

Memorandum

To: University Senate
From: Eric C. Bielefeld, Chair, Council on Academic Affairs
Subject: Proposal to Establish the Bachelor of Science in Engineering Technology Degree
Date: April 15, 2019

A PROPOSAL FROM THE COUNCIL ON ACADEMIC AFFAIRS TO ESTABLISH THE BACHELOR OF SCIENCE IN ENGINEERING TECHNOLOGY DEGREE, COLLEGE OF ENGINEERING, FOR THE LIMA, MARION, MANSFIELD AND NEWARK CAMPUSES

Whereas the degree program was developed in response to the growing needs of regional and state manufacturers for highly skilled college graduates who possess broad training in manufacturing engineering technology and are prepared for plant management roles; and

Whereas the program will begin in Autumn 2020, initially with the focus on Manufacturing Engineering Technology but other concentration areas may be developed with time, and initially at the Lima, Marion, and Mansfield campuses with Newark added later; and

Whereas the regional campuses will assume budgetary responsibility; clinical faculty will assume much of the teaching responsibilities; a Program Coordinator will be appointed and student services are available; and a full curriculum outline has been established; and

Whereas the program was developed with, and has the full support of, the College of Engineering and its College Committee on Academic Affairs; and

Whereas the proposal was reviewed and approved by the Council on Academic Affairs at its meeting on March 20, 2019; and

Therefore be it resolved that the University Senate approve the proposal to establish the Bachelor Science in Engineering Technology degree program for the Lima, Marion, Mansfield, and Newark Campuses and respectfully request approval by the Board of Trustees.

From: [Smith, Randy](#)
To: [Jones, Norman](#); [Kelley, Kathryn](#); [Ulstad, Aimee T.](#)
Cc: [Bielefeld, Eric](#); [Smith, Randy](#); [Reed, Katie](#); [Tomasko, David](#); [Williams, David B.](#); [Rose, Gregory](#); [Brandesky, Joseph](#); [MacDonald, William](#); [McPheron, Bruce A.](#); [Schmiesing, Ryan](#); [Hofherr, Michael B.](#); [Griffiths, Robert](#); [Hume, Beth](#); [Daly, Marymegan](#); [Leite, Fabio](#); [Pandey, Bishun](#); [Kitchen, Dawn](#); [Brown, Stephanie](#); [Givens, Ben](#); [Schweikhart, Sharon](#); [Hogan, Michael](#); [Eveland, Jessica](#); [Kaplan, Jeff](#); [Miner, Jack](#)
Subject: Bachelor of Science in Engineering Technology
Date: Wednesday, March 20, 2019 4:44:11 PM
Attachments: [image001.png](#)

Norman, Kathryn and Aimee:

The proposal from the College of Engineering to establish a new Bachelor of Science in Engineering Technology degree program for the Regional Campuses was approved by the Council on Academic Affairs at its meeting on March 20, 2019. Thank you for attending the meeting to respond to questions/comments.

The proposal will now be sent to the University Senate with a request that it be included on the agenda of its meeting on April 18, 2019. I will provide you with additional details as I learn them. The Chair of the Council, Professor Eric Bielefeld, will present the proposal, but we will need at least one of you to attend that meeting to respond to questions/comments.

If approved by the Senate, it will be sent to the Board of Trustees for action at its meeting on May 31, 2019.

I will work with you on a submission to the Ohio Department of Higher Education and interact with the Higher Learning Commission for any action that may be required there.

Given that your request for implementation is Autumn 2020, there should be no difficulty ensuring all appropriate approvals for an offering at that time.

Please keep a copy of this message for your file(s) on the proposal and I will do the same for the file in the Office of Academic Affairs.

If you have any questions, please contact Professor Bielefeld (.6) or me.

Congratulations on the successful completion of this important stage in the review/approval process. I am well aware of the collaborative efforts of many to get to this point.

Randy



W. Randy Smith, Ph.D.

Vice Provost for Academic Programs

Office of Academic Affairs

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February 4, 2019

Randy Smith, Vice Provost for Academic Programs
Office of Academic Affairs

Re: Proposal to establish a Bachelor of Science in Engineering Technology program

Dear Randy,

On January 18, 2019, the College of Engineering College Committee on Academic Affairs (CCAA), reviewed the attached proposal, submitted by Dr. Norman Jones, dean and director of The Ohio State University at Mansfield, to establish a Bachelor of Science in Engineering Technology program at the following delivery sites: Lima, Marion, Mansfield, and Newark campuses. The committee voted unanimously to support the program with a vote of 11 in favor, 0 opposed, and 0 abstentions.

If you have any questions concerning CCAA's decision, or the proposal itself, feel free to contact me.

Yours sincerely,

Rosie Quinzon-Bonello

Rosie Quinzon-Bonello
Assistant Dean for Curriculum and Assessment

**REQUEST FOR APPROVAL
SUBMITTED BY:**

The Ohio State University

Bachelor of Science Degree in Engineering Technology

February 2019

Table of Contents

SECTION 1: INTRODUCTION	4
SECTION 2: ACCREDITATION	4
SECTION 3: LEADERSHIP—INSTITUTION	4
SECTION 4: ACADEMIC LEADERSHIP—PROGRAM	5
SECTION 5: STUDENT SERVICES.....	11
SECTION 6: CURRICULUM	12
SECTION 7: ASSESSMENT AND EVALUATION.....	20
SECTION 8: FACULTY	21
SECTION 9: LIBRARY RESOURCES AND INFORMATION LITERACY	26
SECTION 10: BUDGET, RESOURCES, AND FACILITIES	27
APPENDICES	33

REQUEST

Date of submission: January 2019

Name of institution: The Ohio State University

Degree/degree program title: Bachelor of Science Degree in Engineering Technology (BSET)

Primary institutional contact for the request

Name: Dr. Norman Jones

Title: Dean & Director

Phone number: 419-755-4222

E-mail: jones.2376@osu.edu

Delivery sites:

Lima, Marion, Mansfield, and Newark campuses

Date that the request was approved by the institution's governing board (e.g. Board of Trustees, Board of Directors): TBD

Proposed start date: Autumn Semester 2020

Institution's programs: associate, bachelor's, master's, and doctoral degrees

Educator Preparation Programs: not applicable

Licensure No

Endorsement No

SECTION 1: INTRODUCTION

1.1 *Provide a brief summary of the request that will serve as an introduction for the reviewers.*

This new degree program will be a Bachelor of Science in Engineering Technology (BSET). The degree was developed in response to the growing needs of regional and state manufacturers for highly skilled college graduates who possess broad training in manufacturing engineering technology and are prepared for plant management roles. Initially, the major will focus on Manufacturing Engineering Technology. Additional concentrations within the major may be added once the program becomes well established. The program will be administered initially by three regional campuses (Lima, Mansfield, and Marion) in partnership with the College of Engineering on the Columbus campus. Later, it will be extended to the Newark campus; eventually, it may also be offered on the Columbus campus.

SECTION 2: ACCREDITATION

2.1 Regional accreditation

- *Original date of accreditation:* 1913 (Higher Learning Commission)
- *Date of last review:* 2017
- *Date of next review:* 2027

2.2 Results of the last accreditation review

- *Briefly describe the results of the institution's last accreditation review and submit the results (e.g., agency report, accreditation letters, requests for follow-up, etc.) as an appendix item.*

The Institutional Actions Council of the Higher Learning Commission confirmed the Reaffirmation of Accreditation for The Ohio State University on July 31, 2017.

2.3 Notification of appropriate agencies

- *Provide a statement indicating that the appropriate agencies (e.g., regional accreditors, specialized accreditors, state agencies, etc.) have been notified of the institution's request for authorization of the new program. **Provide documentation of the notification as an appendix item.***

ABET is the accrediting body for BSET programs under the Engineering Technology Accreditation Commission (ETAC) commission. ABET does not accredit programs until students have graduated and the student outcomes can be measured/assessed against their criteria.

SECTION 3: LEADERSHIP—INSTITUTION

3.1 Mission statement

The Ohio State University is dedicated to:

- Creating and discovering knowledge to improve the well-being of our state, regional, national and global communities;
- Educating students through a comprehensive array of distinguished academic programs;
- Preparing a diverse student body to be leaders and engaged citizens;
- Fostering a culture of engagement and service.

We understand that diversity and inclusion are essential components of our excellence.

The Ohio State University's Engineering Technology Program is a best-in-class program dedicated to:

- Preparing diverse students to be leaders in thought and action;
- Developing skilled employees to meet the technical needs of the state;
- Fostering collaborations between students and employers to enhance real-world applicability of knowledge;
- Creating a community of support between faculty, staff, students, and partners.

3.2 Organizational structure

- *Provide a copy of the institution's organizational chart as an appendix item.*

https://oaa.osu.edu/sites/default/files/links_files/oaa-org-chart.pdf

SECTION 4: ACADEMIC LEADERSHIP—PROGRAM

4.1 Organizational structure

- *Describe the organizational structure of the proposed program. In your response, indicate the unit that the program will be housed within and how that unit fits within the context of the overall institutional structure. Further, describe the reporting hierarchy of the administration, faculty, and staff for the proposed program.*

As with many programs offered on Ohio State's regional campuses, the regional campuses (initially Lima, Mansfield, and Marion) will hold the primary responsibility for administrative oversight of the BSET program and will hold full fiscal oversight of and responsibility for the program. Academic oversight will be shared among the regional campuses and the College of Engineering (COE) on the Columbus campus. Additionally, the Ohio Manufacturing Institute (OMI) will help support this program.

Regional campus Engineering faculty supporting the BSET program will serve as liaisons between the regional campuses and COE as they will be members of the appropriate COE department (e.g., Electrical and Computer Engineering, Engineering Education, Integrated Systems Engineering, Materials Science and Engineering, and Mechanical and Aerospace Engineering) while holding appointments entirely on a regional campus. One academic advisor, the BSET Program Coordinator, one regional Engineering faculty member from each campus offering the BSET, and one faculty representative from the COE will serve on a BSET Curricular Development and Assessment Committee (BSET CDAC), which will bring recommendations for program and course changes or approvals to the COE College Committee on Academic Affairs (CCAA). The chair of the BSET CDAC or designee will serve as the BSET representative on CCAA, in keeping with COE policy (every undergraduate program in COE must have a representative on CCAA). The BSET CDAC will have primary responsibility for making recommendations to CCAA regarding program policies on matters such as Special Action Probation (SAP).

Furthermore, the BSET Program Coordinator (an administrative staff position) will serve as the liaison among regional campuses, COE, individual departments, and industry partners.

All budgetary costs associated with the BSET program will be the responsibility of the regional campuses; there will be no financial burden on Columbus Engineering departments. The only responsibility of relevant Columbus departments will be to serve in an advisory capacity for faculty hiring, annual reviews, and curricular changes. In this, the relationship between the regional campuses and Columbus departments will be the same for the BSET program as it is for other four-year degrees offered on the regional campuses. The one exception is that this program will at least initially be unique at Ohio State because most of the courses composing the major will be offered only at the regional campuses. (Ohio State's Fisher College of Business currently offers a Business Management major available only at the regional campuses; however, the courses for this major are the same as those taken by Fisher College of Business majors at the Columbus campus; by contrast, most of the BSET courses will be available only at the regional campuses.)

In the hiring of regional Engineering faculty for the BSET program, the relevant COE department will typically appoint one Columbus faculty member to serve on the search committee as its representative, often participating only in the final stages of the search (e.g., helping to vet the top candidates). The new faculty member will be hired by the regional campus and may attend departmental meetings in Columbus. The Dean of a given regional campus conducts annual reviews of teaching and service for all regular faculty appointed on that campus. Such reviews take into account SEI data, peer evaluation of teaching letters, and pedagogical professional development undertaken by the faculty member. The relevant Columbus department may review this evaluation and content-specific teaching materials such as course syllabi and assignments; in addition, the department may conduct peer teaching evaluations. The expectation is that most BSET faculty would be hired as Clinical Faculty, especially in the Professor of Practice classification, who therefore will not be evaluated for research productivity. Relevant COE departments may amend their APT and POA policies (following the examples of departments such as Mathematics, Chemistry, and Physics) to address the roles of regional clinical faculty.

- *Provide the title of the lead administrator for the proposed program and a brief description of the individual's duties and responsibilities. Include this individual's CV/resume as an appendix item.*

The BSET Program Coordinator will serve as the project leader for developing and overseeing this new program on multiple campuses. The Program Coordinator's duties will include general BSET program development (intra-university coordination among campuses and units; coordination of external marketing and recruitment; and curricular development) as well as industry and community engagement.

- *Describe any councils, committees, or other organizations that support the development and maintenance of the proposed program. In your response, describe the individuals (by position) that comprise these entities, the terms of their appointment, and the frequency of their meetings.*

The College of Engineering Committee on Academic Affairs (CCAA) is composed of faculty representatives from each undergraduate degree-granting program within the college as well as the Engineering Education Department. Members are appointed for three years. The CCAA meets

approximately once per month during the autumn and spring semesters. Current committee members are listed below:

Voting members:

AAE/ME - Blaine Lilly

AVN - Shannon Morrison

BME - Mark Ruegsegger

CBE - Jeff Chalmers

CIV - Michael Hagenberger

CSE - Paul Sivilotti

ECE - George Valco

EED - Deb Grzybowski

ENG PHY - Robert Perry

ENVR - John Lenhart

FABE - Ann Christy

ISE - Carolyn Sommerich (chair)

MSE - Mike Sumption

WELD - David Phillips

Advisor Rep - Nikki Strader

Grad Rep - Varun

Undergrad Rep - Jacqueline Moss

Non-voting members:

KSA - Jane Murphy

UESS - Dave Tomasko, associate dean

UESS - Rosie Quinzon-Bonello, committee secretary

The BSET Curricular Development and Assessment Committee will be created and will be composed primarily of regional campus faculty from each of the most relevant Engineering departments, potentially including Electrical and Computer Engineering, Engineering Education, Integrated Systems Engineering, Materials Science and Engineering, and Mechanical and Aerospace Engineering. One academic advisor, the BSET Program Coordinator, one regional Engineering faculty member from each campus offering the BSET, and one faculty representative from the College of Engineering will serve on a BSET Curricular Development and Assessment Committee (BSET CDAC). The BSET CDAC will bring recommendations for program and course changes or approvals to the College of Engineering Committee on Academic Affairs (CCAA). The chair of the BSET CDAC or designee will serve as the BSET representative on CCAA. The total membership of the BSET CDAC will be between six and nine faculty and staff.

4.2 Program development

- *Describe how the proposed program aligns with the institution's mission.*

From its founding in 1870 under the name of Ohio Agricultural and Mechanical College, The Ohio State University has remained true to its land-grant mission in accordance with the Morrill Act of 1862. While it has evolved from its original mission of training students for agricultural and mechanical disciplines, the College of Engineering continues to train students to support the technical needs of Ohio. With the current resurgence of manufacturing, Ohio's largest economic sector with 17% of its gross domestic product, today's need for technical talent has outpaced the University's ability to provide enough students to meet workforce demands. Additionally, even though the most critical and immediate workforce needs are in manufacturing, engineering students currently graduating from Ohio State tend to be recruited primarily for industry research and design roles. Ohio State's regional campuses are well positioned to help meet manufacturers' needs, as the mission of the regional campuses includes supporting the needs of its surrounding communities.

The proposed BSET program reflects the mission of the College of Engineering to develop education and outreach programs that enhance economic competitiveness regionally, nationally and globally. The BSET

program is also aligned with the College of Engineering's focus on manufacturing, materials, mobility and medicine, as outlined in its most recent strategic plan. Many other leading universities across the country offer a Bachelor of Science in Engineering Technology. According to a 2016 National Academy of Engineering publication, *Engineering Technology Education in the United States*, approximately 38 universities award at least 100 BSET degrees each year. These institutions include Purdue Polytechnic Institute, Texas A&M, Southern Illinois University, Rochester Institute of Technology, and Michigan State. Approximately 6700 BSET degrees per year are conferred by the 38 top programs.

As the number of students applying for admission to the Columbus campus has increased, the competitiveness of the admission process has also grown. Limitations in classroom and instructor capacity at the Columbus campus are constraining enrollment for engineering majors. Greater numbers of academically qualified students are now being admitted to the regional campuses. Given the recent addition of available housing near several regional campuses, many students who begin at a regional campus express an interest in remaining at that campus for longer than only one or two years. This has increased demand by students for more four-year degrees that can be completed entirely at the regional campuses.

