AC 2008-774: A STUDY TO ESTABLISH A MASTERS DEGREE PROGRAM IN ELECTRONICS AND COMPUTER TECHNOLOGY AT BOWLING GREEN STATE UNIVERSITY

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A Study to Establish a Masters Degree Program in Electronics and Computer Technology at Bowling Green State University

Abstract

This paper presents the results of a study conducted to assess the feasibility of establishing a master's degree in Electronics and Computer Technology (ECT) program at Bowling Green State University (BGSU), Ohio. Following an informal market analysis for the need of such a degree program, a review of ten technology masters programs in ECT related areas at different universities was conducted to find the curriculum of the existing programs. Survey questionnaires were then administered to three groups of subjects: graduating seniors, alumni, and industrial representatives, after proper human subjects review board (HSRB) approval. A total of 55 subjects responded to the survey. The data analyzed indicated positive response to establish the masters program in ECT at BGSU. On a Likert scale of 1 to 5, the three groups of respondents ranked 4.02/5.0 in favor of establishing a master's degree. For a question on the type of degree, 33.33 percent of the respondents indicated their interest for a Master of Science (MS) degree in ECT while 20.37 percent favored ECT specialization in Master of Industrial Technology (MIT), and 46.30 percent of the respondents did not have preference for the type of degree. The response to the interest in the inclusion of blended instruction of courses that are partially online and partially face-to-face was better (3.85/5.0) than that of complete online courses (3.64/5.0) for the degree program. Response to the inclusion of laboratory activity in the degree program received the highest rating (4.44/5.0). Respondents preferred to have a thesis/major project as a part of the degree rather than taking additional courses, by giving the lowest rating of 3.16/5.0 for additional courses. Respondents' choices of the possible ECT specialization courses were ranked into three categories. A mixture of computer networking and control systems courses were the top choice courses among the 18 possible courses. The paper describes this survey results in detail.

I. Introduction

The U.S. Department of Labor[17], Bureau of Labor Statistics[16] predicts a 23.4 percent increase in job openings that require a master's degree during 2000-2010. While there are many master's degree programs in engineering in U.S. universities, there is a shortage of master degree programs in technology[13]. Bowling Green State University (BGSU) offers an undergraduate specialization in Electronics and Computer Technology (ECT) in its Bachelor of Science in Technology degree. Though it offers a Master of Industrial Technology (MIT) degree with specializations in Manufacturing and Construction Management, it has no specialization in ECT. Interested ECT students at BGSU have opted for the Manufacturing specialization to get a graduate degree by completing the synthesis experience on ECT related topic. Others have moved to a limited number of technology graduate programs available in ECT area elsewhere. A small number of students have also joined masters programs in engineering by taking needed extra math and science courses. All these students would have benefited if there were a master's degree in ECT at BGSU.

As a result of shortage of skilled technology professionals, many regional institutions and national governments have made the provision of technology services an important element in their economic development strategies[14]. While others have modified their technology programs or undertaken institutional assessment to make up for this shortage, many educational institutions have established advanced degrees in technology related programs. For example, Kaminski[6] discussed the development of Master of Science degree in engineering technology at Central Washington University. An approach to the assessment of an innovative masters program at the School of Technology, Purdue University was discussed by Latif, et al.[8]. Based on their assessment, they concluded that graduates reported satisfaction with the program and indicated that it met their expectations. Ferguson, et al.[5] from Western Carolina University discussed in their article, "Engaging Industry in Graduate Engineering/Technology Education," the approaches graduate education can take to address the growing need for technically prepared leaders in engineering/technology fields. Belcher[1] conducted a study that surveyed current and potential graduate students on the obstacles they face, services they want, the reasons they might have for attending graduate as well as the perceptions of Boise State University that might influence their decision to begin or continue graduate study. This reference cited the use of survey instrument administered to graduate students, undergraduate seniors with good grade point average, and individuals mainly working in the field of technology and education in Boise area. The survey looked at capturing the perceived needs in graduate education and institutional assessment. A relevant perspective was given by Mohammed et al.[10] on the issues in hands-on online graduate programs in information technology. In that paper the authors described the demand for online graduate programs in various engineering and technology fields. They argued that, there is greater number of working professionals needing graduate study, but cannot afford the traditional in-class education as a result of their job, family, or distance limitations.

This paper presents the results of a study conducted to assess the feasibility of establishing a master's degree in ECT program at BGSU. Following a review of graduate programs at ten universities in Section II, the details of MIT program at BGSU is given in Section III. Informal market analysis details are given in Section IV. Section V describes the methodology followed in this study. An analysis of this survey results and findings from this analysis are presented in Section VI. Concluding remarks are offered in Section VII.

