Student Outcomes Assessment and Success Report AY2019-20 ***Deans will submit reports to the Office of Assessment & Accreditation by October 15.***
Degree Program Name: **E960 – Master of Science: Electronics & Computer Technology (MS-ECT)**
Contact Name and Email Dr. William Clyburn; Graduate Program Coordinator -- William.Clyburn@indstate.edu

Part One/A Summary of Assessment Activities

a. What learning outcomes did you assess this year? If this is a graduate program, indicate the Graduate Student Learning Outcome each outcome aligns with.	**b. (1) What method(s) did you use to determine how well your students attained the outcome? (2) In what course or other required experience did the assessment occur?**	**c. What expectations did you establish for achieve-ment of the outcome? A minimum of 75% of the class will demonstrate the following proficiencies:**	**d. What were the actual results? n = 8 students Overall course results: A = 2 B = 1 A- = 3 F = 2 [See Note 2]**	**e. What changes or improvements were made or will be made in response to these assessment results or feedback from previous year's report?**
1. Students demonstrate professional level oral communication proficiencies.	ECT 679 Technical project portfolio, & presentation, or ECT697 Oral defense. (10% of assessment rubric)	Professionally communicate results of a professional research study in oral format to an 85% (B-Level) effectiveness. [See Note 1]	6/8 (75%) were rated as 85% or greater effective in oral communication skill. (ACHIEVED)	Program results are given to IAB committee for review and feedback, & assessment data are shared with graduate faculty. No changes deemed necessary.
2. Students demonstrate professional level written communication proficiencies.	ECT 679 Technical project portfolio, & presentation, or ECT697 Final paper. (40% of assessment rubric)	Professionally communicate results of a professional study in written format to an 85% (B-Level) effectiveness. [See Note 1]	5/8 (62.5%) were rated as 85% or greater effective in written communication skill. (NOT ACHIEVED) [See Note 3]	Program results are given to IAB committee for review and feedback, & assessment data are shared with graduate faculty. No changes deemed necessary.
3. Students achieve mastery of the knowledge, and/or skills required in their discipline or profession.	ECT 679 Technical project portfolio, & presentation, or ECT697 Final paper. (25% of assessment rubric)	Show in depth knowledge of the ECT field and current topics to an 85% (B-Level) effectiveness. [See Note 1]	6/8 (75%) were rated as 85% or greater effective in technical knowledge related to their concentration. (ACHIEVED)	Program results are given to IAB committee for review and feedback, & assessment data are shared with graduate faculty. No changes deemed necessary.
4. Students demonstrate effective applications of research methodology skills in their discipline or profession.	ECT 679 Technical project portfolio, & presentation, or ECT697 Final paper. (25% of assessment rubric)	Apply appropriate research methods to project manage-ment to an 85% (B-Level) effectiveness. [See Note 1]	6/8 (75%) were rated as 85% or greater effective in knowledge & application of research methods. (ACHIEVED)	Program results are given to IAB committee for review and feedback, & assessment data are shared with graduate faculty. No changes deemed necessary.

NOTE: (1) 85% effectiveness represents the minimum level of achievement (3.0 Cumulative GPA) to graduate from a MS program at ISU.
NOTE: (2) The 2 students (25%) who received failing grades either did not submit a final portfolio, or did not submit a project proposal for defense.
NOTE: (3) For over half of these students, English is not their first language, also the 'n' of the assessment is small (8) so that each student represents a disproportionate factor (12.5%) when examining mean results. Examination by mode (A-) shows that overall results were acceptable as inability to achieve the

goal represents one student's writing skills. As written skills form the largest proportion of the assessment rubric (40%), underperformance here has a more significant impact on outcomes than in any other area. The faculty feel this is a 'special' cause and not indicative of a 'systemic' cause in the program.

Part One/B Review of Student Success Data & Activities:

MS-ECT E960	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020
Full-time Students	29	17	19	15	17
Part-time Students	19	16	12	11	10
Student FTE	31.5	19.5	21.0	16.2	17.8
Student SCH (Fall official)	288.0	204.0	219.0	156.0	210.0
Degrees Conferred	65	27	16	15	14
New Students	10	13	9	11	7
Completed	93.3%	94.5%	98.8%	93.0%	NA
Not Completed	6.7%	5.5%	1.3%	3.5%	NA
In Progress	0.0%	0.0%	0.0%	3.5%	NA

Institutional data shows the program success rate at student completion is averaging 94.9% over the past four years; and that students admitted are typically graduating from the program within the allowed time frame by the CGPS.

What worked well in supporting student success this year?
The current capstone requirements appear to be successful at meeting educational objectives of the program. As pointed out earlier, the two students who did not achieve B level or higher success in the courses did so not out of submitting inferior quality work but by not submitting any course deliverables for evaluation. Whether this can partially be attributed to the disruption of the normal semester activity due to the institutional and societal response to Covid-19 is unknown at this time. The one area of concern for students who submitted deliverables is technical writing skills as many of the students in the program are internationals and English is not their first language. Technical writing which blends reporting the results of projects involving technical development in the ECT field with appropriate research methodology is a difficult skill to master and represents 40% of the evaluation rubric. All students are encouraged to make use of available resources through ISU to improve their writing skills. However, (a) the student must show the initiative to seek out and avail themselves of help; and (b) those services were interrupted during the Spring semester by the Covid-19 response which may have acted as a factor.