Ohio State's regional campuses play a vital role in helping the University meet this critical demand. The regional campuses are building a strong track record in engineering. They have hired local clinical faculty to teach first- and second-year engineering courses; during Autumn 2018, the Marion campus enrolled 63 students in first-year engineering courses, Mansfield enrolled 41, and Lima enrolled 38. Each regional campus is co-located with a community or technical college that currently offers two-year technical degree programs and has engineering lab facilities outfitted with current technologies used by manufacturers. Based on industry demand, North Central State College received permission in 2018 from the Ohio Department of Higher Education to pursue development of a Bachelor of Applied Science in Mechanical Engineering Technology. These resources present opportunities for collaboration in support of an Ohio State BSET program. Furthermore, manufacturers in each region will partner with their respective regional campuses to support students with internships and the possibility of hiring them in full-time positions after graduation. All four years of the proposed degree will be offered at Ohio State's regional campuses, beginning with Lima, Marion, and Mansfield and then expanding later to include Newark, which presently does not have the space to accommodate additional faculty. Newark expects to be able to launch the program in 2023 by which time it will have built the John and Mary Alford Center for Science and Technology.

Many Ohio State students who begin at a regional campus place into math courses below calculus, which is a substantial barrier to pursuing any of the existing Bachelor of Science in Engineering programs in a timely manner. These students are required to take pre-calculus math courses, which delays their time-to-degree and results in lower graduation rates. These students possess skills more in alignment with ABET's emphasis for BSET programs on the application of differential and integral calculus, which is less theoretical and more in line with what students will need for future roles in industry. In summary, the BSET program will serve the regional and workforce needs of the state's economic base.

- *Indicate whether the institution performed a needs assessment/market analysis to determine a need for the program. If so, briefly describe the results of those findings. If completed, submit the full analysis as an appendix item.*

Manufacturers in Ohio report high demand for technical talent in the mid- to high-level skills range (see “Retooling Engineering Technology for the Manufacturing 5.0 Workplace,” Ohio Manufacturing Institute, www.omi.osu/engineeringtech). Manufacturers seek engineers who not only possess hands-on skills but also are capable of understanding the technology involved with robotics, lightweight manufacturing, and automation systems. According to Deloitte and the Manufacturing Institute projections, the widening manufacturing skills gap is expected to grow from 488,000 jobs left open today to as many as 2.4 million through 2028, as a wave of skilled engineers and engineering technologists begin to retire. As one example, the US Department of Labor O-Net skills database indicates that 32% of industrial production manager positions will need to be replaced through 2024.

Other Ohio universities offer BSET degrees, including University of Cincinnati, Miami University, Ohio Northern University, and Cleveland State University. Even so, demand for graduates of such programs is strong enough to support an Ohio State BSET program. Based on research conducted by the Ohio Manufacturing Institute at Ohio State, manufacturers in Ohio and across the nation have expressed the need to hire or train workers with the appropriate knowledge and skills to fill thousands of new or vacant positions over the next decade. Given that manufacturers already report difficulty in finding plant managers and mid- to high-skilled technical workers, the skill deficit is expected only to worsen with the increase in need for those with digital skills. Analysis of the US Department of Labor O-NET skills data through 2024 reveals that workers performing these production occupations also need a high level of skill in operations monitoring and analysis, quality control, equipment selection and maintenance, troubleshooting, as well as a comparatively high command of physics and design.

- *Indicate whether the institution consulted with advisory groups, business and industry, or other experts in the development of the proposed program. If so, briefly describe the involvement of these groups in the development of the program.*

According to results from industry focus groups, surveys, and individual consultations with manufacturing leaders conducted by OMI, the proposed BSET program will facilitate the growing need for business-oriented engineering leaders to run the factories of tomorrow. Consultants from the Ohio Manufacturers’ Association and advisory committees from manufacturing companies collaborated in the development of this program. “For what we are looking for, it’s not out there,” said a Northwest Ohio manufacturer. “They haven’t been developing that. The pipeline is too long and is just starting to get filled.”

Based on their input, a task force was formed that included industry, academic, and curriculum experts, including a representative from the University Center for the Advancement of Teaching (UCAT), now part of the The University Institute for Teaching and Learning (UITL); this task force spent 18 months developing the BSET program goals, outcomes, and proficiencies, creating the initial curriculum. In September 2018, the program was vetted by a focus group of manufacturers located in the North Central Ohio region.

- *Indicate whether the proposed program was developed to align with the standards of a specialized or programmatic accreditation agency. If so, indicate whether the institution plans to pursue programmatic/specialized accreditation for the proposed program and provide a*

timeline for achieving such accreditation. If the program is already accredited, indicate the date that accreditation was achieved and provide information on the next required review.

The proposed BSET is designed to meet the program educational outcomes for accreditation from ABET, and more specifically from the Engineering Technology Accreditation Commission (ETAC) of ABET. Accreditation will be assessed once students have graduated, in keeping with ABET accreditation protocol. As such, the proposed program's educational outcomes are aligned with the following ABET outcomes for baccalaureate degree programs:

- (1) an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline;
- (2) an ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline;
- (3) an ability to apply written, oral, and graphical communication in broadly defined technical and non-technical environments; and an ability to identify and use appropriate technical literature;
- (4) an ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes; and
- (5) an ability to function effectively as a member as well as a leader on technical teams.

The proposed manufacturing engineering BSET program will include instruction on the following: (a) materials and manufacturing processes; (b) product design process, tooling, and assembly; (c) manufacturing systems, automation, and operations; (d) statistics, quality and continuous improvement, and industrial organization and management; and (e) capstone or integrating experience that develops and illustrates student competencies in applying both technical and non-technical skills in successfully solving manufacturing problems.

Further in keeping with ABET guidelines, the discipline-specific content of the curriculum focuses on the applied aspects of science and engineering and will:

- (a) Represent at least one-third of the total credit hours for the curriculum but no more than two-thirds of the total credit hours for the curriculum;
- (b) Include a technical core preparing students for the increasingly complex technical specialties later in the curriculum;
- (c) Develop student competency in the discipline;
- (d) Include design considerations appropriate to the discipline and degree level such as: industry and engineering standards and codes; public safety and health; and local and global impact of engineering solutions on individuals, organizations and society; and
- (e) Include topics related to professional responsibilities, ethical responsibilities, respect for diversity, and quality and continuous improvement.

With substantial help and guidance from the University Center for the Advancement of Teaching (UCAT), now UITL, the full analysis of the proposed BSET program's learning goals, outcomes, and proficiencies has been completed and mapped to the proposed courses using UCAT's curriculum design process. Additionally, a task force team of faculty, staff, and industry experts worked closely with a UCAT instructional designer to align the curriculum goals to the courses. The program goals are as follows:

1. **Systems Thinking and Problem Solving:** The successful student will be able to effectively solve problems by applying the appropriate engineering technologies, tools and techniques within systems of equipment, controls and people.
2. **Professional Skills/Communication:** The successful student will be able to demonstrate, appreciate, and master interpersonal communications skills in the modern workplace.
3. **Business:** The successful student will be able to understand business terminology, analyze the value of alternatives, and communicate their business, societal and global impacts effectively.
4. **Continuous Improvement:** The successful student will be able to optimize processes and systems with respect to quality, timeliness, and continuous improvement.

Please see the Appendix for a complete list of the Expected Goals, Outcomes, and Proficiencies for the BSET, which are aligned with the following curriculum outline. Because of the unique nature of this program, which derives from its emphasis on integrating training in hands-on skills and applications along with instruction in theory, almost all of the courses in the curriculum shown below are new to Ohio State.

4.3 Collaboration with other Ohio institutions

- *Indicate whether any USO institutions within a thirty-mile radius of your institution offers the proposed program. If so, list the institutions that offer the proposed program and provide a rationale for offering an additional program at this site.*

No other USO institutions within a thirty-mile radius offer the proposed program. Ohio Northern University near the Lima regional campus offers a bachelor of applied science manufacturing technology degree with a concentration in robotics and management. The bachelor of applied science degree at North Central State is still in the development process.

- *Indicate whether the proposed program was developed in collaboration with another institution in Ohio. If so, briefly describe the involvement of each institution in the development of this request and the delivery of the program.*

Cooperative arrangements with other institutions and organizations will be used to offer this program, including community and technical colleges, career and technical training centers, and manufacturing companies. These partnerships will focus on the use of laboratory and technical training equipment as well as curriculum development. While no articulation arrangement with other institutions will be in effect initially for this program, specific arrangements may be developed in the future.

SECTION 5: STUDENT SERVICES

5.1 Admissions policies and procedures

- *Describe the admissions requirements for the program. In your response, highlight any differences between the admission requirements for the program and for the institution as a whole.*

Students must be admitted to The Ohio State University as undergraduates in order to be admitted into the BSET program. Such students will be admitted into the program according to the same protocols by which students are currently admitted to other major programs at Ohio State that do not require a

competitive application process. If student demand exceeds capacity, then initially admission will be limited by course-by-course enrollment caps on a first-come, first-served basis. If demand continues to exceed capacity, then an application process will be developed using similar criteria to those used by other competitive majors at Ohio State.

- *Describe the transfer credit policies for the proposed program, including the use of credit transfer review committees and the maximum number of hours that can be transferred into the program. In your response, specifically address the credit that may be transferred*
 - *according to the Department of Higher Education's Transfer Assurance Guide (TAG) and Career Technical Credit Transfer (CT²) initiatives; and*
 - *other types of transfer credit awarded toward major program requirements (e.g., AP, life experience, CLEP, portfolio, etc.).*

5.2 Student administrative services

- *Indicate whether the student administrative services (e.g., admissions, financial aid, registrar, etc.) currently available at the institution are adequate to support the program. If new or expanded services will be needed, describe the need and provide a timeline for acquiring/implementing such services.*

5.3 Student academic services

- *Indicate whether the student academic services (e.g., career services, counseling, tutoring, ADA, etc.) currently available at the institution are adequate to support the program. If new or expanded services will be needed, describe the need and provide a timeline for acquiring/implementing such services.*

Existing student services on the regional campuses will meet all initial needs of the program because all regional campuses currently provide academic advising, tutoring, career services, internship coordination, disabilities services, and mental health services. If enrollments increase beyond the capacity of existing services on a given campus, then that campus will be responsible for expanding its services appropriately.

SECTION 6: CURRICULUM

6.1 Introduction

- *Provide a brief description of the proposed program as it would appear in the institution's catalog.*

The Bachelor of Science in Engineering Technology (BSET) trains students to use a systems approach to integrate knowledge and skills in manufacturing methods, electrical controls and automation, and process improvement in order to support emerging technical needs and manage business objectives in industry.

6.2 Program goals and objectives

- *Describe the goals and objectives of the proposed program. In your response, indicate how these are operationalized in the curriculum.*

This new four-year engineering degree program combines aspects of several traditional engineering majors that are most relevant to the current and future challenges faced by manufacturing firms. Engineers working in manufacturing plants today increasingly need to possess a broad, applied skill set that includes electrical, mechanical, and industrial engineering training, because manufacturing technologies frequently combine core elements of these various disciplines in synergistic ways. Engineers in manufacturing also need management skills. The BSET program will be highly technical, giving students hands-on knowledge and expertise in multiple disciplines so that graduates will be able to support the needs of manufacturers in leadership roles. It will prepare students to use systems-based approaches to engage effectively in problem solving within complex, fast-paced manufacturing plants.

6.3 Course offerings/descriptions

- Complete the following table to indicate the courses that comprise the program. Please list courses in groups by type (e.g., major/core/technical, general education, elective) and indicate if they are new or existing courses.

Course (name/number)	No. of credit hours (q/s)	Major/ Core/ Technical	General Education	Elective	OTM, TAG or CT ² equivalent course	New/Existing Course
ENGRTEC 1000: Graphical Design	3s	X				New
ENGRTEC 1100: Manufacturing Processes 1	3s	X				New
ENGRTEC 1200: Foundations of Engineering Technology	3s	X				New
ENGRTEC 1300: Applied Science (Physics) 1	3s	X				New
ENGRTEC 1400: Math - Applied Technical Math 1	3s	X				New
ENGRTEC 1500: Communication & Professional Skills 1	3s		X			New
ENGRTEC 1600: Math - Applied Technical Math 2	3s	X				New
ENGRTEC 1700: Applied Science 2 (Physics 2 Electricity)	4s	X				New

ENGRTEC 1800: Electrical Circuits 1	3s	X				New
ENGRTEC 1900: Electrical Applications and Design	3s	X				New
ENGRTEC 2000: Engineering Material Science with Applications	3s	X				New
CSE 2112: Modeling and Problem Solving with Spreadsheets and Databases for Engineers	3s	X				Existing
ENGRTEC 2100: Manufacturing Processes 2	3s	X				New
ENGRTEC 2200: Project management	3s	X				New
ENGRTEC 2300: Statistics for Engineering Tech	3s	X				New
ENGRTEC 2400: Industrial Controls and Automation - PLC Programming 1	3s	X				New
ENGRTEC 2500: Business Tools for Engineering Technology	3s	X				New
ENGRTEC 2600: Case Study in Engineering Technology - Ethics, Diversity, Safety	3s		X			New
ENGRTEC 3000: Data Collection and Analysis for Quality	3s	X				New
ENGRTEC 3100: Problem Solving & Troubleshooting (Kempner Trego)	3s	X				New
ENGRTEC 3200: Industrial Controls and Automation - PLC Programming 2 Analog	3s	X				New

ENGRTEC 3300: Mechanical Processes Hydraulics/Pneumatics and Mechanical Systems	3s	X				New
ENGRTEC 3400: Lean/Six Sigma - Tools and Applications	3s	X				New
ENGRTEC 3500: Programming C++ or other	3s	X				New
ENGRTEC 3600: Robotics operation and control	3s	X				New
ENGRTEC 3700: Facility Layout and Work Measurement	3s	X				New
ENGRTEC 2367: Writing II with focus on Technical Communications	3s		X			New
ENGRTEC 4000: Operations management - Reliability & Sustainability	3s	X				New
ENGRTEC 4100: Industrial Safety & Risk assessment	3s	X				New
ENGRTEC 4200: Capstone 1	3s	X				New
ENGRTEC 4300: Leadership and Change management	3s	X				New
ENGRTEC 4400: Capstone 2	3s	X				New
ENGRTEC 4500: Technical Elective	3s			X		New
ENGRTEC 4600: Electrical Applications in Industry	3s	X				New
ENGRTEC 4700: Manufacturing Process Design Studio	3s	X				New

*Provide a brief description of each course in the proposed program as it would appear in the course catalog. In your response, include the name and number of the course. **Submit course syllabi as appendix items.***

ENGRTEC 1000: Graphical Design	Introduces engineering graphics and fundamentals of computer-aided design using the interactive software package AutoCAD/Autodesk Inventor on a personal computer. Technical sketching and shape description, orthographic projection theory, multi-view drawings, necessary views, sectional views, working and shop drawings, dimensioning practices, tolerancing, thread and fastener representation and nomenclature, assembly and detail drawings.
ENGRTEC 1100: Manufacturing Processes 1	Application of metal-cutting theory using single- and multiple-point cutting tools, basic metal removal process of tool room and production machines. Experience on conventional milling machines, shapers, lathes, surface grinders, and drill presses. Three hours of laboratory a week.
ENGRTEC 1200: Foundations of Engineering Technology	Introduces Engineering Technology students to resources and skills that will help them to be successful in their studies and ultimately in their careers. The skills needed to define and solve technical problems in engineering technology are developed. Instruction is given in analytical and computational problem-solving techniques. Application of software for analysis and communication is emphasized. Teamwork, global and societal concerns, and professional ethics are integrated into course projects.
ENGRTEC 1300: Applied Science (Physics 1)	Mechanics - Newton first law, Free Body Diagrams. Algebra based physics with Lab applications aligned within an applied engineering context.
ENGRTEC 1400: Math - Applied Technical Math 1	Review of Advanced Algebra, Trig, and Derivative Calculus as applied in engineering technology. Objective is to teach and demonstrate math as applied in engineering applications.
ENGRTEC 1500: Communication & Professional Skills 1	Teamwork, Resume Writing, Communication skills aligned to the audience's objectives.
ENGRTEC 1600: Math - Applied Technical Math 2	Applied Derivative and Integral Calculus focusing on applications in an engineering context.
ENGRTEC 1700: Applied Science 2 (Physics 2 - Electricity)	Physics 2 - Electricity Theory and Concepts. Algebra based physics with Lab applications aligned with Engineering.
ENGRTEC 1800: Electrical Circuits 1	Circuit Analysis, Devices, Electricity and Magnetism.
ENGRTEC 1900: Electrical Applications and Design	Hands on course for the design, building, and testing of electrical circuits for common applications.
ENGRTEC 2000: Engineering Material Science with Applications	Basics of engineering materials, metals, polymers, and characteristics of stress, strain, hardness, brittleness, corrosion impacts. Study of tests used to characterize properties of materials and how material properties influence their use and design for engineering applications. Testing procedures demonstrations will be included.
CSE 2112: Modeling and Problem Solving with Spreadsheets and Databases for Engineers	Spreadsheet and database modeling/programming concepts and techniques to solve business and engineering related problems; efficient/effective data handling, computational analysis and decision support.