II. Master's Degree Programs in ECT Related Areas

A limited number of universities currently offer master's degree programs in technology with specialization in electronics/electrical and computer technology area. These programs are usually affiliated with departments of industrial technology or engineering technology. A list of ten selected universities is given below.

1. Indiana State University – Master of Science in ECT
2. Arizona State University – Master of Science in Technology
3. Southern Polytechnic State University – Master of Science in ECET
4. University of North Texas – Master of Science in Engineering Technology
5. The University of Memphis – Master of Science in Engineering Technology
6. North Carolina A&T State University – Master of Science in Industrial Technology

7. Kent State University – Master of Technology
8. Purdue University – Master of Science in ECET
9. East Carolina University – Master of Science in Industrial Technology
10. University of Houston – Master of Technology in Network Communication

These universities were selected from the Peterson's Guide to Graduate Study[13] and web searches based on similarity to the BGSU's existing MIT program. Data for these ten programs were collected from the university catalogues and college web pages[9]. An analysis of the program areas, selected courses, and some general information from the ten universities provides the following:

1. Majority of these universities offer a Master of Science degree.
2. Majority of these universities offer both thesis and non-thesis options.
3. Many of these universities offer masters degrees in traditional electronics areas while the information technology area is becoming popular.
4. Most of these universities are offering on-campus degrees while a couple of them have courses offerings on-line.
5. There is an equal split between Engineering Technology and Industrial Technology programs.
6. Industrial Technology programs have a core consisting of statistics and research methods courses, while Engineering Technology programs have more technical concentration courses.

The analysis of these similar universities provided a feedback on how best to design the survey questionnaire to find the feasibility of establishing the master's degree program in ECT at BGSU.

III. Master of Industrial Technology Degree Program at BGSU

The Master of Industrial Technology graduate degree was established at BGSU in 1988. The program is designed to accommodate the needs of students and to respond to the requirements of industry for advanced technical and managerial personnel[4]. The program has two specializations: Manufacturing Technology and Construction Management. To meet the degree requirements, students have to take courses in four component areas. These component areas are

Technology Core
Business Operations
Synthesis Experience
Technology Concentration

The Technology Core consists of three courses of three-credit hours each. All students take TECH679 Research and Development and TECH644 Management Models for Technical Operations courses. The third core course can be selected from: TECH633 Visual Communication for Business and Industry, COMS653 Interpersonal Communication, COMS655 Organizational Communication or ENG640 Technical Writing.

The Business Operations component also consists of three courses of three-credits each. Students take courses from the College of Business Administration to satisfy this requirement. These courses include STAT 601 Statistics for Managerial Decisions, and any two courses from the list: ECON 600, MBA 600, MBA 601, MBA 602, MBA 603, MBA 604, MBA 606, MBA 607.

The Synthesis Experience consists of six credit hours. This can be completed as either TECH699 Thesis or TECH691 Project. Students work on a complex technical problem in the area of their specialization in the synthesis experience. Generally these problems have been in Manufacturing, Construction Management, Electronics & Computers, and other areas. So far around 95 thesis/projects were completed; around 15 of them were in Construction Management area, 15 of them were in Electronics & Computer Technology area and remaining ones are in Manufacturing related areas.

The Technical Concentration component consists of five three-credit hour courses. These courses[3] are selected in the area of specialization. Students in manufacturing area select 600 level courses from the following list:

TECH602 Instrumentation and Control
TECH604 Technology of Concurrent Engineering
TECH628 Computer Automated Manufacturing
QS616 Quality Culture Assessment
QS626 ISO/QS Data-Based Quality Systems
QS627 ISO/QS Documentation/Productivity Analysis

Construction Management students select 600 level courses from the following list:

TECH641 Construction Contract Management
TECH642 Construction Program Management
TECH643 Cost Control Through Management of Pre-Construction Activities
TECH682 Topics in Technology

While there is no specialization in Electronics and Computer Technology, interested ECT students selected courses from the following list and completed the degree with manufacturing specialization:

TECH602 Instrumentation and Control
TECH682 Process Control in Networked Environment
TECH684 Artificial Intelligence Techniques
TECH682 Data Compression, Coding and Security
ECT586 Digital Communication and Computer Networking
CS629 Networks and Distributed Processing

