progress</b> - Keep ABET Accreditation for the EET program. In addition, the department desires to also eventually get ABET accreditation for the Computer Engineering Degree. However, NCC can not apply for it until there are graduates or 18 months have passed since the degree was initially offered. The Degree was established August, 2019 so we only need to have some graduates. Not sure if there is a minimum number required from ABET (need to investigate).  <b>Outcome (Measure of Success):</b> EET has been accredited for many years.  <b>Current Information/Data:</b> Last report from ABET was Summer 2018 with no findings (interim report).  <b>Target Completion Date:</b> 06/30/2022  <b>Required Funding:</b> \$3,000</p>	<p><b>Reporting Period:</b> 2021-2022  <b>Result Type:</b> Still In Progress  EET ABET self-study report submitted 6/29/22. Site visit planned for 10/2-10/4. (06/30/2022)</p>	<p><b>Use of Results:</b> Department will begin planning to pursue ABET accreditation for the CET program. The CET program had 5 students graduates in 2022. (06/30/2022)</p>

Department/Program Goals	Actions	Progress Report	Use of Results
	<p><b>Individual Responsible:</b> EET Program Coordinator</p>		
<p><b>2.1 Enrollment and Sustainability -</b> Increase Enrollment  <b>Goal Status:</b> Active  <b>Planned Assessment Year(s):</b> 2020 - 2021, 2021-2022  <b>Start Date:</b> 01/21/2020  <b>Targeted Completion Date:</b> 02/01/2022</p>	<p><b>In Progress -</b> Provide enough seats in all course sections  <b>Outcome (Measure of Success):</b> Observation of increased enrollment from year to year  <b>Current Information/Data:</b> The enrollment for EET has been growing slightly from year to year. We expect that to continue for both EET and CEG.  <b>Action Start Date:</b> 01/21/2020  <b>Target Completion Date:</b> 02/01/2022  <b>Required Funding:</b> none (although tied to Section 1, Goal 2).  <b>Individual Responsible:</b> Program Coordinator</p>	<p><b>Reporting Period:</b> 2021-2022  <b>Result Type:</b> Still In Progress  EET enrollment has been decreasing since the start of the pandemic in 2020. We have enough seats in all course sections to support our students. The greater concern is increasing enrollment at this point. (06/30/2022)</p> <hr/> <p><b>Reporting Period:</b> 2020-2021  <b>Result Type:</b> Still In Progress  Progress wasn't made in this area because of the pandemic. (04/02/2021)</p>	<p><b>Use of Results:</b> FT faculty are attending recruiting events when possible to increase enrollment in both EET and CET programs. (06/30/2022)</p>
<p><b>2.2 Enrollment and Sustainability -</b> Support Faculty Education  <b>Goal Status:</b> Active  <b>Planned Assessment Year(s):</b> 2020 - 2021  <b>Start Date:</b> 01/21/2020  <b>Targeted Completion Date:</b> 05/15/2021</p>	<p><b>Not Completed -</b> Maintain qualified faculty through workshops, conferences etc.  <b>Outcome (Measure of Success):</b> Funding provided, and education opportunities completed.  <b>Current Information/Data:</b> Current faculty in the department plan to go to recognized conferences in their fields spring 2020. Update: ABET symposium for S'20 cancelled due to the Corona Virus Concerns&gt;  <b>Action Start Date:</b> 01/21/2020  <b>Target Completion Date:</b> 05/15/2021  <b>Required Funding:</b> \$ 2,500 / year for EET Faculty  <b>Individual Responsible:</b> Chair of Department</p>	<p><b>Reporting Period:</b> 2020-2021  <b>Result Type:</b> Outcome Not Achieved  The PC and DC had plans to attend the ABET symposium for spring 2020 but these were canceled due to the pandemic. (04/02/2021)</p>	<p><b>Use of Results:</b> Recommend all full time EE instructors attend the spring 2022 ABET symposium. (04/02/2021)</p>
	<p><b>In Progress -</b> Maintain qualified faculty through workshops,</p>	<p><b>Reporting Period:</b> 2021-2022  <b>Result Type:</b> Partially Complete</p>	<p><b>Use of Results:</b> The plan is for</p>