What are the most significant opportunities for improvement upon which to focus in the coming year?
(1) Movement towards establishing a 4+1 option for the MS program to couple with our undergraduate programs.
(2) Increasing brand recognition of our undergraduate programs through ABET-ETAC accreditation to make them more attractive to perspective students; and the possible opportunity for a carryover effect to the MS program. This has been delayed to next academic year due to the cancellation of scheduled training courses for faculty self-study development in the Spring semester due to Covid-19 concerns.

Part Two: Continual Quality Improvement
Internal Assessment by ECET Department shareholders: MS-ECT program assessment by ECET Graduate Faculty has been positive overall that we are meeting the needs of our students while maintaining appropriate rigor and quality of instruction within the program. Reviews of student course evaluations, and discussions with our Industrial Advisory Board (IAB) members support this assessment, with due regard for challenges facing the program as outlined below.

Accomplishments: Long term planning and development activity underway was necessarily suspended due to concerns created by the Covid-19 pandemic and subsequent campus shutdown which required faculty to focus on immediate needs.

Challenges: A remaining concern is the drop in student enrollment where new admissions are not making up for losses through graduation. This can be traced to trends in STEM area graduate programs nationwide, and decreased numbers of high school graduates entering higher education programs in Indiana. The MS-ECT program is a technology program in computer related fields and as such attracts a large number of international students with engineering degrees in the electronics and computer field, as well information technology. This potential international population to draw from suffered a large decrease in past years due to international financial and political uncertainty. This affected all institutions in the US, not just ISU. Return of international student admissions was seeing a recovery in the Fall 2019 semester when the Covid-19 situation caused further concerns and uncertainty. Of equal concern is the challenge that is faced by budget cuts reducing resources available to faculty to engage in maintaining modern laboratory facilities, and professional development by faculty to stay current in the field; as well as to promote the program.

Part Two/A: Summary of Student Success Activities 2019-20
Based on the results of your assessment of student learning outcomes from Part 1 above, reflect on how this data will impact student success within your unit/program.

a. What goals/objectives were established this past year to aid student performance, retention, persistence, and completion?	**b. What primary action steps were taken to make progress on each goal and who was responsible?**	**c. What data informs progress on each goal?**	**d. What were some accomplishments or achievements for each goal and/or challenges confronted?**	**e. Please indicate goals that are continuing and any goals that will replace a previous goal.**
1 Continue update of available equipment systems to support advanced learning.	Laboratory equipment needs were assessed and prioritized. Available funding was assessed.	Surveys of equipment usage range, length of use, maintenance needs, flexibility of use across multiple courses.	Upgrades were made to the process control laboratory equipment; repairs and upgrades were made to the Robotics & Automation laboratory.	Continuing; evaluation of needs for more specialized training equipment will be made and the practicality of funding to upgrade.
2 Increase enrollment in the program at all levels.	Discussions with faculty & administration (COT & CGPS)	Review of current enrollment and projections from current admission requests	No dedicated budget to support recruitment. Faculty heavily engaged in primary duties. Concerns from Covid-19.	Continuing; major budget cuts have made the prospect of funding more difficult
4 Accreditation of UG programs that can act as a 'Feeder' to the MS	Review of ABET criteria for program accreditation	Self study preparation by faculty and review by ABET	Commitment by faculty and COT administration to proceed, support funding/release time needed to implement.	Continuing; accreditation training delayed by Covid-19 concerns. Earliest dates for accreditation will be Fall 2021
5 Restructure of UG curriculum to better support 4+1 programs	Review by the faculty coordinators to restructure curriculum	Discussions & input by faculty to coordinate curriculum restructuring	Support from faculty, chair and COT Dean	Continuing; goal is to have in place for Fall 2021.

Thank you so much for sharing your assessment process and findings for AY 2019-20 with the Assessment Council. You will find feedback and ratings on the rubric below. It is understood that some of the feedback might encompass practices that you already engage in but were not documented in this report. As the purpose of this evaluation is focused on recognizing great work and helping faculty improve assessment practice, it is not necessary to retroactively add documentation. Please feel free to let me know if you have any questions or if there is any way I can assist you in further developing assessment practice and use in your program.

This report will be shared with the Associate Dean(s) and Dean of your college and summarized findings will be shared as composite college/institutional data with the President's Office and the Provost's team.