Two studies were completed to asses the progress of the MIT degree at BGSU. The first one looked at the Manufacturing specialization[18]. The second one was regarding the Construction Management specialization[7]. The primary objective of the Zargari's study[18] was to obtain data concerning the MIT curriculum from professionals involved in manufacturing industries. A survey was done with the Society of Manufacturing Engineers (SME) chapter officers and SME student chapter faculty advisors in the Ohio Valley region. The analysis of the collected data indicated that the highest priority should be placed on the technical and research content in the manufacturing specialization of MIT[18]. The purpose of Kasonka's study[7] was to determine the

reasons for low enrollment in the MIT construction management program at BGSU and to develop recommendations regarding curriculum content, prerequisites and admission requirements, course delivery methods, and program promotion in order to enhance the program enrollment. A questionnaire was distributed to 1) the alumni of the construction management graduate and undergraduate programs, 2) to construction colleagues of these alumni, 3) to professionals who work for Construction Companies. As a result of the study, the following recommendations were made: 1) The construction management curriculum content should stay flexible and adjustable to the needs of the students, 2) The delivery methods should be adjusted to the conditions of the potential students, 3) A promotional plan should be designed to target a wider audiences, 4) BGSU should consider accrediting the program with an aligned accrediting body in future, and (5) More effort must be allocated toward informing potential students about the existence of the Construction Management program[7]. The study in this paper looks at the feasibility of establishing a master's degree in ECT program at BGSU.

IV. Market Analysis

The literature review indicated that the trend in our increasingly advanced technological society is toward advanced degrees[2]. The U.S. Department of Labor[17], Bureau of Labor Statistics[16] predicts a 23.4 percent increase in job openings that require a Master's degree during 2000-2010. To provide individuals capable of assuming technical positions in industries, some institutions have established master's degree programs in electronics/computer technology. An overview of examples of these graduate programs indicated that the programs focus primarily on meeting industrial needs. However such programs are not available in our local Northwest Ohio region[12].

Before conducting a formal survey, informal market analysis was done to find the potential student population for a master's degree in the ECT program at BGSU. Two sources were used for this informal market analysis: 1) the Industrial Advisory Committee of the ECT program, 2) the previously graduated Electronics and Computer Technology students with MIT degree from BGSU. The industrial advisory committee members of ECT program include local industrial leaders from Marathon Petroleum, Buckeye Cable. Some of these industries sponsored several of their employees to complete MIT degree at BGSU. The committee had unanimously recommended establishing a master's degree in ECT during several of their meetings. They envisioned that the potential students to the program would include employees of their companies.

Around 15 students with Electronics and Computers background have already completed their MIT degree at BGSU with Manufacturing specialization. These students had completed their synthesis experience on ECT related topic. ECT program faculty offer graduate courses for these students routinely in their area of interest. Following is a partial list of recent theses/projects completed by these students.

1. John Bork, "Reverse engineering a microcomputer-based control unit," Masters Thesis, Bowling Green State University, 2005.

2. Shawn Altman, “Real-time implementation of a fault identification scheme for a three-phase induction motor using artificial neural networks,” Masters Thesis, Bowling Green State University, 2004.

3. Jiang Wu, “The development of a remote time tracking system on palm OS device for electric falcon,” Masters Project, Bowling Green State University, 2003.

4. E. Rezaei, “Application of LabVIEW for internet based instrumentation and process control,” Masters Project, Bowling Green State University, 2002.

5. M. Hui, "Building a client/server media distribution system," Masters Project, Bowling Green State University, 2001.

Based on the market analysis information from these two resources, there is a potential demand for a graduate program in ECT. The formal survey results in the next sections ascertain this demand further.

V. Methodology

The following steps outline the methodology that was followed to achieve the objectives of this study:

1. Identify the subject that will take the survey.
2. Create the questionnaire and pilot test it.
3. Administer the survey.
4. Analyze the collected data of the survey.
5. Draw recommendation’s regarding master’s degree program in ECT.

Identification of Subjects

Three different subjects groups were identified to directly benefit from the establishment of this degree program in the ECT. These groups included potential students to the ECT master’s program, MIT alumni, and industrial representatives. The potential students are graduating seniors of the current ECT undergraduate program. The most relevant MIT alumni for this study are the students that completed the MIT with a thesis/project in ECT related topics. Other students that completed MIT with manufacturing specialization are also included, but not the construction MIT students. The industrial representatives were selected from the co-op employers in ECT, automotive and other manufacturing areas.

Questionnaire Design and Validation

Several members of faculty within the ECT program, MIT-Construction Management program as well as the MIT-Manufacturing Technology program at BGSU were consulted to assist in the creation of a list of items relevant to the establishment of the ECT masters program. In addition, information gathered from the ten universities that have similar master’s programs was also used in creating the questionnaire. These list of variables included i) whether there should be a

master's program in ECT, ii) curriculum content of the master's degree program, iii) delivery methods as well as other very important variables relevant for the degree program.