ENGRTEC 2100: Manufacturing Processes 2	Advanced Manufacturing - Additive Manufacturing with design applications blending the blending CAD design with CAM and applications.
ENGRTEC 2200: Project management	Project management - Stages of Project - Scoping, Evaluating (Cost, Benefit, Schedule), Scheduling (MS Project) CPM, PERT, Crashing. Provides an overview of the roles, responsibilities, and management methods of technology in project management. Emphasizes scheduling of various projects, monitoring, control and learning from projects. Three interrelated objectives of budget, schedule, and specifications are also introduced. The course assumes no prior knowledge in management techniques and is intended to teach students how to develop approaches and styles of management for service and manufacturing industry projects.
ENGRTEC 2300: Statistics for Engineering Technology	Applied statistics with emphasis on Quality methods, material testing and variability, and interpretation of results.
ENGRTEC 2400: Industrial Controls and Automation - PLC Programming 1	Introduces the fundamentals of programmable logic controllers, and PLC application in process control. The course includes both lecture and laboratory aimed at applying fundamental principles to practical projects. The emphasis is on the basics of ladder logic, including timers, counters, and program control.
ENGRTEC 2500: Business Tools for Engineering Technology	Financial Accounting (Income Statement, Balance Sheet) Cost Accounting (Cost - Variable, Fixed, Manufacturing) ROI/NPV, Cost/Benefit Analysis with emphasis on communication of business cases.
ENGRTEC 2600: Case Study in Engineering Technology - Ethics, Diversity, Safety	Development of techniques of moral analysis and their application to ethical problems encountered by engineers, such as professional employee rights and whistle blowing; environmental issues; ethical aspects of safety, risk and liability and conflicts of interest; emphasis on developing the capacity for independent ethical analysis of real and hypothetical cases.
ENGRTEC 3000: Data Collection and Analysis for Quality	A study of the techniques used to collect, organize and analyze information which can be used in making decisions regarding quality. The course reviews statistics and then develops such topics as process capability, process control, acceptance sampling and reliability. The scope of quality will be expanded to include such topics as reliability, quality costs, product liability and quality systems. The laboratory sessions will provide the student with the opportunity to apply the principles developed in the classroom through the use of computer examples and "hands-on" exercises.
ENGRTEC 3100: Problem Solving & Troubleshooting (Kempner Trego)	Fundamental principles of problem solving including: Analytical Troubleshooting, Root Cause Analysis, 5 Why, Pareto.
ENGRTEC 3200: Industrial Controls and Automation - PLC Programming 2 Analog	Fundamentals of real-time closed-loop analog and digital control (the proportional, integral and derivative controller); distributed control systems, sensors, electronics, stepper and servo motors; design an autonomous vehicle; open industrial networks.
ENGRTEC 3300: Mechanical Processes Hydraulics/Pneumatics and Mechanical Systems	Fundamentals and applications of Mechanical Systems including Cams, Gears, Pneumatics, Hydraulics.
ENGRTEC 3400: Lean/Six Sigma - Tools and Applications	A study of the concept of Lean Production applied to the manufacturing sector. The course covers the fundamental concepts and philosophy of lean used to achieve operational excellence. Lean concepts such as waste reduction, one-piece flow, pull systems, continuous improvement, development of personnel into leaders. Lean

	concepts/tools covered will include kaizen, value stream mapping, work standardization, kanban, 5S, 5 why, A3 report, just in time (JIT), and takt time.
ENGRTEC 3500: Programming C++ or other	Software for application in industrial controls & automation and robotics.
ENGRTEC 3600: Robotics operation and control	Covers robot configuration; components, actuators, and sensors; vision; and control, performance, and programming. Includes lectures and laboratory.
ENGRTEC 3700: Facility Layout and Work Measurement	Facility Layout considering throughput, Line Balancing, Work Measurement - Takt Time, OEE/Efficiency, System Analysis. Design of manufacturing and service facilities for the most efficient flow of raw materials, work-in-process, and completed stock through a work place. Facilities layout, material handling, and warehousing in relation to trends toward reduced inventory, smaller lot sizes, and just-in-time.
ENGRTEC 2367: Writing II with focus on Technical Communications	Technical writing with applications including: project documents (scope, bid, reporting, analysis), failure reporting, and descriptions of operations (SOP). Emphasis includes simplicity, visual appeal, and messaging effectiveness to the audience.
ENGRTEC 4000: Operations management & Reliability & Sustainability	A study of the organization of the production system as well as the techniques used to control its operation. Topics covered include production planning, plant layout, inventory control, job sequencing, and operation scheduling. Reliability - RCM, Predictive Maintenance - Lubrication- Oil Analysis, Vibration Analysis, Maintenance Work Force, PMs
ENGRTEC 4100: Industrial Safety & Risk assessment	Application of safety techniques and principles to identify and correct unsafe situations and practices. Study of system safety, failure modes and effects analysis, fault tree analysis, preliminary hazard analysis, hazardous materials and practices, OSHA, health and personal protection.
ENGRTEC 4200: Capstone 1	Participation in an approved high-impact learning practice; reflection on professional outcomes; documentation and self-assessment of learning experience at mid-curriculum point.
ENGRTEC 4300: Leadership and Change management	Techniques to implement and optimize project-driven change; communication and leadership strategies critical to successful optimization of a firm's processes and systems.
ENGRTEC 4400: Capstone 2	Participation in an approved high-impact learning practice; reflection on professional outcomes; documentation and self-assessment of learning experience at mid-curriculum point.
ENGRTEC 4500: Technical Elective	Options include: Human Factors/Ergonomic/Cognitive, Design, Simulation.
ENGRTEC 4600: Electrical Applications in Industry	Power Distribution in Manufacturing applications including Med Voltage, Breakers, Transformers, Electrical Safety. Low voltage application will include Control Networks
ENGRTEC 4700: Manufacturing Process Design Studio	Design manufacturing process, build a small scale, and operate it on a small scale, then evaluate requirements for scale up.

6.4 Program sequence

Autumn Semester			Spring Semester	
Year	Class	Hrs	Class	Hrs
1	Graphical Design	3	GE 1: Communications and Professional Skills	3
	Manufacturing Processes 1	3	Applied Technical Math 2	3
	Foundations of Engineering Technology	4	Applied Physics 2	3
	Applied Physics 1	3	Electrical Circuits 1	3
	Applied Technical Math 1	3	Electrical Applications and Design	4
2	Engineering Material Science w/ Applications	3	Statistics with Applications	3
	Computer Apps. for Eng. Tech. (CSE2112)	3	Industrial Controls and Automation (PLC1)	3
	Manufacturing Processes 2	3	Business Tools for Engineering Tech (ISE2040)	3
	Project Management for Eng. Tech (ISE3800)	3	GE3: Case Studies in Eng. Tech. / Engineering Ethics	3
	General Education 2	3	General Education 4	3
3	Data Collection and Analysis for Quality	3	Lean Six Sigma - Tools and Applications	3
	Problem Solving and Troubleshooting	3	Programming - C++	3
	Industrial Controls and Automation (PLC2)	3	Robotics - Operation and Control	3
	Mech. Processes (Hyd./Pneum./Gears/Cams)	3	Facility Layout and Work Measurement	3
	General Education 5	3	GE 6: Technical Writing 2	3
4	Capstone 1	3	Capstone 2	3
	Operations Mgmt-Reliability & Sustainability	3	Technical Elective	3
	Industrial Safety and Risk	3	Electrical Application in Industry	3
	Leadership and Change Mgmt. (ISE5800)	3	Manufacturing Process Design Studio	3
	General Education 7	3	General Education 8	3

6.5 Alternative delivery options (please check all that apply):

- ☐ More than 50% of the program will be offered using a fully online delivery model
☒ More than 50% of the program will be offered using a hybrid/blended delivery model
☐ More than 50% of the program will be offered using a flexible or accelerated delivery model

For the purposes of this document, the following definitions are used:

- an **online course** is one in which most (80+%) of the content is delivered online, typically without face-to-face meetings;
- a **hybrid/blended course** is one that blends online and face-to-face delivery, with substantial content delivered online;
- a **flexible or accelerated program** includes courses that do not meet during the institution's regular academic term as well as courses that meet during the regular academic term but are

offered in a substantially different manner than a fixed number of meeting times per week for all the weeks of the term.

6.5 Off-site program components (please check all that apply):

- X Co-op/Internship/Externship
- ☐ Field Placement
- ☐ Student Teaching
- ☐ Clinical Practicum
- ☐ Other

SECTION 7: ASSESSMENT AND EVALUATION

7.1 Program assessment

- *Describe the policies and procedures in place to assess and evaluate the proposed program. In your response, include the following:*
 - *Name of the unit/position responsible for directing assessment efforts;*
 - *Description of any committees or groups that assist the unit;*
 - *Description of the measurements used;*
 - *Frequency of data collection;*
 - *Frequency of data sharing; and*
 - *How the results are used to inform the institution and the program.*

The regional campuses offering the BSET (initially Lima, Mansfield, and Marion) will be responsible for directing program assessment. Specifically, the BSET Program Coordinator will work with the associate dean of each campus and the Chair of the BSET Curricular Development and Assessment Committee (BSET CDAC) to create an assessment plan in accordance with ABET's Engineering Technology Accreditation Committee (ETAC) assessment and accreditation guidelines. This plan will include a commitment to biannual recommendations to develop curricular and co-curricular improvements to the program based on the assessment data. The ABET ETAC assessment guidelines will be incorporated into the structure of the program on a course-by-course as well as programmatic basis.

7.2 Measuring student success

- *Describe the policies and procedures in place to measure individual student success in the proposed program. In your response, include the following:*
 - *Name of the unit/position responsible for directing these efforts;*
 - *Description of any committees or groups that assist the unit;*
 - *Description of the measurements used;*
 - *Frequency of data collection;*
 - *Frequency of data sharing;*
 - *How the results are used to inform the student as they progress through the program; and*
 - *Initiatives used to track student success after program completion.*

The regional campuses offering the BSET (initially Lima, Mansfield, and Marion) will be responsible for measuring student success. Specifically, student success data will be reviewed annually by the BSET Program Coordinator, the BSET Curricular Development and Assessment Committee (BSET CDAC), and the BSET faculty. Such data will include the mean GPA of BSET majors, grade distributions in introductory-level courses, retention and graduation rates for students who start the first-year BSET curriculum, Student Evaluation of Instruction data for BSET courses, and internship and job placements. Annual student success data reviews will guide potential improvements to the program.

SECTION 8: FACULTY

8.1 Faculty appointment policies

- *Describe the faculty designations available (e.g., professor, associate professor, adjunct, instructor, clinical, etc.) for the proposed program's faculty. In your response, define/describe the differences between the designations.*

BSET faculty may be clinical faculty (clinical assistant professor of practice, clinical associate professor of practice, or clinical professor of practice) or adjunct faculty (lecturer or senior lecturer). Clinical faculty are not required to conduct research and may not participate in tenure-track promotion & tenure decisions but do participate in faculty governance, including serving on faculty committees on their home campus and possibly also in their home department on the Columbus campus. In the case of regional clinical faculty, their service duties are evaluated annually by their home campus. Adjunct faculty are not required to conduct research or service activities.

- *Describe the credentialing requirements for faculty who will be teaching in the program (e.g., degree requirements, special certifications or licenses, experience, etc.).*

The preferred qualification for BSET clinical faculty will be an earned Ph.D. or terminal degree in a relevant branch of engineering or a closely related field. Adjunct faculty must hold at least a master's degree in a relevant branch of engineering or a closely related field.

- *Describe the institution's load/overload policy for faculty teaching in the proposed program.*

BSET clinical faculty will teach 21 credit hours per academic year; adjunct faculty will teach 24 credit hours per academic year.

- *Indicate whether the institution will need to identify additional faculty to begin the proposed program. If additional faculty members are needed, describe the appointment process and provide a timeline for hiring such individuals.*

New faculty will be hired to begin the proposed BSET program. One new faculty member will be hired starting in Autumn Semester 2019 in order to work with current regional campus engineering faculty and others to help launch the program, which will begin accepting first-year students in Autumn Semester 2020. Additional new faculty will be hired to start in Autumn Semester 2020 and beyond. New faculty members will be hired by individual regional campuses. The relevant College of Engineering department will typically appoint one Columbus faculty member to serve on the search committees as its representative, often participating only in the final stages of the search (e.g., helping to vet the top

candidates). Finalists for the position will be interviewed on both the regional and Columbus campuses, and any offer will require the signature of both the regional campus dean and the relevant Engineering department chair.

8.2 Program faculty

- *Provide the number of existing faculty members available to teach in the proposed program.*

Full-time: 5 Engineering faculty (1 at Lima, 1 at Mansfield, and 3 at Marion); 3 Physics faculty; 3+ Math & Statistics faculty

Less than full-time:

- *Provide an estimate of the number of faculty members to be added during the first two years of program operation.*

Full-time: 1-3 per campus

Less than full-time:

8.3 Expectations for professional development/scholarship

- *Describe the institution's general expectations for professional development/scholarship activities by the proposed program's faculty. In your response, describe any differences in the expectations for tenure-track vs. non tenure-track faculty and for full-time vs. part-time faculty. Indicate the financial support provided for such activities. **Include a faculty handbook outlining the expectations and documenting support as an appendix item.***

Clinical and adjunct faculty are not required to conduct research. Clinical faculty have access to non-competitive and competitive funds for professional development; adjunct faculty have access to more limited funding for professional development. An example faculty handbook (for the Mansfield campus) is available online at <https://mansfield.osu.edu/faculty-and-staff-handbook/>

8.4 Faculty matrix

- *Complete a faculty matrix for the proposed program. A faculty member must be identified for each course that is a required component of the curriculum. If a faculty member has not yet been identified for a course, indicate that as an "open position" and describe the necessary qualifications in the matrix (as shown in the example below). **A copy of each faculty member's CV must be included as an appendix item.***

The following matrix shows only the Mansfield campus as a representative example. Some of the courses listed below may be taught in partnership with faculty from other regional OSU campuses.