Sincerely,

Kelley (x7975)

Program: M.S. Electronics and Computer Technology	**Overall Rating: Mature (2.38/3.00)**
Strengths	**Recommendations**
• Learning outcomes are clear, specific, and measureable. • Significant, professionally-relevant assignments are used as direct measures of student learning. It is clearly indicated that a rubric is used to evaluate student performance, and dimensions of the rubric are specifically aligned to learning outcomes to ensure accuracy of the findings. • Expectations for student performance are clear. • Actual student performance is clearly described, including notes on analytical interpretations due to small sample sizes. • Analysis of findings includes insights into challenges that may affect student attainment of expectations. • Clear information is provided about how assessment findings are shared.	• Note how learning outcomes align with the Graduate Student Learning Outcomes to demonstrate graduate-level rigor as expected by CGPS (see here: https://www.indstate.edu/assessment/learning-outcomes-library). • Since you are using a rubric, consider reporting by how many students achieved each level of the rubric for that specific outcome. This will help you see the range of scores and may be more appropriate to the smaller sample size. It can also help you better target areas for formative feedback to improve the final performance. • You noted using two measures – the technical project in ECT 679 and the oral defense in ECT 697, but only one set of scores is reported for each outcome. Make sure to clarify if this is a composite score and, if so, how you ensure outcome alignment. Otherwise, make sure to report both sets of data and whether a rubric was used for both. • It seems clear that improving the writing of students who speak English as a second language may be a priority. Consider strategies for boosting the support students can receive from a suggestion to an expectation (even if not an official expectation) by sharing the data or working with a alumni to promote the services available.

Student Outcomes Assessment & Success Report Rubric **Unit/Program: MS ECT**
Office of Assessment & Accreditation, Indiana State University **Evaluation Date: Fall 2020**

Evaluation Criteria	3 Exemplary	2 Mature	1 Developing	0 Undeveloped
Student Learning Outcomes	Identified, aligned learning outcomes are specific, measurable, student-centered, and program-level. Outcomes directly integrate institution or college-level learning goals. Outcomes are consistent across modes of delivery (if applicable). More than one outcome is assessed this cycle, and rationale is provided for why they were selected for assessment.	Identified, aligned learning outcomes are specific, measurable, student-centered, and program-level. Outcomes support institution or college-level learning goals. Outcomes are consistent across modes of delivery (if applicable). At least one outcome is assessed this cycle, and rationale is provided for why it was selected for assessment.	Learning outcomes are identified and alignment with courses is demonstrated. Outcomes are consistent across modes of delivery (if applicable). At least one outcomes is assessed this cycle.	No ***(program)*** learning outcomes are identified, and/or alignment of learning outcomes to courses is not demonstrated (e.g. – curriculum map).
Performance Goals & Measures	Performance goals are clear and appropriate, and rationale is provided for why these were selected. Identified measures and tools are assigned to each outcome, are clear and intentionally designed to address student performance on aligned outcomes, and rationale and examples are provided (e.g. – rubrics, checklists, exam keys). Most are direct measures, and their design enhances the validity of findings. Licensure exams and high-impact practices are reflected in measures (if applicable).	Performance goals are clear and appropriate. Identified measures and tools are assigned to each outcome, are clear and intentionally designed to address student performance on aligned outcomes, and examples are provided (e.g. – rubrics, checklists, exam keys). At least one direct measure is included.	Performance goals are identified with little rationale or clarity. Identified measures are poorly suited to performance goals, underdeveloped, or are solely indirect measures.	No goals for student performance of learning outcomes are identified, and/or no measures are provided.

Analysis & Results	Data collection process is clear and designed to produce valid/trustworthy results. The process is useful to those collecting and/or interpreting data. Data is collected and analyzed with clear rationale and description. Results are provided with thoughtful discussion of analysis and description of conclusions that can be drawn.	Data collection process is clear and designed to produce valid/trustworthy results. Data is collected and analyzed with clear rationale and description. Results are provided with some discussion of analysis.	Description of data collection is unclear as to process and quality. ***(see note in recommendations)*** Some data is collected and analyzed with little rationale or description. Some results are provided with no discussion of analysis.	No information is provided about the data collection process, and/or no data is being collected. No results are provided
Sharing & Use of Results for Continuous Improvement	A plan for sharing information and included program faculty and appropriate staff in discussion and planning is detailed and enacted. Outcomes and results are easily accessible on the program website or other appropriate designated area. Plans for improvement or change based on results are clear and connected to results. If few students met performance goals, this is included in discussion and plans. Reflection if offered about results or plans moving forward, and compares prior year plans to current outcomes in an effort to foster continuous improvement as a result of assessment process.	A plan for sharing information broadly across program faculty is detailed and enacted. Plans for improvement or change based on results are clear and connected to results. If few students met performance goals, this is included in discussion and plans. Reflection is offered about results or plans moving forward.	Information is provided about sharing results, but sharing is limited in scope or content. Plans for improvement or change based on results are incomplete, vague, or not clearly connected to results. Little reflection is offered about results or plans moving forward.	No information is provided about sharing results and/or plans for improvement or change based on results. No evidence of reflection on results in provided.
Overall Rating	□ **Exemplary**	□ **Mature**	□ **Developing**	□ **Undeveloped**

Please see reviewer notes for more details.