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	<p>conferences etc.  <b>Outcome (Measure of Success):</b> All full time EE instructors attend the Spring 2022 ABET symposium  <b>Current Information/Data:</b> Current faculty in the department had planned to go to recognized conferences in their fields spring 2020. Update: ABET symposium for S'20 cancelled due to the Corona Virus Concerns&gt;  <b>Action Start Date:</b> 04/02/2021  <b>Target Completion Date:</b> 05/13/2022  <b>Required Funding:</b> \$ 2,500 / year for EET Faculty  <b>Individual Responsible:</b> Chair of Department</p>	<p>There was no ABET symposium this year, but FT faculty were able to attend virtual webinars that we essential in helping to prepare for the 2022 ABET EET accreditation. PC attended Accreditation Essentials 4/11-4/13, and both FT faculty attended Basics of Program Assessment on 5/21/ (06/30/2022)</p>	<p>both FT faculty to attend the 2023 ABET Symposium in Nashville, TN. (06/30/2022)</p>
<p><b>2.3 Enrollment and Sustainability -</b> Improve Retention  <b>Goal Status:</b> Active  <b>Planned Assessment Year(s):</b> 2020 - 2021, 2021-2022, 2022-2023  <b>Start Date:</b> 03/02/2020  <b>Targeted Completion Date:</b> 05/13/2023</p>	<p><b>In Progress -</b> Improve teacher / student relationships  <b>Outcome (Measure of Success):</b> Improvement in the above percentages. BY HOW MUCH?  <b>Current Information/Data:</b> TBD  <b>Action Start Date:</b> 03/02/2020  <b>Target Completion Date:</b> 05/13/2023  <b>Required Funding:</b> None  <b>Individual Responsible:</b> Program Coordinator and Chair of Department.</p>	<p><b>Reporting Period:</b> 2021-2022  <b>Result Type:</b> Still In Progress  From Veera Bridge Enrollment History Dataset - Fall 2021 to Spring 2022 retention in the EET program: 21 to 20, 95% retention. FT faculty work diligently to engage and advise students. The focus will be to maintain this high percentage of retention while increasing enrollment in the program. (06/30/2022)</p> <hr/> <p><b>Reporting Period:</b> 2020-2021  <b>Result Type:</b> Still In Progress  Fall to spring retention for academic year 2020 was 80%. (33/41).  Fall to spring retention for academic year 2021 was 65%. (24/37). (04/02/2021)</p>	<p><b>Use of Results:</b> Retention of 95% Fall 2021 to Spring 2022 is great, but until a year-over-year trend has been established and maintained, this goal will remain in progress and reevaluated yearly. (06/30/2022)</p>
<p><b>3.1 Diversity and Inclusion -</b> Increase enrollments for non-white males &gt;25, all females and minorities  <b>Goal Status:</b> Active  <b>Planned Assessment Year(s):</b> 2020 - 2021, 2021-2022, 2022-2023</p>	<p><b>In Progress -</b> Recruit more non-traditional students other than just males recently out of high school  <b>Outcome (Measure of Success):</b> Increase in % in the 3 areas below  <b>Current Information/Data:</b> as of</p>	<p><b>Reporting Period:</b> 2021-2022  <b>Result Type:</b> Still In Progress  Using Veera Bridge dataset "Student Roster - Current Enrollment":  44.9% &gt;= 25  30.4% non-white</p>	<p><b>Use of Results:</b> Need to continue to recruit non-traditional students other than just males recently out of high school. (06/30/2022)</p>

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<p><b>Start Date:</b> 08/31/2020  <b>Targeted Completion Date:</b> 05/13/2023</p>	<p>3/7/2020 (tracdat / Improve), VEERA?</p> <ul style="list-style-type: none"> <li>43.4% are &gt;= 25,</li> <li>30.8% non-white,</li> <li>13.0% are female</li> </ul> <p><b>Action Start Date:</b> 08/31/2020  <b>Target Completion Date:</b> 05/13/2023  <b>Required Funding:</b> None  <b>Individual Responsible:</b> Program Coordinator</p>	<p>18.8% female</p> <p>Percentages have not changed perceptibly in 2020. (06/30/2022)</p> <hr/> <p><b>Reporting Period:</b> 2020-2021  <b>Result Type:</b> Still In Progress  Spring 2021</p> <ul style="list-style-type: none"> <li>28% are &gt;= 25,</li> <li>17% non-white,</li> <li>7% are female (04/02/2021)</li> </ul> <p><b>Explanation of Results:</b> DC and PC were not able to visit high schools on their campus'.</p>	
<p><b>4.1 Efficiency and Effectiveness -</b>  Expand the assessment process used to satisfy ABET assessment cycle.  <b>Goal Status:</b> Active  <b>Planned Assessment Year(s):</b> 2020 - 2021, 2021-2022, 2022-2023  <b>Start Date:</b> 01/21/2020  <b>Targeted Completion Date:</b> 05/13/2023</p>	<p><b>In Progress -</b> Improve and automate the data gathering process used for the most recent ABET audit.  <b>Outcome (Measure of Success):</b> Ongoing.  <b>Current Information/Data:</b> ABET accreditation good until 2022.  <b>Action Start Date:</b> 08/26/2019  <b>Target Completion Date:</b> 05/15/2021  <b>Required Funding:</b> None  <b>Individual Responsible:</b> Program Coordinator and Chair of Department.</p>	<p><b>Reporting Period:</b> 2021-2022  <b>Result Type:</b> Still In Progress  Progress has been made in improving the data gathering process for ABET, but no automation has been put in place. (06/30/2022)</p> <hr/> <p><b>Reporting Period:</b> 2020-2021  <b>Result Type:</b> Outcome Not Achieved  No progress has been made to this point. (04/02/2021)</p>	<p><b>Use of Results:</b> With the help of the Computer Science PC, FT faculty will investigate automated data collection to reduce the manual workload for ABET data collection. (06/30/2022)</p> <hr/> <p><b>Use of Results:</b> Based on what has happened to date, we hope to lean on Professor Gamrat's work to automate the process using canvas. (04/02/2021)</p>
	<p><b>In Progress -</b> Work to get CEG program re-accredited by ABET.  <b>Outcome (Measure of Success):</b> Goal is to officially apply by 5/2021  <b>Current Information/Data:</b> was previously accredited, but is not accredited at this time  <b>Action Start Date:</b> 08/26/2019  <b>Target Completion Date:</b> 05/21/2021  <b>Required Funding:</b> None  <b>Individual Responsible:</b> Program Coordinator and Chair of Department.</p>	<p><b>Reporting Period:</b> 2021-2022  <b>Result Type:</b> Still In Progress  Department graduated 5 CET students, so it is now possible to pursue ABET accreditation for the CET program. (06/30/2022)</p> <hr/> <p><b>Reporting Period:</b> 2020-2021  <b>Result Type:</b> Partially Complete  Waiting for the first program graduate to complete, expecting completion in the coming months. PC will complete application to ABET afterwards. (04/02/2021)</p>	<p><b>Use of Results:</b> After EET ABET re-accreditation is complete, the department will pursue accreditation for the CET program. (06/30/2022)</p>
	<p><b>In Progress -</b> Work to get CEG program re-accredited by ABET.</p>		