Name of Instructor	Rank or Title	Full-Time or Part-Time	Degree Titles, Institution, Year Include the Discipline/Field as Listed on the Diploma	Years of Teaching Experience In the Discipline/Field	Additional Expertise in the Discipline/Field (e.g., licenses, certifications, if applicable)	Title of the Course(s) This Individual Will Teach in the Proposed Program Include the course prefix and number	Number of Courses this Individual will Teach Per Year at <u>All</u> Campus Locations
open position	Clinical Assistant Professor of Practice	FT	Ph.D. or terminal degree, Engineering	1		ENGRTEC 1000: Graphical Design; CSE 2112: Modeling and Problem Solving with Spreadsheets and Databases for Engineers; ENGRTEC 2400: Industrial Controls and Automation - PLC Programming 1; ENGRTEC 3200: Industrial Controls and Automation - PLC Programming 2 Analog; ENGRTEC 3500: Programming C++ or other	5 BSET courses

open position	Clinical Assistant Professor of Practice	FT	Ph.D. or terminal degree, Engineering	1		ENGRTEC 1100: Manufacturing Processes 1; ENGRTEC 2100: Manufacturing Processes 2; ENGRTEC 3100: Problem Solving & Troubleshooting (Kempner Trego); ENGRTEC 3300: Mechanical Processes Hydraulics/Pneumatics and Mechanical Systems; ENGRTEC 4700: Manufacturing Process Design Studio; ENGRTEC 4100: Industrial Safety & Risk assessment	6 BSET courses
open position	Clinical Assistant Professor of Practice	FT	Ph.D. or terminal degree, Engineering	1		ENGRTEC 1800: Electrical Circuits 1; ENGRTEC 1900: Electrical Applications and Design; ENGRTEC 3600: Robotics operation and control; ENGRTEC 4600: Electrical Applications in Industry; ENGRTEC 2600: Case Study in Engineering Technology - Ethics, Diversity,	6 BSET courses

						Safety; ENGRTEC 4300: Leadership and Change management	
open position	Clinical Assistant Professor of Practice	FT	Ph.D. or terminal degree, Engineering	1		ENGRTEC 2200: Project management; ENGRTEC 3000: Data Collection and Analysis for Quality; ENGRTEC 2500: Business Tools for Engineering Technology; ENGRTEC 3400: Lean/Six Sigma - Tools and Applications; ENGRTEC 4000: Operations management - Reliability & Sustainability; ENGRTEC 3700: Facility Layout and Work Measurement	6 BSET courses
Mirel Caibar	Associate Professor	FT	Ph.D., University of Warwick, 1999: Mathematics	17		ENGRTEC 1400: Math - Applied Technical Math 1; ENGRTEC 1600: Math - Applied Technical Math 2	2 BSET courses
Wenfei Li	Lecturer	FT	Ph.D., The Ohio State University, 2010: Aeronautical & Astronautical Engineering	10		ENGRTEC 1200: Foundations of Engineering Technology; ENGRTEC 2000: Engineering Material Science with Applications; ENGRTEC 4500:	5 BSET courses

						Technical Elective; ENGRTEC 4200: Capstone 1; ENGRTEC 4400: Capstone 2	
William Putikaa	Professor	FT	Ph.D., University of Wisconsin, 1988: Physics	36		ENGRTEC 1300: Applied Science (Physics) 1; ENGRTEC 1700: Applied Science 2 (Physics 2 Electricity)	2 BSET courses
Tena Katsaounis	Lecturer	FT	Ph.D., The Ohio State University, 2006: Statistics	18		ENGRTEC 2300: Statistics for Engineering Tech	1 BSET course
Kelly Whitney	Assistant Professor	FT	Ph.D., New Mexico State University, 2018: Rhetoric and Professional Communication	9		ENGRTEC 1500: Communication & Professional Skills 1; ENGRTEC 2367: Writing II with focus on Technical Communications	2 BSET courses

SECTION 9: LIBRARY RESOURCES AND INFORMATION LITERACY

9.1 Library resources

- *Describe the involvement of a professional librarian in the planning for the program (e.g., determining adequacy of current resources, working with faculty to determine the need for additional resources, setting the budget for additional library resources/services needed for the program).*

No professional librarian assisted in the planning for the BSET program, as most of the required resources are technical (e.g., engineering equipment and manufacturing machinery) or digital (computing resources).

- *Describe the library resources in place to support the proposed program (e.g., print, digital, collections, consortia, memberships, etc.).*

The Ohio State University Libraries have branch locations on each regional campus. For example, on the Mansfield campus, the Bromfield Library and Information Commons (BLIC) provides students, staff, and

faculty with state-of-the-art information resources. The BLIC houses a basic collection of books and periodicals and provides access to materials through the statewide OhioLINK consortium. A courier brings materials from other Ohio State University libraries and from academic and public libraries across the state. The BLIC offers electronic access to a full range of online resources through Ohio State's libraries and the OhioLINK Consortium. The BLIC also houses multiple technological resources, including two computer classrooms, small-group study rooms with touch-screen computers, a media lab for creating audiovisual materials, and many individual computers available for student use.

- *Describe any additional library resources that will be needed to support the request and provide a timeline for acquiring/implementing such services. Where possible, provide a list of the specific resources that the institution intends to acquire, the collaborative arrangements it intends to pursue, and monetary amounts the institution will dedicate to the library budget to support and maintain the proposed program.*

No additional library resources will be required.

9.2 Information literacy

- *Describe the institution's intent to incorporate library orientation and/or information literacy into the proposed program. In your response, describe any initiatives (e.g., seminars, workshops, orientations, etc.) that the institution uses or intends to use for faculty and students in the program.*

Regional campus librarians offer information literacy workshops used regularly as part of many courses.

SECTION 10: BUDGET, RESOURCES, AND FACILITIES

10.1 Resources and facilities

Describe additional resources (e.g., classrooms, laboratories, technology, etc.) that will be needed to support the proposed program and provide a timeline for acquiring/implementing such resources.

The program costs outlined below will be borne by the regional campuses.

10.2 Budget/financial planning

Complete the table on the following page to describe the financial plan/budget for the first four years of program operation.

Fiscal Impact Statement for the New Degree Program, using the Mansfield campus as a representative example

	Year 1	Year 2	Year 3	Year 4
I. Projected Enrollment				
Head-count full time	42	63	80	95
Head-count part time				
Full Time Equivalent (FTE) enrollment	42	63	80	95
II. Projected Program Income				
Tuition (paid by student or sponsor)	\$321,048	\$481,572	\$611,520	\$726,180
Expected state subsidy	\$65,180	\$97,770	\$124,150	\$147,430
Externally funded stipends, as applicable				
Other income (if applicable, describe in narrative section below)	\$100,000	\$100,000		
Total Projected Program Income	\$486,228	\$679,342	\$735,670	\$873,610
III. Program Expenses				
New Personnel <ul style="list-style-type: none"> • Instruction (technical, professional and general education) Full <u>up to 5</u> Part Time _____ • Non-instruction (indicate role(s) in narrative section below) Full <u>2</u> Part time _____ 	\$403,000	\$513,000	\$600,000	\$600,000
New facilities/building/space renovation (if applicable, describe in narrative section below)				
Scholarship/stipend support (if applicable, describe in narrative section below)				
Additional library resources (if applicable, describe in narrative section below)				
Additional technology or equipment needs (if applicable, describe in narrative section below)	\$30,000	\$90,000	\$115,000	\$115,000
Other expenses (if applicable, describe in narrative section below)				
Total Projected Expense	\$433,000	\$603,000	\$715,000	\$715,000

Budget Narrative:

(Use narrative to provide additional information as needed based on responses above.)

The proposed BSET program will have the potential to enroll students from several sources, initially focusing on current Ohio State regional campus students who may find the program to be the best fit for their interests and goals and future applicants who may not have considered Ohio State without the BSET.

The first source of potential enrollment is the population of students who are enrolled in an Engineering pre-major or an introductory Engineering course (ENGR 1181 or 1182) at the Lima, Marion, and Mansfield campuses. These students have demonstrated a clear interest in completing an Engineering degree, but

not all of these students will successfully transition to an Engineering major on the Columbus campus. Reasons for this “leaky pipeline” might include the highly competitive admission requirements for Columbus campus engineering majors, the cost of attendance at the Columbus campus, and some students’ preference to stay in the regional campus area. In any case, the proposed BSET program would provide an alternative for these students to complete an Engineering degree.

The second source of potential enrollment is the population of students who are enrolled in University Exploration at Lima, Marion, and Mansfield. These students are in Exploration either because they are undecided about their major and would like to explore multiple options or because they have not met criteria for their major of interest. An advisor at the Mansfield campus estimates that 25% of students in University Exploration have expressed an interest in engineering. Because engineering has competitive enrollment criteria, which is associated with a level of math preparation sufficient to place into calculus, there may be a substantial pool of students in Exploration who would be interested in and ready to enter a BSET alternative.

Engineering, Exploration, ENGR 1181 Regional Campus Enrollments

Term	Lima Enrollment		
	Engineering	Exploration	ENGR 1181
AU15	12	297	35
AU16	18	243	37
AU17	8	214	37
AU18	8	238	38

Term	Mansfield Enrollment		
	Engineering	Exploration	ENGR 1181
AU15	14	382	38
AU16	12	358	33
AU17	14	291	34
AU18	17	262	41

Term	Marion Enrollment		
	Engineering	Exploration	ENGR 1181
AU15	40	307	58
AU16	35	322	50
AU17	37	343	55
AU18	49	369	63

New Regional Campus Engineering Students: Changes to Columbus by SP18

Year Admitted to OSU	Lima			
	Total	Changed to COE, Columbus	Changed to Another Major, Columbus	Did Not Change to Columbus
SU12-SP13	29	14	8	7
SU13-SP14	28	11	6	11
SU14-SP15	17	7	5	5
SU15-SP16	8	4	0	4
SU16-SP17	10	8	0	2
Total	92	44	19	29

Year Admitted to OSU	Mansfield			
	Total	Changed to COE, Columbus	Changed to Another Major, Columbus	Did Not Change to Columbus
SU12-SP13	39	20	3	16
SU13-SP14	38	26	5	7
SU14-SP15	28	22	4	2
SU15-SP16	10	8	1	1
SU16-SP17	9	6	0	3
Total	124	82	13	29

Year Admitted to OSU	Marion			
	Total	Changed to COE, Columbus	Changed to Another Major, Columbus	Did Not Change to Columbus
SU12-SP13	31	24	3	4
SU13-SP14	50	29	1	20
SU14-SP15	31	22	4	5
SU15-SP16	21	11	4	6
SU16-SP17	16	7	1	8
Total	285	175	26	84

A third source of potential enrollment is the pool of prospective students who are not already in Engineering or University Exploration at Ohio State but who would enroll to pursue the proposed BSET degree. Students in the Marion and Mansfield areas who are seeking strong career prospects with the manufacturing industry may considering staying to complete this degree; such students have been estimated by a Mansfield campus advisor as composing 15-20% of the regional campus population. Additional groups of potential students are graduates of the regional Ohio Technical Centers (e.g., Tri-

Rivers Career Center) and STEM schools (e.g., Northwestern High School) as well as graduates of the co-located community colleges (e.g., Marion Technical College) and regional two-year programs. Student veterans who are using benefits to complete a baccalaureate degree may also be interested in the proposed BSET program, which might present fewer barriers to timely completion given the program's curricular structure and regional campus access. In Autumn 2018, there were 41 student veterans enrolled at Mansfield and 30 at Marion.

Finally, after the program becomes fully established, there may be some interest from students on the Columbus campus who are enrolled in either an engineering pre-major or University Exploration. The Columbus campus engineering degree programs, as described previously, are highly competitive due to limited capacity. Some students may consider transferring to the regional campuses to complete a BSET degree. Furthermore, the Engineering programs on the Columbus campus are grounded firmly in a theoretical understanding of Calculus I and II. Many Engineering students find that this coursework is not a good fit after a semester or two, and they therefore leave Engineering entirely even though they have a strong desire to do technical work. To provide some context, each year approximately 275 (or 17%) of the 1,600 newly admitted first-year students in Engineering pre-majors at Columbus leave the college. In Autumn 2017, about 100 of the new first-year students in Engineering pre-majors at Columbus were unsuccessful in their Calculus I course, earning a variation of D, E, or W grades. The proposed BSET program may provide a better academic fit for students interested in an Engineering degree with an emphasis on the application of the coursework to specific industry contexts.

Based on the foregoing data, estimated enrollments will be sufficient to achieve the self-sustaining levels detailed below in section X, with approximately 42 students starting the program in Rank 1 and approximately 15 graduating each year from each participating regional campus.

Currently, the first year of the Bachelor of Science in Engineering is available on the regional campuses. The Marion campus also offers some second-year courses in electrical engineering, and the Mansfield campus offers some second-year courses in mechanical engineering. In order to offer the proposed BSET curriculum, lab resources will be shared between each regional campus and its respective co-located community or technical colleges (Central Ohio Technical College, Marion Technical College, North Central State College, and Rhodes State Community College), or between a given regional campus and another regional partner (such as a career technical center). New faculty will need to be hired for the new courses, some of which will be taught as hybrid online and face-to-face classes that can be offered at multiple regional campus locations. Support services, such as academic advising, at the regional campuses will remain the same.

The following chart outlines the costs of starting the BSET program on one regional campus beyond current expenditures. These estimates are based on the following assumptions: no students will be admitted until Autumn 2020, when students will be admitted only into the first-year curriculum; the following year (2021-22), the first two years of the curriculum will be offered; and in 2022-23, the first three or possibly all four years of the curriculum will be offered if warranted by enrollments. Additionally, the regional campuses will attempt to reduce costs by sharing faculty via distance education when possible. Five full-time clinical faculty with an annual teaching load of 21 credit hours per year should be able to deliver the full curriculum (not including non-Engineering GE courses). All of these costs will be borne by the regional campuses. Some of the initial costs will be paid for by development funds (listed as "Other income" in the fiscal impact statement, above).

Estimated Start-Up Costs of the BSET on One Campus

Year	No. of Faculty	Faculty Cost ¹	Lab Costs ²	Coordinator ³	UITL ⁴	Total
2019-20	1	\$110,000	(none taught)	\$35,000	\$15,000	\$160,000
2020-21	3	\$330,000	\$30,000	\$35,000	\$15,000	\$410,000
2021-22	4	\$440,000	\$90,000	\$35,000	\$15,000	\$580,000
2022-23	5	\$550,000	\$115,000	\$35,000		\$700,000

¹Most faculty will be hired as Clinical Assistant/Associate/Professor of Practice and may earn additional income (not part of their regular salary) through consultative employment with one or more industry partners. Faculty costs above include the salary, benefits, and professional development funds paid for by the regional campus.

²Lab space will be shared with a co-located community college and / or a career and technical center or other partner; projected costs shown include space rental, materials costs, and lab instructor.

³The Coordinator will work with the regional campus associate deans and Columbus chairs to help build and manage the program as well as prepare for ABET accreditation. The Coordinator's salary and benefits cost will be divided four ways (between Lima, Marion, Mansfield, and Newark) and includes professional development support; each campus will pay a maximum of \$35,000 per year.

⁴The University Institute for Teaching and Learning (UITL) costs pay for a staff member to support the creation of BSET course proposals and conduct teacher training for new faculty for the first years of the program. This cost will be divided four ways (between Lima, Marion, Mansfield, and Newark).

The above costs will be met primarily through tuition revenue (see chart, below), although start-up costs in 2019-20 and 2020-21 will be supported by fundraising through private industry stakeholders who project a high return on their investment in this program.

The following chart shows a conservative break-even projection of enrollments necessary to make the program fiscally self-sustaining on a single campus once all four years of the curriculum are offered. These enrollment projections are in line with other popular majors on the regional campuses.

Self-Sustaining BSET Enrollments (Projected) for One Campus

Rank	No. of Students	Tuition Revenue*
1	42	\$321,048
2	21	\$160,524
3	17	\$129,948
4	15	\$114,660
Total:	95	\$726,180

*Based on annual NFYS tuition for 2018-19 of \$7644 on the regional campuses. State Share of Instruction (SSI) is not included here because that revenue will cover facilities and administrative costs.

APPENDICES

Please list the appendix items submitted as part of the request in the table provided below. Please list the items in the order that they are referred to in the text.

Please note that the institution is required, at a minimum, to submit the following the items as part of the review:

Results of recent accreditation reviews (see below)

Course syllabi

Organizational Chart: https://oaa.osu.edu/sites/default/files/links_files/oaa-org-chart.pdf

Faculty CVs (see below)

Faculty/student handbooks: <https://mansfield.osu.edu/faculty-and-staff-handbook/>

Current catalog: <https://registrar.osu.edu/courses/>

Other items as directed in the supplemental forms (if submitted)

Appendix Name	Description
A	Reaffirmation of Reaccreditation
B	BSET Goals, Outcomes, and Proficiencies
C	Mirel Caibar CV
D	Tena Katsaounis CV
E	Wenfei Li CV
F	William Putikka CV
G	Kelly Whitney CV
H	Concurrence Letter - ECE
I	Concurrence Letter - EED
J	Concurrence Letter - ISE
K	Concurrence Letter - MAE
L	Concurrence Letter - MSE

Commitment to Program Delivery

Provide a statement of the institution's intent to support the program and assurances that, if the institution decides in the future to close the program, the institution will provide the necessary resources/means for matriculated students to complete their degree.

Verification and Signature

(Insert name of the institution) verifies that the information in the application is truthful and accurate.