Though the questionnaires were designed to suit the different subject groups, they contain common questions that are important for this study. The survey questionnaire to the graduating seniors consisted of 11 items. Two demographic questions were followed by six additional items that aimed at establishing the need for graduate level education. The alumni questionnaire also consisted of 17 items. Seven demographic questions were followed by six additional items also aimed at establishing the need for graduate level education. The questionnaire to the industrial participant consisted of 12 items. These included three demographic questions and five additional items. A 5-point Likert scale was used to respond to survey statement items that appeared in all the questionnaires.

The last survey item asked the participants to use a 5-point Likert scale to determine an order of preference for important topics or areas of courses that may be included in a new graduate degree program. A listing of 18 topics was provided in a random order. The topics were chosen by the investigator to include current curriculum standards as well as other topics that have been used in other electrical/electronic technology or electronics/computer technology master's degree from other institutions. A ranking for these topics may be used to develop future curricula in both current and new programs. Additional narrative comments were sought following each question in the survey. The questionnaires were pilot tested with selected faculty first for content and clarity. The questionnaire was then sent for BGSU Human Subjects Review Board approval. A copy of the instruments used for alumni survey is shown in Appendix.

Administration of the Survey

The questionnaires and a cover letter were sent out to the three groups of potential respondents after the HSRB approval. Each survey was either sent with a self-addressed envelope or electronic mail. Questionnaires were distributed in class to graduating seniors. Once the questionnaires were completed, respondents were asked to send them back to the researcher in the self addressed and stamped envelope or through electronic mail. A follow up e-mail was sent and some phone calls were made to the respondents when the return rate of the survey questionnaires was found to be low. Once a reasonable number of responses were received, the data were analyzed.

Analysis Procedures and Recommendations

To facilitate the analysis of the questionnaire data, a data entry and retrieval system was designed using MS ACCESS. This provided a more effective means of collecting, managing and utilizing the data obtained. It also enabled the investigator to perform a clean query system and data entry quality check. The data was then analyzed using SAS 9.3[15]. The FREQ procedure, MEANS procedure and other statistical procedure are used. Recommendations were developed using the results from the survey and analysis of the collected data. The detailed analysis results and recommendations are presented in the next sections.

VI. Results and Findings

Out of 150 subjects to whom the survey was mailed, 55 responded producing a response rate of 37 percent. All eligible responses were used in the analysis. An analysis of the combined survey rates data collected revealed that, 61.8 percent of the respondents were graduating seniors, 20.0 percent were alumni while 18.2 percent of the respondents were industrial participants as shown in Figure 1.

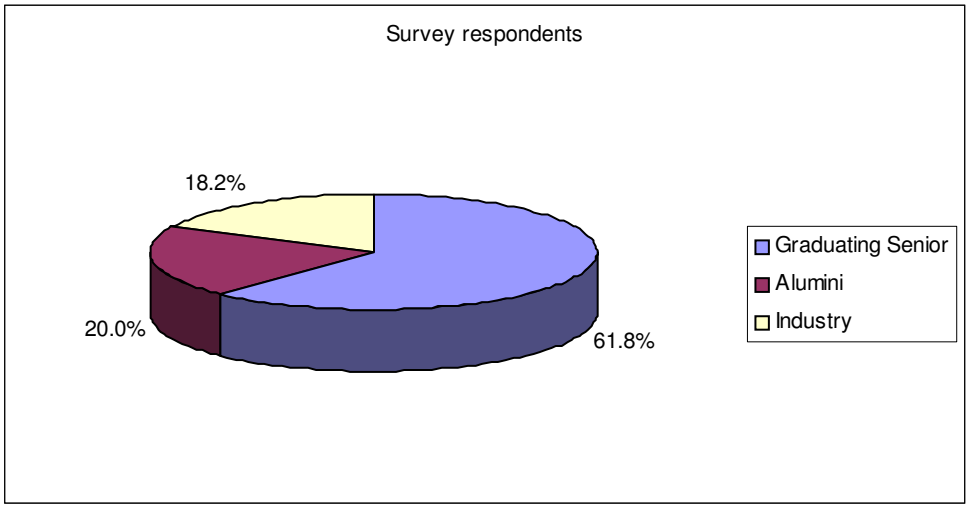

Figure 1: Percentage of different groups of survey respondents.