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	<p><b>Outcome (Measure of Success):</b> Goal is to officially apply by 5/2022</p> <p><b>Current Information/Data:</b> was previously accredited, but is not accredited at this time. waiting for first program graduates before application process can begin</p> <p><b>Action Start Date:</b> 05/26/2021 <b>Target Completion Date:</b> 05/21/2022 <b>Required Funding:</b> None <b>Individual Responsible:</b> Program Coordinator and Chair of Department.</p>		
<p><b>4.2 Efficiency and Effectiveness -</b> Replace 3 defective and irreparable Bench Power Supplies plus the other older ones <b>Goal Status:</b> Active <b>Planned Assessment Year(s):</b> 2020 - 2021 <b>Start Date:</b> 02/03/2020 <b>Targeted Completion Date:</b> 05/15/2021</p>	<p><b>In Progress -</b> Research vendors for comparable replacements <b>Outcome (Measure of Success):</b> Getting most recent pricing from vendors. <b>Current Information/Data:</b> Found that Keysight Technologies offers a new replacement design. This funding is already included as part of the program plan, Section 1.2, Goal 1 so this is not an additional funding request. <b>Action Start Date:</b> 02/03/2020 <b>Target Completion Date:</b> 05/15/2021 <b>Required Funding:</b> 0 <b>Individual Responsible:</b> Program Coordinator and Chair of Department.</p>	<p><b>Reporting Period:</b> 2021-2022 <b>Result Type:</b> Still In Progress Department has received permission to order 19 power supplies for the new EET lab. The order has not been placed yet. (06/30/2022)</p> <hr/> <p><b>Reporting Period:</b> 2020-2021 <b>Result Type:</b> Outcome Not Achieved Still repairing dated equipment due to budget restrictions. (04/02/2021)</p>	<p><b>Use of Results:</b> As soon as possible, the department will get multiple quotes, then purchase the power supplies. (06/30/2022)</p>
<p><b>4.3 Efficiency and Effectiveness -</b> Replace 40 year old LCR meters with 3 new ones. <b>Goal Status:</b> Active <b>Planned Assessment Year(s):</b> 2020 - 2021 <b>Start Date:</b> 02/03/2020 <b>Targeted Completion Date:</b> 05/15/2021</p>	<p><b>Not Completed -</b> Research vendors for updated replacements. This is already included in Program Plan Section 1.2 Goal 1. <b>Outcome (Measure of Success):</b> Getting most recent pricing from vendors. <b>Current Information/Data:</b> Keysight Technologies offers a newer design.</p>	<p><b>Reporting Period:</b> 2021-2022 <b>Result Type:</b> Outcome Not Achieved Have not budgeted for new LCR meters. (06/30/2022)</p> <hr/> <p><b>Reporting Period:</b> 2020-2021 <b>Result Type:</b> Partially Complete Plan to purchase a new LCR meter in spring 2021 with current AY21 budget. (04/02/2021)</p>	<p><b>Use of Results:</b> The FT faculty will research current pricing and decide on a plan of action. (06/30/2022)</p>

<i>Department/Program Goals</i>	<i>Actions</i>	<i>Progress Report</i>	<i>Use of Results</i>
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**Action Start Date:** 02/03/2020  
**Target Completion Date:** 05/15/2021  
**Required Funding:** 0  
**Individual Responsible:** Program Coordinator and Chair of Department.