Signature of the Chief Presiding Officer or the Chief Academic Officer

(Insert name and title of the chief presiding or chief academic officer)



HIGHER LEARNING COMMISSION

230 South LaSalle Street, Suite 7-500
Chicago, IL 60604-1411
312.263.0456 | 800.621.7440
Fax: 312.263.7462 | hlcommission.org

August 7, 2017

Dr. Michael Drake
President
Ohio State University
205 Bricker Hall
190 North Oval Mall
Columbus, OH 43210

Dear President Drake:

This letter serves as formal notification and official record of action taken concerning Ohio State University by the Institutional Actions Council of the Higher Learning Commission at its meeting on July 31, 2017. The date of this action constitutes the effective date of the institution's new status with HLC.

Action. IAC continued the accreditation of Ohio State University with the next Reaffirmation of Accreditation in 2026-27.

In two weeks, this action will be added to the *Institutional Status and Requirements (ISR) Report*, a resource for Accreditation Liaison Officers to review and manage information regarding the institution's accreditation relationship. Accreditation Liaison Officers may request the ISR Report on HLC's website at <http://www.hlcommission.org/isr-request>.

Information on notifying the public of this action is available at <http://www.hlcommission.org/HLC-Institutions/institutional-reporting-of-actions.html>.

If you have any questions about these documents after viewing them, please contact the institution's staff liaison Eric Martin. Your cooperation in this matter is appreciated.

Sincerely,

Barbara Gellman-Danley
President

CC: ALO

BSET Goals, Outcomes, & Proficiencies

Goal #1

Systems Thinking & Problem Solving:

The successful student will be able to effectively solve problems by applying the appropriate engineering technologies, tools and techniques within systems of equipment, controls and people.

Proficiencies

Students can:

- identify and use modern tools of engineering technology
- conceptualize the appropriate tools that can be used to solve engineering technology problems
- identify, select, apply, and properly use tools and techniques required for engineering technology problems from conceptualization to completion
- demonstrate the safety and industrial hygiene practices associated with the use of these tools and the application of their designs

Students can:

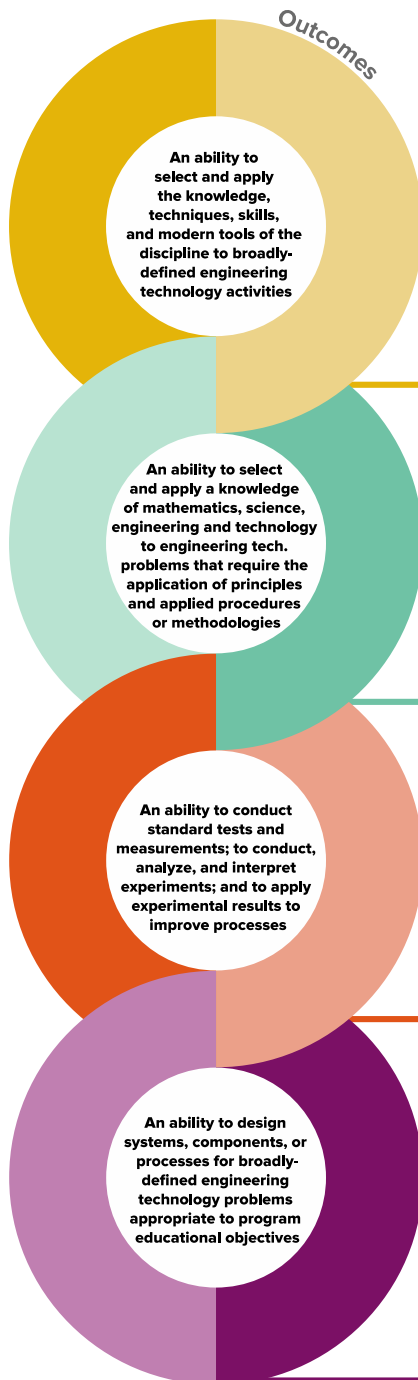
- solve mathematical calculus-based problems required for application-based engineering tech.
- create mathematical formulations and solve them for an applied engineering tech. problem
- conceptualize the mathematical methods used to solve engineering problems, set up the approaches, and solve
- evaluate and use proper scientific concepts and methods to determine what science is needed to evaluate an engineering technology application based problem
- conceptualize the types of scientific methods needed to evaluate a new problem and properly investigate it
- describe using proper nomenclature and application of the common tools of engineering & technology
- can select the appropriate engineering & technology tools to solve a specific, given problem
- demonstrate the range of engineering technology tools to solve multi-faceted problems, supported by math and science principles
- understand and justify a range of problem-solving approaches and the underlying rationale for each type of problem solving approach

Students can:

- describe and identify what standard tests or measurements they would take for a particular problem that requires analysis
- properly execute steps required to conduct standard test / measurement with guidance / support
- conduct standard test / measurement properly without guidance / support
- interpret results of tests and provide recommendations on process improvement based on results. (student lays out the methods of data collection either through standardized testing or through some standard measurement method – must answer 'does the collection method match the need for data?')

Students can:

- identify the stakeholders based on a broad perspective of those who might impact or be impacted by a new or re-designed process
- solicit the needs of these stakeholders and synthesize their input into cohesive communications
- evaluate their design against the needs of their stakeholders evaluating the pros and cons
- identify possible compromises from the stakeholders and find a balanced solution that meets the organization's needs
- map out the process for achieving alignment on stakeholder needs
- implement the proposed solution or develop the proposed system or process, utilizing the proper math, science, engineering and technology.



Goal #2

Professional Skills/Communication:

A successful student will be able to demonstrate, appreciate, and master interpersonal communications skills in the modern workplace.

Proficiencies

Students can:

- identify and explain different styles of conflict management and schools of thought on relationship management and supervisory skills
- describe different servant leadership models
- determine different types of conflict, the effects of conflict and adopt practices to manage conflicts
- recognize and evaluate use of service leadership models in a given situation
- practice conflict resolution and relationship management techniques in real-life instances (through role play or internships)
- engage in service leadership model practices

Students can:

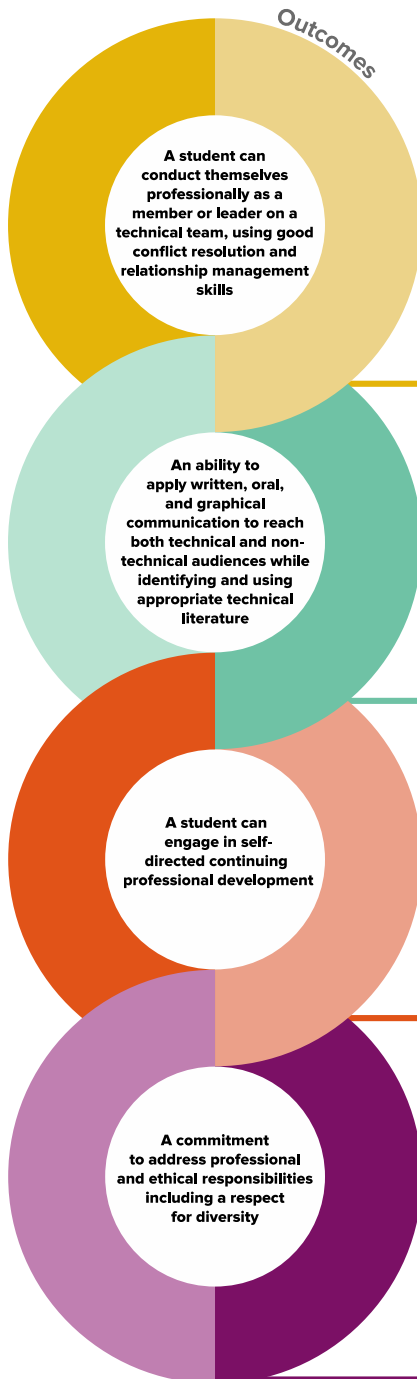
- discern different communication types and select message types based on the situation and mechanisms by which messages are transferred
- assess the audience(s) based on the communication type and content and craft messages based on the audience
- develop technical messaging to reach intended audiences using common mechanisms of technical writing (reports, instructions and descriptions) and oral communication (presentations)

Students can:

- articulate the importance of continuing professional development (CPD) and the role of proactive self-assessment
- engage in self-assessment of professional knowledge, using objective measures and outcomes
- develop a five-year plan on status in professional development, your strengths and sources for self-improvement

Students can:

- can determine diversity's benefits in the workplace culture and improved performance outcomes
- comprehend ethnic, gender and cultural diversity within the workplace and related laws and regulations
- describe the science behind implicit bias and recognize biases and stereotypes in the workplace
- analyze how diversity of groups are leveraged in projects and impact decision making
- demonstrate methods of inclusiveness that highlights the challenges and benefits of diversity practices including engaging in case studies
- identify basic principles of professional ethics and determine professional and ethical practices that benefit the workplace
- recognize unethical and unprofessional behaviors that impact the workplace (case studies)
- determine proactive approaches and potential remedies to counter unethical and unprofessional behavior in the workplace
- demonstrate professional responsibilities and accountability in the workplace through implementing best-practice approaches, including types of requests and addressing issues that support the best interests of the organization



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Goal #3

Business: A successful student will be able to understand business terminology, analyze value of alternatives, and communicate the business, societal and global impacts effectively.

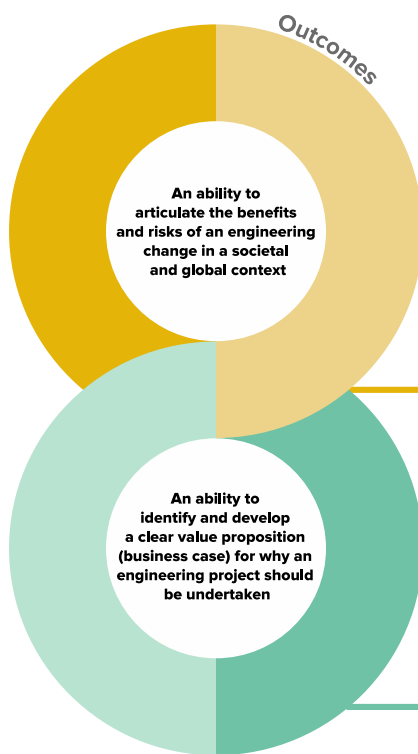
Proficiencies

Students can:

- describe and define the types of social and global impacts an engineering project could have
- describe connections between societal and global impacts of an engineering change on an ecosphere for a specific given problem
- craft a clear presentation for a problem solution outlining options and trade offs from a financial, societal, and global perspective

Students can:

- identify what the value proposition is in a business case
- define and explain terms from their business vocabulary. Students can describe the meaning of basic business acumen/terminology like cost, revenue, and specific details like fixed cost, variable cost
- gather data around the impact of a current problem and the impact of the financial trade offs in solving it
- demonstrate how to use this terminology to effectively describe the business benefits and risks in a problem evaluation
- analyze the value of various alternatives to the problem
- quantify the financial value of solving a problem with the help of other resources
- determine the value proposition of a project using business tools, describe its meaning, and make a recommendation
- develop and present their problem, evaluation of alternatives, and recommendation with clear and correct financial vocabulary



THE OHIO STATE UNIVERSITY
OHIO MANUFACTURING INSTITUTE

Goal #4

Continuous Improvement:

The successful student will be able to optimize processes and systems with respect to quality, timeliness, and continuous improvement.

Proficiencies

Students can:

- propose appropriate targets to be achieved by a given process
- develop a high-level process to ensure an organization maintains a focus on the targets
- provide justification / rationale for including the chosen elements

Students can:

- from the process targets identify the key data points to be monitored while the process is running

Students can:

- In a case study detail the development of a standard process including the targets to be achieved. Also include the results from the running process so the student can understand the operating data
- compare the running results to the targets
- based on the deviations in the process brainstorm the potential causes of the deviations

Students can:

- identify and describe the purpose of each tool
- identify a specific approach to analyzing a situation and justify their selected method for identifying the root cause of a problem
- can develop and implement the selected approach and methods
- list all data that would need to be collected and analyzed to provide a complete understanding
- effectively balance the trade offs in data collection
- collect relevant data and analyze results to evaluate the success of the selected approach and methods

Students can:

- explain the importance and tradeoffs of evaluating data and the resultant costs
- propose modifications and improvements to the approach and methods for future application and provide a high-level decision analysis of the analysis tools that could be applied to the data set(s)



THE OHIO STATE UNIVERSITY
OHIO MANUFACTURING INSTITUTE

Mirel Caibăr

Department of Mathematics
The Ohio State University
Mansfield Campus
Mansfield, OH 44906

Email: caibar@math.ohio-state.edu
Webpage: <http://www.math.ohio-state.edu/~caibar/>
Phone: (419) 755-4360
Fax: (419) 755-4241

Academic background

University of Warwick, Ph.D. in Mathematics under the supervision of Professor Miles Reid, including six months at Nagoya University, Japan 07/1999

Title of thesis: *Minimal models of canonical singularities and their cohomology*

University of Bucharest, Romania, M.S. in Mathematics 07/1991

Title of dissertation: *The Mordell–Weil Theorem*

University of Bucharest, Romania, B.S. in Mathematics 07/1990

Appointments

The Ohio State University, Mansfield Campus, Associate Professor 09/2011 – present

The Ohio State University, Mansfield Campus, Assistant Professor 10/2004 – 09/2011

University of California, Riverside, Lecturer 09/2003 – 06/2004

University of California, Riverside, Visiting Assistant Professor 07/2001 – 06/2003

University of North Carolina at Chapel Hill, Postdoctoral Research Associate 08/1999 – 06/2001

Publications and preprints

M. Caibăr, “Intersection cohomology of 3-fold minimal models”, in preparation

M. Caibăr, H. Clemens, “Topological versions of Abel-Jacobi, the height pairing, and the Poincaré bundle”, Preprint arXiv:1104.4057

M. Caibăr, H. Clemens, “Incidence and Abel-Jacobi equivalence”, Preprint arXiv:1109.2932

T. Bauer, M. Caibăr, G. Kennedy, “Zariski decomposition: a new (old) chapter of linear algebra”, *Amer. Math. Monthly*, **119** (2012), no. 1, 25–41

M. Caibăr, “A note on adjoint linear systems”, *Geom. Dedicata*, **153** (2011), no. 1, 125–130

M. Caibăr, “Minimal models of canonical 3-fold singularities and their Betti numbers”, *Int. Math.*

Res. Not. **2005**, no. 26, 1563–1581

M. Caibăr, “On the number of crepant valuations of canonical singularities”, *J. London Math. Soc.* (2) **68** (2003), no. 2, 307–316

M. Caibăr, “On the divisor class group of 3-fold singularities”, *Internat. J. of Math.*, **14**, (2003), no. 1, 105–117

Edited books

G. Kennedy, M. Caibăr, A.-M. Castravet, E. Macri, ed., Volume of proceedings for the conference “Hodge Theory and Classical Algebraic Geometry”, Contemporary Mathematics, vol. 647, American Mathematical Society, Providence, RI, 2015

Research lectures

The Ohio State University, “Invitations to Mathematics” lecture series, “Introduction to canonical singularities”, March 2014

The Ohio State University, 2008 – 2009 Special Year on Analytic and Algebraic Geometry: Multiplier Ideals, “Introduction to the ACC Conjecture for log canonical thresholds”, February 2009

The Ohio State University Algebraic Geometry Seminar, “Linear systems on threefolds”, February 2008

University of Warwick, UK, 2007 – 2008 Warwick EPSRC Symposium on Algebraic Geometry, “Introductory workshop on Higher Dimensional Minimal Model Program”
“3-fold canonical and terminal singularities (1)”, September 2007

University of Warwick, UK, 2007 – 2008 Warwick EPSRC Symposium on Algebraic Geometry, “Introductory workshop on Higher Dimensional Minimal Model Program”
“3-fold canonical and terminal singularities (2)”, September 2007

The Ohio State University Algebraic Geometry Seminar, “Minimal models of canonical 3-fold singularities”, May 2006

The Ohio State University Algebraic Geometry Seminar, “Partial resolutions of canonical 3-fold singularities and their Betti numbers”, January 2004

Algebraic Geometry Seminar at the University of California, Riverside, several lectures on 3-fold singularities and on multiplier ideal sheaves, 2001–2004

Joint University of North Carolina at Chapel Hill and Duke University Algebraic Geometry Seminar
“On the topology of canonical singularities”, September 1999
“The McKay Correspondence”, March, April 2000

“Jet schemes of canonical singularities”, November 2000

Université des Sciences et Technologies de Lille, Lille, France, Summer school “Singularités en géométrie algébrique”

“On the topology of canonical singularities”, June 1999

Tokyo University, “On the topology of certain threefold singularities”, July 1997