The main purpose of this study is to identify the need to establish a master's program in ECT. Three different questions in the survey were aimed to answer this. The following question was posed and response was sought on a Likert scale of 1 to 5 (5 being the most favorable):
"Considering that there is no master's degree program in ECT available in NW Ohio, there is a value to establish such a program at BGSU".
There was a positive response resulting in an overall mean of 4.02/5.0 to establish the master's program in ECT. The overall standard deviation for this question is 1.25.

To determine whether this graduate degree should be a specialization in existing MIT program or a different degree, the following question was asked:
"CoT at BGSU currently offers a Master of Industrial Technology (MIT) degree in Manufacturing and Construction specializations. Should the proposed graduate degree in ECT be a specialization in MIT?"
The response was sought as "Yes" in favor of MIT specialization and "No" for not in favor of specialization in MIT. The total response was mixed with 54.7 percent opting for not a specialization in MIT and 45.3 percent opting for a specialization in MIT.

To find whether this graduate degree should be a separate MS degree, the following question was asked:
"Should the graduate degree in ECT be a separate MS degree rather than MIT degree?"
The response was sought as "Yes" for separate MS degree, "No" for not a separate MS degree and "Does Not Matter" to know if it can be either MS or specialization in MIT. 33 percent of the total respondents indicated that they want the graduate degree in ECT to be a separate MS degree

rather than a specialization in MIT degree. 20 percent of the respondents also want it to be MIT specialization while 47 percent responded that it does not matter the type of degree program. What they expect is simply a graduate degree program in ECT.

To find out whether respondents will be willing to advise a person to pursue the degree, the following question was asked:
"Would you advise a person who is interested in pursuing a master's degree in ECT to obtain the degree from CoT at BGSU?"
The response was sought as "Yes" to agree to offer advice and "No" to disagree to offer advice. More than two thirds of the total respondents (83.3 percent) indicated that they would offer advice to a person who is interested in pursuing a master's degree in ECT to obtain the degree from CoT at BGSU whiles 16.7 percent indicated otherwise.

To determine whether graduate assistantship will be necessary for the degree, the following question was asked:
"Would graduate assistantship be an important part of the degree program?"
The response was sought as "Yes" to agree to graduate assistantship and "No" to disagree to graduate assistantship. Most respondents (89.1 percent) agreed that graduate assistantship would be an important part of the degree program whiles 10.9 percent indicated that there would not be any need of graduate assistantship for the program.

The combined scores from the respondents with regards to the survey statements items that relate to delivery methods, need of laboratory activity in addition to lectures in courses, and thesis/project option were presented in Table 1. This table presents the average rating (on a scale of 1 to 5, with 5 being most favorable) of the respondents' support for the eleven statements regarding the need and value to establish a master's degree in ECT, preferred method of delivery, substitution of thesis or project with courses and other related statements. These statements of items were sorted according to the mean ratings of various responses. The statement regarding the inclusion of technical preparation through laboratory activities received the highest support (4.44/5.0) while the statement regarding replacing thesis or research project with 2 or 3 additional ECT related courses received lowest support (3.16/5.0).

The average scores for the 18 electronics/computer technology courses identified in the questionnaire are presented in Table 2. All of the areas of knowledge received an average score greater than or equal to a score of 3.6/5.0. These areas of knowledge had been rank-ordered in terms of their means to prioritize the contents statements. Table 2 arranges the areas of knowledge in terms of their importance to the ECT graduate degree program curriculum. Also, the items of content had been listed in three categories of importance in terms of their mean ratings. Figure 2 displays items with a mean rating of 4.00 or more (Very Important). Furthermore, Figure 3 displays items with a mean rating of 3.85 to 3.96 (Important) while Figure 4 displays items with mean ratings below 3.85 (Moderately Important). Areas of knowledge such as Advanced Networking (A9), Advance Wireless Networks (A8), Network Security (A7), Control Systems and Robotics (A11), Data Compression, Coding and Security (A10), Fiber Optics in Communication and other Applications (A6), Artificial Intelligence Techniques (A17) and Selected Topics in Sensor Networks (A12) received a mean rating of 4.00 and more.