Tokyo Institute of Technology, “On canonical hypersurface singularities”, July 1997

Nagoya University, “On the divisor class group of certain threefold singularities”, April 1997

Calf Cambridge-Oxford-Warwick Junior Algebraic Geometry Seminar

“On the topology of canonical singularities”, June 1998

“Introduction to canonical singularities”, March 1999

Academic visits

Mathematics Research Centre, University of Warwick, UK. Title of the program: “2007 – 2008
Warwick EPSRC Symposium on Algebraic Geometry” September 2007 – December 2007

Isaac Newton Institute for Mathematical Sciences, Cambridge, UK. Title of the program: “Higher
Dimensional Complex Geometry”, June 2002 – July 2002

Research Grants and Scholarships

NSF conference grant DMS-1302880, Title: “Hodge Theory and Classical Algebraic Geometry”,
Co-PI, March 2013 – February 2014

Mansfield Campus Seed Grant, March 2007 – February 2008

Wolfson Foundation Scholarship, University of Warwick, October 1994 – February 1997

NUPACE-AIEJ Scholarship, Nagoya University, March 1997 – September 1997

Wolfson Foundation Scholarship, University of Warwick, October 1997 – March 1999

Teaching experience

The Ohio State University, Mansfield Campus, October 2004 – present

Autumn 2017: College Algebra, Precalculus, Calculus II

Autumn 2016: College Algebra (two sections), Calculus II

Autumn 2015: Precalculus, Calculus II

Autumn 2014: College Algebra, Calculus for Business, Calculus II

Spring 2014: Calculus I, Engineering Mathematics A
 Autumn 2013: College Algebra, Calculus II, Engineering Mathematics A
 Spring 2013: College Algebra, Engineering Mathematics A
 Autumn 2012: College Algebra for Business, Calculus I
 Spring 2012: Elementary Functions, Calculus and Analytic Geometry III, Transition Engineering Calculus A
 Autumn 2011: Elementary Functions, Calculus and Analytic Geometry I, Mathematical Analysis for Business I
 Spring 2011: Mathematical Analysis for Business II, Mathematical Analysis for Business III, Calculus and Analytic Geometry II
 Autumn 2010: Mathematical Principles in Science I, Algebra and Trigonometry and their Applications, Mathematical Analysis for Business III
 Spring 2010: Mathematical Analysis for Business III, Elementary Functions, Calculus and Analytic Geometry II
 Autumn 2009: Mathematical Analysis for Business II, Algebra and Trigonometry and their Applications, Calculus and Analytic Geometry I
 Spring 2009: Excursions in Mathematics, Mathematical Analysis for Business II, Calculus and Analytic Geometry II
 Autumn 2008: Mathematical Analysis for Business I (two sections), Mathematical Analysis for Business III
 Spring 2008: Mathematical Analysis for Business II, Calculus and Analytic Geometry I
 Winter 2008: Mathematical Analysis for Business III, Calculus and Analytic Geometry I
 Spring 2007: Algebra and Trigonometry and their Applications, Mathematical Analysis for Business II, Calculus and Analytic Geometry I
 Autumn 2006: Algebra and Trigonometry and their Applications (two sections), Calculus and Analytic Geometry II
 Winter 2006: Elementary Functions (two sections), Mathematical Analysis for Business III
 Autumn 2005: Algebra and Trigonometry and their Applications (two sections)
 Winter 2005: Calculus and Analytic Geometry II, Algebra and Trigonometry and their Applications (two sections)
 Autumn 2004: Calculus and Analytic Geometry II, Mathematical Analysis for Business III

University of California, Riverside,

July 2001 – June 2004

Spring 2004: First-Year Calculus (two sections)
 Winter 2004: First-Year Calculus (three sections)
 Fall 2003: First-Year Calculus (two sections)
 Spring 2003: Calculus of Several Variables, First-Year Calculus
 Winter 2003: Calculus of Several Variables, First-Year Calculus
 Fall 2002: Introduction to Ordinary Differential Equations, First-Year Calculus
 Spring 2002: Finite Mathematics, First-Year Calculus
 Winter 2002: Linear Algebra, First-Year Calculus
 Fall 2001: Finite Mathematics, First-Year Calculus

University of North Carolina at Chapel Hill,

August 1999 – June 2001

Spring 2001: Discrete Mathematics, Calculus
 Fall 2000: Linear Algebra and Differential Equations, Calculus

Spring 2000: Calculus
Fall 1999: Calculus (3 sections)

Service

Professional

Co-organizer of the OSU/UIC/UM Algebraic Geometry Workshop, The Ohio State University,
April 2014

<https://people.math.osu.edu/events/osuumuic/>

Co-organizer of the international conference “Hodge Theory and Classical Algebraic Geometry”,
The Ohio State University, May 2013

<http://www.math.osu.edu/conferences/hodge/>

Co-organizer of the Special Session on “Birational Geometry”, AMS 2006 Fall Central Section
Meeting Cincinnati, OH, October 2006

Co-organizer of the Algebraic Geometry Seminar, University of North Carolina at Chapel Hill, 1999
– 2001

Referee for several journals

Professional/public/community

Senior personnel member, The Ohio State Mansfield Math Literacy Initiative, May 2016 – present

Participant, The Ohio State Mansfield Math Literacy Initiative Inter-district Professional
Development, February 2016

Lecturer, Mathematics workshop, The Ohio State University, Mansfield Campus, Conard Learning
Center, January 2013

Lecturer, Mathematics workshop, The Ohio State University, Mansfield Campus, Conard Learning
Center, September 2012

Volunteer, Visited a science learning center and suggested ideas for an engaging exhibit around
Algebra, appropriate for elementary/middle school students, Mansfield, June 2012

Coordinator of the OSU-Mansfield participation as a host site for the Mathematical Association of
America’s American Mathematics Contest for high school students, February 2007

Participant in *MathTime*, an advanced math program offered at the Mansfield Campus of the
Ohio State University to area middle and high school students who have talent and interest in

mathematics,

October 2005 – March 2007

Advising to student groups

Advisor, Tango at The Ohio State University,

September 2014 – present

Advisor, ATCO, Argentine Tango in Columbus, Ohio,

October 2009 – October 2010

Campus Committees

Coordinator of the selection of the Math and Physical Sciences book award recipient, 2017

Diversity and Inclusion Committee, Member, January 2017 – present

Peer Evaluation of Teaching Committee, Member, November 2016

Coordinator of the selection of the Math and Physical Sciences book award recipient, 2016

Mathematics Search Committee, Member, 2015 – 2016

Coordinator of the selection of the Math and Physical Sciences book award recipient, 2015

Peer Evaluation of Teaching Committee, Member, October 2015

Mansfield Campus Mathematics Coordinator, January 2014 – present

Promotion and Tenure Committee, Member of two sixth-year review subcommittees, 2013 – 2014

Academic Enrichment Committee, Member, January 2014 – December 2016

Faculty/Staff Program Committee, Member, 2013 – 2014

Peer Evaluation of Teaching Committee, Member, October 2013

Professional Development Committee, January 2011 – December 2013

Peer Evaluation of Teaching Committee, Member, 2011

Mansfield Campus Safety Supervisor Selection Committee, OSU-M Faculty Representative, 2011

Academic Standards Committee, Member, January 2009 – December 2010

Peer Evaluation of Teaching Committee, Member, April 2010

Mansfield Campus Executive Committee, Vice President,	January 2008 – December 2008
Peer Evaluation of Teaching Committee, Member,	February 2008
Fall Convocation Committee, Member,	2006
Curriculum Committee, Member,	January 2005 – December 2007

Departmental Committees

Mathematics Education Forum Committee, Department of Mathematics,	October 2016 – present
Invitations Committee, Department of Mathematics, Member,	2013 – 2014

University Committees

Registrar's Faculty Advisory Council, Member, Mansfield Campus Representative,	2011 – present
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CURRICULUM VITAE

September, 2015

Tena I. Katsaounis
katsaounis.1@osu.edu

Department of Mathematics

The Ohio State University
Ovalwood 378
Mansfield, Ohio 44906
Phone: (419) 755-4032

EDUCATION

PhD in Statistics, 2006. Department of Statistics, The Ohio State University, Columbus, Ohio.
MS in Statistics, 1996. Department of Statistics, The Ohio State University, Columbus, Ohio.
MA in Mathematics, 1988. Department of Mathematics, The Ohio State University, Columbus, Ohio.
BS in Mathematics, 1984. Department of Mathematical and Physical Sciences, Aristotelean University, Thesaloniki, Greece.

ACADEMIC SCHOLARSHIPS

Academic Achievement Scholarship, 1982-83. Department of Mathematical and Physical Sciences, Aristotelian University, Thesaloniki, Greece. Sponsored by the Institute of Government Scholarships, Greece.

PROFESSIONAL MEMBERSHIPS

American Statistical Association, 1992- . Member of Section on Physical and Engineering Sciences, Section on Statistics Education, and Cleveland Chapter of ASA.
Institute of Mathematical Statistics, Life member since 1995.
Interface Foundation of North America, 1999- .
Caucus for Women in Statistics, 2000- .
Ohio State University Alumni Association, Life member since 1988.

TEACHING EXPERIENCE

Lecturer, Summer 2006-present. Department of Mathematics, The Ohio State University, Mansfield Ohio.

Stat145/Stat1450 (Winter 2007-present) . Introduction to the Practice of Statistics: Probability, descriptive statistics, correlation, regression, design of experiments, sampling, estimation, and testing; emphasis on applications, statistical reasoning, and data analysis using statistical software.

Stat135 /Stat1350 (Fall 2006-present). Elementary Statistics: Introduction to probability and statistics, experiments, and sampling, data analysis and interpretation.

Stat133/ Stat1430 (Fall 2007-present). Statistics for the Business Sciences: Introduction to basic concepts of descriptive statistics and probability; including graphical and numerical data summaries, properties of discrete and continuous probability distributions, and sampling distributions.

Business Statistics 2310 (Spring 2013, Spring 2014, Spring 2015). The overall objectives of the course are to familiarize students with the use of statistical procedures for the purpose of generating decision making information from data, and to help students develop behavioral habits suitable for a professional, business environment, as well as effective communication tools.

Ed T&L 711.04 and Math 610.04 (Fall 2007, Winter 2008, Fall 2008, Summer 2009). Data Analysis. Designed and taught an introductory course on data analysis for K-12 Math teachers.

Math 610.04 (Summer 2007): Statistics. Designed and taught a two week introductory course on data analysis and probability for Math High School teachers .

Math 1144 (Fall 2012). Precalculus. Understanding the basic properties of “elementary” functions : polynomial, rational, exponential, logarithmic, trigonometric, and inverse trigonometric; modeling real-life situations in terms of these functions.

Math 148 (Summer 2006, Winter 2012). Algebra and Trigonometry and their applications: Applications from chemistry, physics and biology involving integer and rational exponents, solving and graphing linear and quadratic equations, systems of equations, trigonometry of acute angles, vectors and exponential equations.

Math 075 (Winter 2007). Pre college Mathematics II: Factoring, rational expressions and equations, graphs, systems of linear equations and inequalities, problem solving, roots and radicals, quadratic equations, complex numbers.

Math 050 (Fall 2006, Fall 2007). Pre college Mathematics I: Arithmetic of fractions and decimals, basic algebra, graphing equations, geometry, exponents, applications of exponents, lines and slopes, area.

Graduate Teaching Associate, 1996-2006. Department of Statistics, The Ohio State University, Columbus Ohio:

Stat135 (Fall 2005, Winter 2006; Marion Campus, Marion Ohio). Elementary Statistics: Introduction to probability and statistics, experiments, and sampling, data analysis and interpretation. Sole responsibility for lectures. Planned lessons, graded assignments and exams, proctored exams and tutored students for two sections, as Lecturer and Computer Lab Instructor.

Stat135 (Winter 2005-Spring 2005, Winter 2004-Spring 2004, Winter 2003, Spring 1995 and Fall 1995). Elementary Statistics: Introduction to probability and statistics, experiments, and sampling, data analysis and interpretation. Planned lessons, graded assignments and exams, proctored exams and tutored students for two sections, as Computer Lab Instructor.

Stat 245 (Fall 2004). Introduction to Statistical Analysis. Calculus based introduction to data analysis, experimental design, sampling, probability, and inference. Planned lessons, graded assignments and exams proctored exams and tutored students for two sections, as Computer Lab Instructor.

Stat 428 (Fall 2002). Introduction to Probability and Statistics for Engineering and the Sciences. Point and interval estimation; hypotheses tests for proportions, means, variances, and goodness-of-fit; least squares regression. Graded homework assignments.

Stat145 (Spring 1996). Introduction to the Practice of Statistics. Probability, descriptive statistics, correlation, regression, design of experiments, sampling, estimation, and testing; emphasis on applications, statistical reasoning, and data analysis using statistical software. Planned lessons, graded assignments and exams, proctored exams and tutored students for two sections, as Computer Lab Instructor.

Stat 629 (Winter 1996). Applied Regression Analysis : Multiple regression models; diagnostics, inferences, and variable selection; ANOVA with several factors. Graded homework assignments. Graded homework assignments.

Stat 632 (Winter 1996). Applied Stochastic Processes: Conditioning, discrete time Markov chains, Poisson processes, branching process. Graded homework assignments. Graded homework assignments.

Graduate Student Teacher in Mathematics, 1986-1987. Department of Mathematics Education, The Ohio State University, Columbus Ohio:

Geometry and Advanced Algebra (1987, Shelby High School, Shelby Ohio);
Geometry (1986, Whetstone High School, Columbus, Ohio);
Geometry (1986, West High School, Columbus, Ohio);
Algebra (1986, Alternative High School, Columbus, Ohio).
Planned lessons and assignments, graded homework and exams, tutored students and held meetings with students' parents.

CONSULTING EXPERIENCE

Intern Research Statistician, 1997-98. Department of Marketing, Nationwide Insurance Co., Columbus, Ohio.

Analyzed Categorical Insurance Data and wrote statistical analyses reports presented at a research team meetings. Evaluated Logistic Regression using SAS vs. Neural Networks.

COMPUTER EXPERIENCE

Operation Systems: Unix/ Linux, Windows XP, MS DOS
Programming Languages: Fortran90, SAS, SAS IML
Statistical Software : SAS, Minitab, JMP, S+, R, Data Desk, Microsoft XL
Mathematical Software: Matlab, Mathematica.
Word Processing Software: LaTeX, Microsoft Word, Excel and Power Point.

Statistical software evaluation:

Experimentation for Profit, Spring 2002. Authored by Theodore Allen, Department of Industrial Systems and Engineering, The Ohio State University, Columbus, Ohio.

Logistic Regression using SAS vs. Neural Networks, 1997-98, Nationwide Insurance Co., Columbus, Ohio.

Minitab 8.0 adapted for education PC version vs. Minitab 8.2 commercial Mac version, 1993.
Department of Statistics, The Ohio State University, Columbus, Ohio.

CURRENT RESEARCH

An evaluation of binary linear codes for screening experiments, with M. Aggarwal, University of Memphis (submitted).

On equivalence of codes (under review)

Nonregular two-level fractional factorial split-plot designs, with A. Dean, Ohio State University and D. Bingham, Simon Fraser University (to be submitted).

PUBLICATIONS

Katsaounis, T. I., Dean, A. M., Bradley Jones, Bradley, 2013. *On equivalence of fractional factorial designs based on singular value decomposition*, Journal of Statistical Planning and Inference, 143, 1950-1953.

Katsaounis T. I., 2012. *Equivalence of factorial designs with qualitative and quantitative factors*. Journal of Statistical Planning and Inference, 142, 79-85.

Katsaounis, T. I., 2012. “*What do Frogs eat?*” Bridging the Gap between Common Core Standards and Teaching Statistics, National Council of Teachers of Mathematics and American Statistical Association, Investigation 6.3, 231-241.

Katsaounis T., Dean A. M., 2008. *A survey and evaluation of methods for determination of combinatorial equivalence of factorial designs*, Journal of Statistical Planning and Inference, 138, 245-258.

Katsaounis T. I., Dingus C. A. and Dean A. M., 2007. *On the geometric equivalence and non-equivalence of symmetric factorial designs*, Journal of Statistical Theory and Practice, Vol. 1, No. 1, 101-105.

Katsaounis T. I., 2002. *Information matrices of irregular factorial designs*, Interstat, <http://interstat.statjournals.net/YEAR/2002/articles/0204002.pdf>

Katsaounis T. I., 2001. *On partially balanced arrays*, Interstat, *Interstat*, <http://interstat.statjournals.net/YEAR/2001/articles/0107001.pdf>

Katsaounis T. I., 2001. *Learning from Outliers*, The Statistics Teacher Network, 58, 2-3 <http://interstat.statjournals.net/YEAR/2000/articles/0012001.pdf>

Katsaounis T. I., 2000. *Optimal small response surface designs*, Interstat, <http://interstat.statjournals.net/YEAR/2000/articles/0012001.pdf>

ARTICLES IN PROCEEDINGS

Katsaounis T. I., 2003. *Association measures of binary arrays*, ASA Proceedings of the Joint Statistical Meetings, 2088-2091, American Statistical Association, Alexandria, VA.

Katsaounis T. I., 2002. *Information matrices of irregular factorial designs*. ASA Proceedings of the Joint Statistical Meetings, 1766-1771, American Statistical Association, Alexandria, VA.

Katsaounis T. I., 2001. *On irregular factorial designs*. ASA Proceedings of the Joint Statistical Meetings, American Statistical Association, Alexandria, VA.

Katsaounis T. I., 1999. *Optimal small response surface designs*. Computing Science and Statistics: Models, Predictions and Computing. Proceedings of the 31st Symposium on the Interface, 408-412, Berk, Kenneth (ed.) and Pourahmadi, Mohsen (ed.). Interface Foundation of North America , Fairfax Station, VA.

Katsaounis T. I., 1999. *Optimal response surface designs*, Midwest SAS Users Group Conference Proceedings, 273-278, Annual Midwest SAS Users Group Conference, Columbus, Ohio.

BOOK REVIEWS

Katsaounis T. I., 2014. Advances in Theoretical and Applied Statistics, Editors: N. Torelli, F. Pesarin, A. Bar-Hen, Springer, Technometrics, 56, 2, 261-267.

Katsaounis T. I., 2011. *Mixed Effects Model for Complex Data*, by Lang Wu, Chapman & Hall/CRC, Technometrics, Vol. 53, no. 4, 440-447.

Katsaounis T. I., 2009. *Statistical and Probabilistic methods in Actuarial Science*, by Philip J. Boland, Interdisciplinary Statistics, Chapman and Hall/ CRC 2007, New York, Technometrics, 51, 101.

Katsaounis T. I., 2008. *Introductory Statistical Inference*, by Nitis Mukhopadhyay. Series Statistics: A Series of Textbooks and Monographs, Volume: 187, Chapman & Hall-CC 2006, Technometrics, 50, 89-90.

Katsaounis T. I., 2004. *Exploring Multivariate Data With the Forward Search*, by A. C. Atkinson, M. Riani, and A. Cerioli. Technometrics, 46, 483-484.

Katsaounis T. I., 2004. *Analyzing Multivariate Data*, by J. Lattin, J. D. Carroll and P. Green., Technometrics, 46, 254-255.

Katsaounis T. I., 2003. *Visualizing Statistical Models and Concepts*, by R. W. Farebrother. Technometrics, 45, 175-176.

Katsaounis T. I., 2003. *Methods of Multivariate statistics*, by M. S. Srivastava. Technometrics, 45, 100-101.

TECHNICAL REPORTS AND THESES

Katsaounis T. I., 2006. *Equivalence of symmetric factorial designs and characterization and ranking of two-level Split-lot designs*. Advisor Angela M. Dean, Department of Statistics, The Ohio State University, Columbus, Ohio.

Katsaounis T. I., 2003. *Association measures for binary codes*, Technical Report No. 702. Department of Statistics, The Ohio State University, Columbus, Ohio.

Katsaounis T. I., 1998. *Statistical Hypotheses: Basic ideas in the problem of testing a Statistical Hypothesis*. Master Thesis. Department of Mathematics, The Ohio State University, Columbus, Ohio.

PROFESSIONAL CONFERENCE PRESENTATIONS

Katsaounis, T. I., An evaluation of binary linear codes for screening experiments, with M. Aggarwal, University of Memphis, October 2014, Greensboro, N.C.

Katsaounis, T. I., 2014. Equivalence of factorial designs based on singular value decomposition. Joint Statistical Meetings of the American Statistical Association, August 2014, Boston, MA.

Katsaounis, T. I., 2012. *Equivalence of factorial designs*, Design and Analysis of Experiments conference, University of Georgia, Athens, Georgia. (*)

Katsaounis, T. I., 2012. *Equivalence of factorial designs with qualitative and quantitative factors*, Spring Research Conference: Enabling the interface between Statistics and Engineering, Harvard University, Cambridge, MA.

Katsaounis, T. I., 2012. *Equivalence of factorial designs with qualitative and quantitative factors*, International Conference on Mathematics and Statistics, University of Memphis, Memphis, TN.

Katsaounis, T.I., 2011, *A construction method for nonregular two-level split-lot designs*, Contributed poster presentation. Presented at the Joint Statistical Meetings of the American Statistical Association, August 2011, Miami, Florida.

Katsaounis, T.I., 2011, *A construction method for nonregular two-level split-lot designs*, Contributed poster presentation. Presented at the International Conference on Design of Experiments (ICODOE 2011) The University of Memphis, Memphis, TN.

Katsaounis, T. I., 2009. *Equivalence of general factorial designs*. Contributed poster. Presented at The Design and Analysis of Experiments Conference, University of Columbia, Missouri, October 2009. (*)

Katsaounis, T. I., Dean, A. M and Bingham D. 2008. *Two-level Split-lot designs based on nonregular fractional factorial designs*. Contributed talk. Presented at the 52nd Fall Technical Conference, Mesa, Arizona.

Katsaounis, T. I., 2008. *Equivalence of general factorial designs*. Contributed talk. Presented at the Joint Statistical Meetings of the American Statistical Association, August 2008, Denver, Colorado.

Katsaounis, T. I., 2008. *Implementation of the GAISE report in grades K-4*. Workshop presented at the Meeting Within a Meeting to K-4 Math and teachers, August 2008, Denver, Colorado.

Katsaounis, T. I., Dingus, C. A. and Dean, A. M., 2007. *On the geometric equivalence and non-equivalence of symmetric factorial designs*. Contributed poster presentation. Presented at Design and Analysis of Experiments DAE 2007 Conference, October 2007, University of Memphis, Memphis, Tennessee.

Wenfei Li

li.537@osu.edu

EDUCATION

Ph.D. Aeronautical and Astronautical Engineering 2010

The Ohio State University, Columbus, Ohio

Major Dynamics and Control Systems

Thesis “Fault Diagnostics Studies for Linear Uncertain Systems Using
Dynamic Threshold with Application to Propulsion Systems”

M.S. Aeronautical and Astronautical Engineering 2005

The Ohio State University, Columbus, Ohio

Major Dynamics and Control Systems

Thesis “Stability and Robustness of Compressor Surge Control by State
Feedback Linearization”

B.E. Automation Science and Electrical Engineering 2001

Beijing University of Aeronautics and Astronautics, Beijing, China

Major Automatic Control

Thesis “Water-Tank Digital Control System Using Artificial Neural
Networks”

WORK EXPERIENCE

Senior Lecturer/Program Coordinator September 2010-Present

First-Year Engineering Program, The Ohio State University-Mansfield

- Teach Fundamentals of Engineering (I & II), course series (ENGR1181.01 and ENGR1182.01).
- Supervise and mentor undergraduate students’ course projects.
- Manage lab equipment and purchase lab materials.
- Edit and manage the learning-management system Carmen (using D2L and Canvas) and the engineering-course website.
- Coordinate curriculum development and exam preparation with colleagues at OSU Columbus campus.

- Work with IT to manage and maintain the software and hardware in the engineering lab.
- Piloted the first-year engineering program at the OSU-Mansfield regional campus in 2010.

Graduate Teaching Assistant

January 2008-September 2010

Engineering Education Innovation Center, The Ohio State University

- Assisted instructors with Fundamentals of Engineering (I & II) (ENG181.01 and ENG183.01) during classes and labs, held office hours and graded assignments.

Graduate Research Assistant

September 2005-December 2007

Department of Aerospace Engineering, The Ohio State University

- Designed fault detection and isolation schemes of aircraft engines using a dynamic-threshold approach based on model uncertainty.
- Proposed and developed a dynamic/adaptive threshold method using nonlinear Kalman filters for aircraft engine sensor fault detection.
- Designed the Kalman filter estimation schemes of the nonlinear aircraft-engine model for the General Electric Transportation turbine-engine prognostics project.
- Studied the nonlinear aircraft turbine engine simulation model from the General Electric Transportation turbine engine prognostics project.

Teaching Assistant

Autumn/Winter Quarters 2005, 2006, 2007

Department of Aerospace Engineering, The Ohio State University

- Flight Vehicle Dynamics (Aero520)
- Linear System Engineering (Aero521)
- Orbital Mechanics (Aero626)
- One-Dimensional Gas Dynamics (Aero530).

Graduate Fellow

July 2003-September 2005

Department of Aerospace Engineering, The Ohio State University

- Worked on stability and robustness analysis and control design for the Moore-Greitzer three-state axial-compressor model.
- Designed a low-order controller using the method of component-cost analysis for the high-order cavity-flow model developed by the OSU Gas Turbine Lab.
- Researched topics on principal component analysis and component cost analysis.

Assistant Control Engineer

July 2001-December 2002

Beijing RuiSai Measurement and Control Company, Beijing, China

- Worked on a team to design and build a flight-simulator test table.

PRESENTATION

- Wenfei Li, “Dynamic Threshold Method Based Aircraft Engine Sensor Fault Diagnosis,” 2008 ASME Dynamic System and Control Conference, October 2008, Ann Arbor, MI.

PUBLICATIONS

- Wenfei Li, Rama Yedavalli, “Aircraft Turbofan Engine Sensor Fault Diagnosis Using Dynamic Threshold Method,” Journal of Dynamic Systems, Measurement and Control. Under preparation.
- Wenfei Li, Rama Yedavalli, “Dynamic Threshold Method Based Aircraft Engine Sensor Fault Diagnosis,” 2008 ASME Dynamic System and Control Conference, October 2008, Ann Arbor, MI.
- Rama Yedavalli, Wenfei Li, “Aircraft Engine Fault Detection Using Dynamic/Adaptive Threshold Approach,” GT2007-28180, ASME Turbo Expo 2007: Power for Land, Sea and Air, May 2007, Montreal, Canada.

PROFESSIONAL SERVICE

- Paper reviewer for IEEE Conference on Decision and Control; American Control Conference; Journal of Dynamic Systems, Measurement, and Control.
- Workshop planning committee for OSU–Mansfield faculty teaching development.

AWARDS

- OSU-Mansfield Faculty Service Award.
- Dayton Area Graduate Studies Institute (DAGSI) Fellowship from OSU.
- Outstanding Student Award from Beijing University of Aeronautics and Astronautics.
- Student Leadership Award from Beijing University of Aeronautics and Astronautics.

SKILLS

Software Tools: Matlab/Simulink, SolidWorks, Autodesk Inventor, LanSchool,
Microsoft Office, Maple, Mathematica, TeXnicCenter

Curriculum Vitae

WILLIAM O. PUTIKKA

Address: The Ohio State University Phone: 614-292-3882
1760 University Drive FAX: 419-755-4367
Mansfield, OH 44906

Email: `putikka.1@osu.edu`

Education

Ph. D. (Physics), 1988: University of Wisconsin, Madison, Wisconsin, USA

Dissertation: Heavy Fermion Superconductivity in UPt_3 , thesis advisor: R. J. Joynt.

Bachelor of Physics with High Distinction, 1981: Institute of Technology, University of Minnesota, Minneapolis, Minnesota, USA.

Employment

Professor, Physics Department, The Ohio State University, Mansfield, Ohio, USA 2008-present.

Associate Professor, Physics Department, The Ohio State University, Mansfield, Ohio, USA, 2001-2008.

Assistant Professor, Physics Department, The Ohio State University, Mansfield, Ohio, USA, 1996-2001.

Research Assistant Professor, Physics Department, University of Cincinnati, Cincinnati, Ohio, USA, 1995-1996.

Postdoctoral Research Associate, National High Magnetic Field Laboratory, Florida State University, Tallahassee, Florida, USA, 1992-1995.

Postdoctoral Research Associate, Institut für Theoretische Physik, ETH, Zürich, Switzerland, 1989-1992.

Postdoctoral Research Associate, Physics Department, University of Florida, Gainesville, Florida, USA, 1988-1989.

Teaching Assistant; Research Assistant, Physics Department, University of Wisconsin, Madison, Wisconsin, USA, 1982-1988.

Current Research Interests

Two dimensional strongly correlated electrons; High temperature superconductors; Heavy fermion superconductors; Phenomenology of unconventional superconductors; High temperature expansions for models of strongly correlated electrons; Spin lifetimes in semiconductors; Spintronics; Quantum Computers.

Past External Funding

National Science Foundation DMR-0105659, Sept. 2001 - Aug. 2005, \$180,000

Project Title: “Strong Coupling Expansions for Models of Strongly Correlated Electrons”

National Science Foundation ECS-0523918, Sept. 2005 - Aug. 2009, \$150,000

Project Title: “Collaborative Research: Theory of Spin Lifetimes in Semiconductors”, in collaboration with R. Joynt (U. Wisconsin) who also received \$150,000 for a total project budget of \$300,000.

Teaching Experience

Professor for physics and astronomy courses, The Ohio State University, Mansfield (1996-present).

At Ohio State I teach algebra level and calculus level introductory physics courses and an introductory astronomy course for humanities majors.

Professor for introductory physics courses, University of Cincinnati (1995-1996).

At the University of Cincinnati I taught algebra level and calculus level introductory physics courses.

Proseminar Assistant in Solid State Physics, ETH (1989-1992).

Teaching Assistant, University of Wisconsin, Laboratory sections for a junior-level electronics course, under the supervision of Prof. P. A. Quin (1986-1988).

Teaching Assistant, University of Wisconsin, Recitation and Laboratory sections for an introductory physics course, under the supervision of Prof. M. B. Webb (1982-1983).

Honors

Invited talk, “Enhanced d-wave Superconducting Fluctuations in the 2D t - J Model”, APS March meeting, 13-17 March, 2006.

KITP Scholar, Kavli Institute for Theoretical Physics at the University of California at Santa Barbara, 2005-2007.

Award for Excellence in Scholarship, Ohio State University Mansfield Campus, 2002.

ITP Scholar, Institute for Theoretical Physics at the University of California at Santa Barbara, 1999-2001

Invited talk, “High Temperature Series for the t - J Model in Two Dimensions,” APS March meeting, 21-25 March, 1994.

North Atlantic Treaty Organization Postdoctoral Fellowship, National Science Foundation, on tenure at the ETH - Zürich, 1989-1990.

Wisconsin Alumni Research Foundation Graduate Fellowship, University of Wisconsin-Madison, 1981-1982

Alworth Memorial Foundation Undergraduate Scholarship, on tenure at St. John’s University and the University of Minnesota, 1977-1981.