RANKS	STATEMENTS	MEAN SCORE	STD. DEV.
1	Technical preparation through laboratory activity is a valuable part of the graduate degree.	4.44	1.03
2	Considering that there is no master's degree program in ECT available in NW Ohio, there is a value to establish such a program at BGSU	4.02	1.25
3	Thesis/project advisement and support is a valuable part of the graduate degree.	3.89	1.03
4	If some courses in the program have blended instruction, that is a course with partially online and partially face-to-face format, the course would attract more students.	3.85	1.10
5	A research project or thesis is a valuable part of the master's degree curriculum.	3.80	1.31
6	Advising received from major advisor is a valuable part of the graduate degree.	3.80	0.93
7	Technical preparation through lectures is a valuable part of the graduate degree.	3.75	1.06
8	If the graduate degree includes some online courses, the program would attract more students.	3.64	1.14
9	Advising/counseling received from Grad Office in CoT is a valuable part of the graduate degree.	3.60	0.95
10	A master's degree in ECT is a valuable tool to help prepare electronics and computer professionals for upper management positions.	3.58	1.21
11	Replacing the thesis/research project with 2 or 3 additional ECT related courses is valuable for the master's degree curriculum.	3.16	1.38

Table 1: Rank order of statements.

RANK	SUBJECTS	MEAN RATINGS	STD. DEV.
1	Advanced Networking	4.36	1.08
2	Advance Wireless Networks	4.31	1.14
3	Network Security	4.29	1.10
4	Control Systems and Robotics	4.18	0.90
5	Data Compression, Coding and Security	4.11	1.17
6	Fiber Optics in Communication and other Applications	4.09	1.06
7	Artificial Intelligence Techniques	4.05	0.97
8	Selected Topics in Sensor Networks	4.00	1.02
9	Advanced Telecommunications	3.96	1.07
10	Applications of Information Theory	3.93	1.09
11	Applied Digital Signal Processing	3.91	1.01
12	Advanced Digital Logic Design Techniques (FPGA)	3.85	1.24
13	Process Control in Networked Environment	3.85	1.18
14	Energy Power and the Environment	3.76	1.12
15	Industrial Process Controls	3.73	1.18
16	Embedded Controllers	3.71	1.27
17	Instrumentation System Design	3.64	1.22
18	Advanced Electromechanical Systems Analysis	3.60	1.15

Table 2: Rank order of courses.

Areas of knowledge that includes Advanced Telecommunications (A4), Applications of Information Theory (A5), Applied Digital Signal Processing (A3), Advanced Digital Logic Design Techniques (FPGA) (A2) and Process Control in Networked Environment (A16) received a mean rating of 3.80 to 3.99, thus, suggesting these items are important. Items of areas of knowledge such as Energy Power and the Environment (A14), Industrial Process Controls (A13), Embedded Controllers (A1), Instrumentation System Design (A15) and Advanced Electromechanical Systems Analysis (A18) received a mean rating of 3.50 to 3.79, thus, suggesting that these items are moderately important.

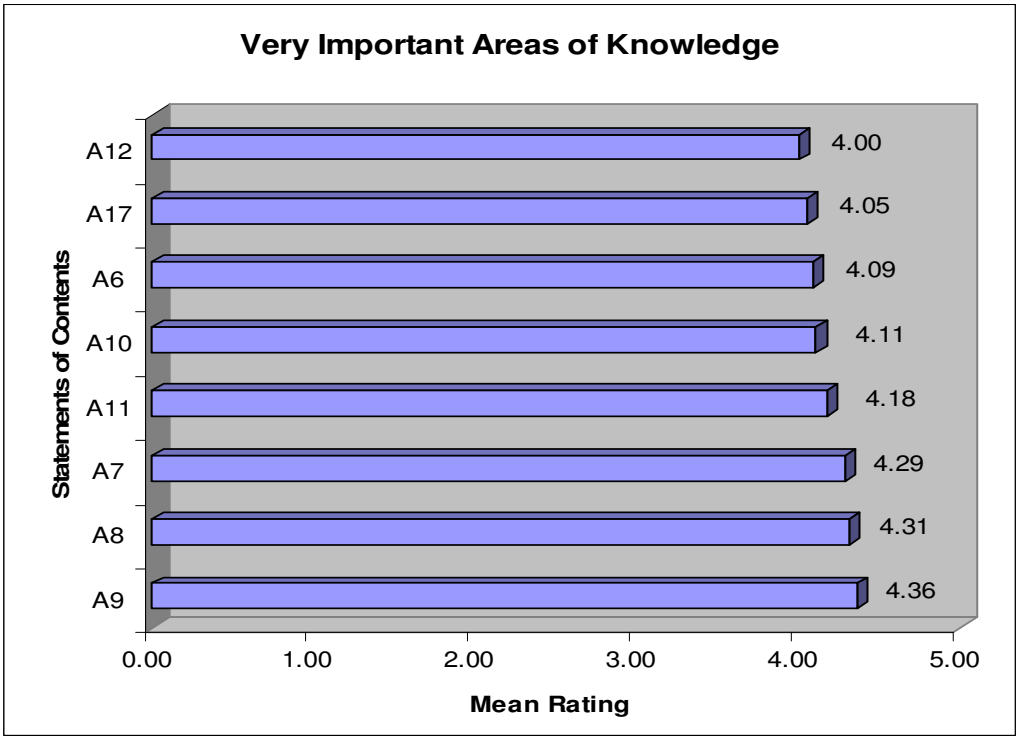

Figure 2: Bar Chart of highest priority areas of knowledge.

VII. Conclusions

This paper presented the results of a study conducted to assess the feasibility of establishing a master's degree in ECT program at BGSU. A review of ten technology master's programs in ECT related areas at different universities was conducted to find the curriculum of the existing programs. Survey questionnaires were then administered to three groups of subjects: graduating seniors, MIT alumni, and industrial representatives, after proper HSRB approval. A total of 55 subjects responded to the survey. The data analyzed indicated positive response to establish the masters program in ECT at BGSU. On a Likert scale of 1 to 5, the three groups of respondents ranked 4.02/5.0 in favor of establishing a master's degree. For a question on the type of degree, 33.33 percent of the respondents indicated their interest for a MS degree in ECT while 20.37 percent favored ECT specialization in MIT, and 46.30 percent of the respondents did not have preference for the type of degree. The response to the interest in the inclusion of blended instruction of courses that are partially online and partially face-to-face was better (3.85/5.0) than

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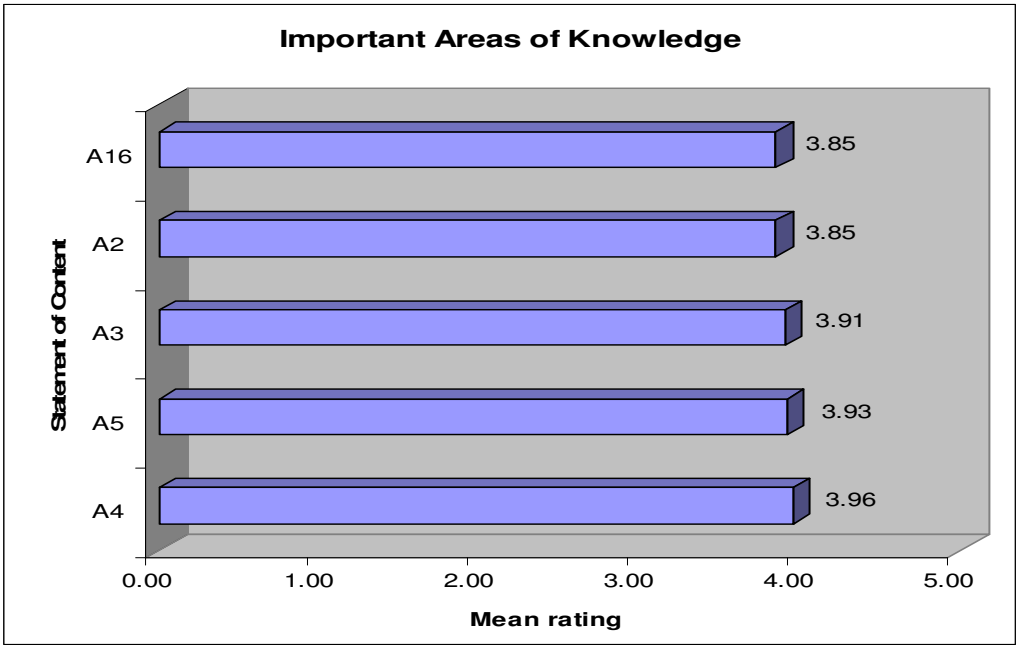

Figure 3: Bar chart of high priority areas of knowledge.

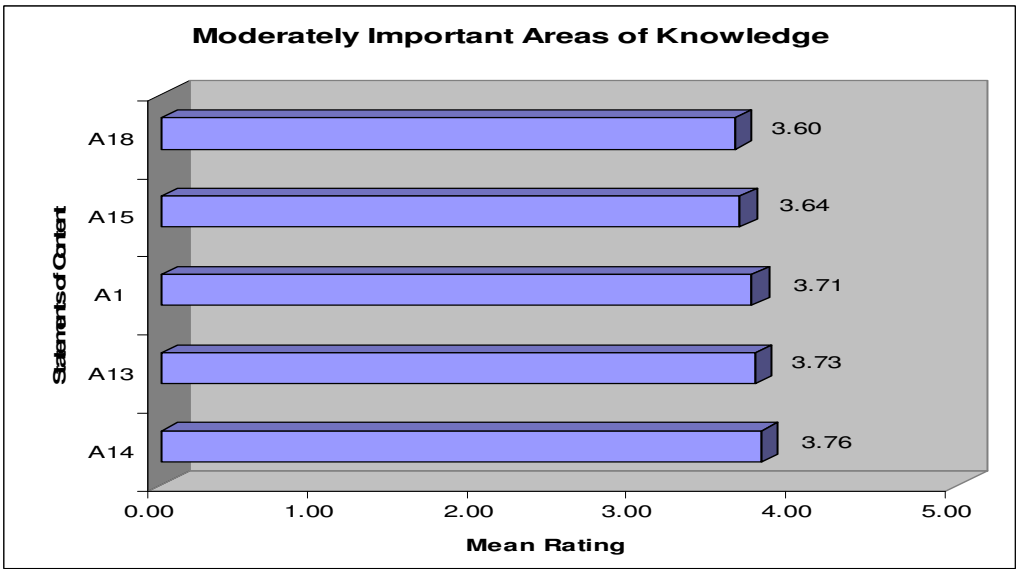

Figure 4: Bar chart of the items with low priority.

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Appendix

Directions: Please respond to the following questions by checking the appropriate box or filling in the blanks. We welcome written comments.

Your graduation date was: Month _____ Year _____

What was your area of concentration during your graduate study at BGSU?
[ ] Manufacturing Technology [ ] ECT [ ] Other:
_____

You currently are: [ ] Employed [ ] Unemployed [ ] Self-employed

Was/Is your job in an area related to your degree specialization in Technology?
[ ] Yes [ ] No

Did your master's degree enhance your job performance? [ ] Yes [ ] No
Explain:_____

Did your master's degree lead to advancement in your career? [ ] Yes [ ] No Explain:
_____
_____

How were you initially informed of the masters program offered by the CoT?
[ ] Advised by a friend [ ] Conference [ ] Website [ ] University personnel
[ ] Other _____

Would you advise a person who is interested in pursuing a master's degree in ECT to obtain the degree from the CoT at BGSU? [ ] Yes [ ] No

Explain:_____
_____

Should there be ECT specialization in MIT? [ ] Yes [ ] No

Should the graduate degree in ECT be a separate MS degree rather than MIT degree?
[ ] Yes [ ] No [ ] Does not matter

If the response is yes, explain the benefits of an MS degree:
_____
_____

Would graduate assistantship be an important part of the degree? [ ] Yes [ ] No
Explain:_____
_____

Would your organization financially assist its employees in attending ECT master's degree program?
[ ] Yes [ ] No

Please rate the following statements on scale 1-5: (5 being most favorable and 1 being least favorable)

Statements	Rating
A master's degree in ECT is a valuable tool to help prepare electronics and computer professionals for upper management positions.	
A research project or thesis is a valuable part of the master's degree curriculum.	
Replacing the thesis/research project with 2 or 3 additional ECT related courses is valuable for the master's degree curriculum.	
Considering that there is no master's degree program in ECT available in NW Ohio, there is a value to establish such a program at BGSU.	
Technical preparation through laboratory activity is a valuable part of the graduate degree.	
Technical preparation through lectures is a valuable part of the graduate degree.	
Advising/counseling received from Grad Office in CoT is a valuable part of the graduate degree.	
Advising received from major advisor is a valuable part of the graduate degree.	
Thesis/project advisement and support is a valuable part of the graduate degree.	
If the graduate degree includes some online courses, the program would attract more students.	
If some courses in the program have blended instruction, that is a course with partially online and partially face-to-face format, the course would attract more students.	

Please, rate the following areas of knowledge that you think are important for graduate program in ECT on a scale 1-5: (5 being the most favorable and 1 being the least favorable).

Areas of Knowledge	Rating
Embedded Controllers	
Advance Digital Logic Design Techniques (FPGA)	
Applied Digital Signal Processing	
Advanced Telecommunications	
Applications of Information Theory	
Fiber Optics in Communication and Other Applications	
Network Security	
Advanced Wireless Networks	
Advanced Networking	
Data Compression, Coding and Security	
Control systems and Robotics	
Selected Topics in Sensor Networks	
Industrial Process Controls	
Energy Power and the Environment	
Instrumentation System Design	
Process Control in Networked Environment	
Artificial Intelligence Techniques	
Advanced Electromechanical Systems Analysis	

Are there other areas of knowledge you would recommend to be added to the master's degree program in ECT? List:

_____

_____

The CoT would appreciate your constructive comments and recommendations that you feel will help us with our degree offerings. If you desire to elaborate on any of your responses, please do so by indicating the item and then your comments below:

_____

_____