Publications

1. *Optical Linewidths and Photon-Echo Decays of Impurities in Glasses*, W. O. Putikka and D. L. Huber, Phys. Rev. B **36**, 3436 (1987).
2. *Probabilistic Derivation of Parton Splitting Functions*, Loyal Durand and William Putikka, Phys. Rev. D **36**, 2840 (1987).
3. *Homogeneous Linewidths and Photon-Echo Decay Rates of Rare Earth and Transition Metal Impurities in Glasses*, D. L. Huber and W. O. Putikka, J. of Lumin. **40&41**, 567 (1988).
4. *Stability of Anisotropic Superconducting Phases in UPt₃*, W. Putikka and Robert Joynt, Phys. Rev. B **37**, 2372 (1988)(RC).
5. *Next-to-Leading Logarithm QCD Corrections for $q\bar{q} \rightarrow ZZ, W^+W^-, W^\pm Z$ Subprocesses*, V. Barger, J. L. Lopez and W. Putikka, Int. J. of Mod. Phys. A **3**, 2181 (1988).
6. *Theoretical Determination of the Superconducting Phase of UPt₃*, W. O. Putikka and Robert Joynt, Phys. Rev. B **39**, 701 (1989).
7. *Electromagnetic Absorption in Anisotropic Superconductors*, P. J. Hirschfeld, P. Wölfle, J. A. Sauls, D. Einzel and W. O. Putikka, Phys. Rev. B **40**, 6695 (1989).
8. *Unusual Low-Frequency Electromagnetic Response in Anisotropic Superconductors: Application to UPt₃*, W. O. Putikka, P. J. Hirschfeld and P. Wölfle, Phys. Rev. B **41**, 7285 (1990)(RC).
9. *Electromagnetic Response in the E_{1g} Model State for the Heavy Fermion Superconductor UPt₃*, W. O. Putikka, P. J. Hirschfeld and P. Wölfle, Physica B **165&166**, 371 (1990).
10. *Phase Diagram of the t-J Model*, M. Luchini, M. Ogata, W. Putikka and T. M. Rice, Physica C **185-189**, 141 (1991).
11. *Aspects of the Phase Diagram of the Two-Dimensional t-J Model*, W. O. Putikka, M. U. Luchini and T. M. Rice, Phys. Rev. Lett. **68**, 538 (1992).
12. *Electromagnetic Skin Depth of Unconventional Superconductors*, P. J. Hirschfeld, W. O. Putikka, P. Wölfle and Y. Campbell, J. Low Temp. Phys. **88**, 395 (1992).
13. *Electromagnetic Power Absorption by Collective Modes in Unconventional Superconductors*, P. J. Hirschfeld, W. O. Putikka and P. Wölfle, Phys. Rev. Lett. **69**, 1447 (1992).
14. *Ferromagnetism in the Two-Dimensional t-J Model*, W. O. Putikka, M. U. Luchini and M. Ogata, Phys. Rev. Lett. **69**, 2288 (1992).
15. *Thermodynamics of the Gauge Field Theories of the t-J Model*, R. Hlubina, W. O. Putikka, T. M. Rice and D. V. Khveshchenko, Phys. Rev. B **46**, 11224 (1992)(RC).
16. *Microwave Conductivity of d-wave Superconductors*, P. J. Hirschfeld, W. O. Putikka and D. J. Scalapino, Phys. Rev. Lett. **71**, 3705 (1993).
17. *Finite-Temperature Power Absorption by Collective Modes in Unconventional Superconductors*, P. J. Hirschfeld and W. O. Putikka, Physica B **194-196**, 1517 (1994).
18. *Microwave Response of d_{x²-y²} Superconductors*, W. O. Putikka and P. J. Hirschfeld, Physica B **194-196**, 2021 (1994).
19. *Indications of Spin-Charge Separation in the Two-Dimensional t-J Model*, W. O. Putikka, R. L. Glenister, R. P. Singh and H. Tsunetsugu, Phys. Rev. Lett. **73**, 170 (1994).
20. *d-wave Model for Microwave Response of High-T_c Superconductors*, P. J. Hirschfeld, W. O. Putikka and D. J. Scalapino, Phys. Rev. B **50**, 10250 (1994).
21. *Transport Properties of Extended-s State Superconductors*, L. S. Borkowski, P. J. Hirschfeld and W. O. Putikka, Phys. Rev. B **52**, 3856 (1995)(RC).

22. *Thermal Conductivity of Zn, Pr and Tb doped YBCO Single Crystals: Theory and Experiment*, P. F. Henning, G. Cao, J. E. Crow, W. O. Putikka and P. J. Hirschfeld, *J. Supercond.* **8**, 453 (1995).
23. *Magnetic Frustration and Spin-Charge Separation in 2D Strongly Correlated Electron Systems*, W. O. Putikka, *J. Phys. Chem. Solids* **56**, 1747 (1995).
24. *Correlation Functions for the 2D t -J Model*, W. O. Putikka in *Physical Phenomena at High Magnetic Fields II*, ed. by Z. Fisk, L. Gor'kov, D. Meltzer and R. Schrieffer (World Scientific, Singapore, 1996), p. 567.
25. *Distinguishing "Extended-S" and D-Symmetry Superconductors*, W. O. Putikka, L. S. Borkowski and P. J. Hirschfeld in *Physical Phenomena at High Magnetic Fields II*, ed. by Z. Fisk, L. Gor'kov, D. Meltzer and R. Schrieffer (World Scientific, Singapore, 1996), p. 487.
26. *Entropy of 2D Strongly Correlated Electrons*, W. O. Putikka in *Proceedings of the 10th Anniversary HTS Workshop*, ed. by B. Batlogg, C. W. Chu, W. K. Chu, D. U. Gubser and K. A. Müller (World Scientific, Singapore, 1996), p. 527.
27. *Theory of Thermal Conductivity in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$* , P. J. Hirschfeld and W. O. Putikka, *Phys. Rev. Lett.* **77**, 3909 (1996).
28. *Violation of Luttinger's Theorem in the Two-Dimensional t -J Model*, W. O. Putikka, M. U. Luchini and R. P. Singh, *Phys. Rev. Lett.* **81**, 2966 (1998).
29. *Does the Two-Dimensional t -J Model have Hole Pockets?*, W. O. Putikka, M. U. Luchini and R. P. Singh, *J. Phys. Chem. Solids* **59**, 1858 (1998).
30. *Limits on Phase Separation for Two-Dimensional Strongly Correlated Electrons*, W. O. Putikka and M. U. Luchini, *Phys. Rev. B* **62**, 1684 (2000).
31. *Low Energy Spin and Charge Excitations in the Two-Dimensional t -J Model: Comparison with Fermi and Bose Systems*, W. O. Putikka, M. U. Luchini and R. P. Singh, submitted to *Physical Review B*.
32. *Suppression of Hole Density and Hole-Hole Correlations by Zn Impurities in High- T_c Superconductors*, *Physica B* **312-313**, 79 (2002).
33. *Theory of Optical Orientation in n -type Semiconductors*, W. O. Putikka and R. Joynt, *Phys. Rev. B* **70**, 113201 (2004).
34. *Broad Peak in the $d_{x^2-y^2}$ Superconducting Correlation Length as a Function of Hole Concentration in the Two-Dimensional t -J Model*, W. O. Putikka and M. U. Luchini, *Phys. Rev. Lett.* **96**, 247001 (2006).
35. *Theory of Electron Spin Relaxation in ZnO*, N. J. Harmon, W. O. Putikka and R. Joynt, *Phys. Rev. B* **79**, 115204 (2009).
36. *Theory of Electron Spin Relaxation in n -doped Quantum Wells*, N. J. Harmon, W. O. Putikka and R. Joynt, *Phys. Rev. B* **81**, 085320 (2010).
37. *Prediction of Extremely Long Mobile Electron Spin Lifetimes at Room Temperature in Wurtzite Semiconductor Quantum Wells*, N. J. Harmon, W. O. Putikka and R. Joynt, *Applied Physics Letters* **98**, 073108 (2011).
38. *Entropy and Thermopower in the 2D t -J Model*, *Journal of Physics: Conference Series* **640**, 012046 (2015).

Kelly A. Whitney

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P.O. Box 30001, MSC 3E
Las Cruces, NM 88003
kwhit@nmsu.edu | (937) 414-2796

EDUCATION

Ph.D., Rhetoric and Professional Communication, Spring 2018 (expected)
New Mexico State University

Dissertation: *Prevention, In(ter)vention, Communication: Medical Processes and Making Bodies that Matter*

Committee: Kellie Sharp-Hoskins (chair), Patti Wojahn, Anthony Stagliano, Stephanie Lynch

Graduate Certificate, Postsecondary Literacy Instruction, 2012
University of Cincinnati

M.A., English, 2009
University of Dayton

B.A., English, 2007
The Ohio State University

PUBLICATIONS

Refereed Journal Articles and Book Chapters

Whitney, Kelly A. "Studying and Writing Meeting Minutes: Lessons on the Rhetorical and Epistemological Work of Technical and Professional Writing." *Prompt: A Journal of Academic Writing Assignments* [Revise & Resubmit]

Whitney, Kelly A. "Reading Readers' Affective Moments." *The Writing Campus* [Revise & Resubmit]

Whitney, Kelly A. "Making Women's Bodies Matter: The Well-Woman Visit as a Site of Normalization." *Woman, Patient, Advocate: 21st Century Women's Health Rhetorics* [Under Review]

Teston, Christa, Kristin Bivens, Laura Gonzales, and Kelly A. Whitney. "Surveying Precarious Publics." [Article-length manuscript in progress.]

Whitney, Kelly A. "Technology, Haptics, and Coming to Know Medical Bodies." [Article-length manuscript in progress for submission to *Technical Communication Quarterly*.]

Scholarly Reviews

Whitney, Kelly A. "Making Space to Engage Difference in the Classroom." Rev. of *Toward a New Rhetoric of Difference* by Stephanie L. Kerschbaum. *WPA: Writing Program Administration*, vol. 40, no. 3, 2017, pp. 117-21.

Whitney, Kelly A. Rev. of *Writing Childbirth: Women's Rhetorical Agency in Labor and Online* by Kim Hensley Owens. *Present Tense: A Journal of Rhetoric in Society*, vol. 6, no. 1, 2016.

Whitney, Kelly A. Rev. of *Composition Studies through a Feminist Lens* by Shari J. Stenberg. *Peitho*, vol. 19, no. 1, 2016.

Non-Refereed Publications

Whitney, Kelly A. "'Imagine That You Enter a Parlor': Researched Writing as Conversation." *Paideia 16: Research, Writing, and Argument in English 111 at New Mexico State University*, edited by Mais T. Al-Khateeb, Felicita Arzu Carmicheal, Kefaya Diab, Dylan Retzinger, Kellie Sharp-Hoskins, and Kelly A. Whitney. Hayden-McNeil, 2016. [Custom course textbook]

PRESENTATIONS

International Conferences

"Making (the) Bodies (that) Matter: Race, Class, and Preventive Gynecologic Screenings." Feminisms and Rhetorics Conference. Dayton, Ohio, 2017.

"'This Might Be a Bad Thing': Civic Responsibility and Accountability in Student Writing." International Sun Conference on Teaching and Learning. El Paso, Texas, 2015.

"Resituating Lived Experience through the Politics of Emergence in Transnational Feminist Rhetorics." Feminisms and Rhetorics Conference. Phoenix, Arizona, 2015.

National Conferences

"Touching, Impressing, Knowing: On the Generative Work of Haptics in Clinical Encounters." Rhetoric Society of America Conference, Minneapolis, Minnesota, 2018. [Forthcoming]

"[Technical] Writing about [Technical] Writing: Building Students' Literacy as Makers and Consumers of Technical Writing." Modern Language Association. New York, New York, 2018. [Forthcoming]

"Technology, Haptics, and Coming to Know Medical Bodies." Symposium for the Rhetoric of Health and Medicine. Cincinnati, Ohio, 2017.

"Examining Assumptions about Bodies: Revising for Ethical and Inclusive Writing." Workshop: Engaging Disability and Accessibility in Class Assignments: Integrating Disability Studies in the Fabric of Comp and Technical Communication Curriculum. Conference on College Composition and Communication. Portland, Oregon, 2017.

"Asking Questions, Constructing Methods: Rhetorical Criticism for Non/Rhetoric Majors." Conference on Rhetoric and Writing Studies Undergraduate Programs. El Paso, Texas, 2016.

"'Terministic Framing' and Inventing Arguments: The Rhetorical Work and Boundaries of Citations in Medical Recommendations." Rhetoric Society of America Conference. Atlanta, Georgia, 2016.

"Readers' Affective Moments as Sites for Critical Inquiry." Reading Workshop: Pedagogies, Processes, Purposes, Practices. Conference on College Composition and Communication. Houston, Texas, 2016.

“The Writing Teacher as Reading Teacher: Reappropriating Reading Instruction in Composition.”
Conference on College Composition and Communication. Tampa, Florida, 2015.

Regional Conferences

“‘Your Cakeday is Not Your Birthday’: Discourse in the Imgur Community.” Southwest Texas
Popular/American Culture Association Conference. Albuquerque, New Mexico, 2014.

“Disney, Rap, and Literacy: Using Popular Culture to Teach Composition and Reading.” Two-Year
College Association Southwest Conference. Austin, Texas, 2013.

“Adult (Il)lteracy in the Two-Year College: The Evolving Role of English Faculty.” College English
Association of Ohio. Columbus, Ohio, 2010.

“Problematic Pictures: The Heterosexual Trap Within Children’s Literature.” Southwest Pop Culture
Association Conference. Albuquerque, New Mexico, 2009.

“Passing on the Torch: The Importance of Veteran and Novice Tutor Interaction in the Writing Center.”
Northeast Writing Center Association Conference. Storrs, Connecticut, 2007.

College/University Presentations & Workshops

“Conducting Research,” English 111: Rhetoric & Composition, New Mexico State University, October
2016.

Alumni Panel, The Ohio State University at Newark, November 2016.

“Paying Attention to Readers’ Affective Moments,” New Mexico State University Writing Program,
September 2016.

“Introducing *Paideia 16*,” New Mexico State University Writing Program, August 2016. [with Mais T.
Al-Khateeb, Felicity Arzu Carmicheal, Kefaya Diab, Dylan Retzinger, and Kellie Sharp-Hoskins]

“Inventing Topics and Preparing for the Rhetoric Society of America Conference,” New Mexico State
University English Department, April 2016.

“Analyzing Written Feedback for Consistency, Clarity, and Consequence,” New Mexico State University
Writing Program, April 2016.

“Assignment Making as a Process: Assignments as Ecosystems,” New Mexico State University Teaching
Academy, February 2016.

“Return to Rhetoric: Understanding the ‘Rhetoric’ of ‘Rhetoric and Composition,’” New Mexico State
University Writing Program, January 2016.

“Connecting Reading and Research in 200-Level Courses,” New Mexico State University Writing
Program, October 2015.

“Incorporating Research into English 203 & 218,” New Mexico State University Writing Program,
August 2015.

“(Dis)Abling Writing: Towards an Accommodating Classroom,” New Mexico State University Writing
Program, August 2015.

“Conceptualizing Revision in Writing Courses,” New Mexico State University Writing Program, April
2015.

“Situating the Documented Argument in English 111,” New Mexico State University Writing Program, February 2015.

“Using Textbooks in English 111,” New Mexico State University Writing Program, January 2015.

“Preparing for Your Next Semester Through Reflection,” New Mexico State University Writing Program, November 2014.

“Norming Session,” New Mexico State University Writing Program, October 2014.

“Critical Reading in the Writing Class,” New Mexico State University Writing Program, September 2014.

“Portfolios in Writing Classes,” New Mexico State University Writing Program, August 2015.

“Following the Rainbow: A Look into the Events that Sparked the Stonewall Riots.” The Ohio State University at Newark History Conference. Newark, Ohio, 2007.

AWARDS, FELLOWSHIPS, AND GRANTS

Research Awards

Barbara Heifferon Graduate Student Fellowship, Symposium for the Rhetoric of Health and Medicine, Sep. 2017.

Research and Creative Activities Award, English Department, New Mexico State University, Dec. 2016, \$200.

Office of Assessment Quality Initiative Grant, New Mexico State University, Aug. 2015, \$2,483.

Summer Research Fellowship Award, University of Dayton Graduate School, May 2008, \$1,000.

Teaching Awards

Stuart Brown Scholarship for Excellence in Teaching and Writing, English Department, New Mexico State University, May 2017, \$1000.

Instructor of the Month, Miami-Jacobs College, 2011.

Golden Apple Teaching Award Winner, Miami-Jacobs College, 2011.

Faculty Award of Excellence in Teaching, Southwestern Ohio Council for Higher Education, 2010.

Golden Apple Teaching Award Nominee, Miami-Jacobs College, 2010.

Golden Apple Teaching Award Nominee, Miami-Jacobs College, 2009.

Additional Competitive Travel Awards and Fellowships

Graduate Student Travel Grant, College of Arts & Sciences, New Mexico State University, Oct. 2017, \$500.

Graduate Student Travel Grant, English Department, New Mexico State University, May 2017, \$500.

Graduate Student Endowment Fund, English Department, New Mexico State University, May 2017, \$775.

Vera Newman Award, English Department, New Mexico State University, Dec. 2016, \$750.

Graduate Student Travel Grant, English Department, New Mexico State University, May 2016, \$500.

Graduate Student Endowment Fund, English Department, New Mexico State University, May 2016, \$100.

Graduate Student Travel Grant, English Department, New Mexico State University, May 2015, \$500.

Graduate Student Travel Grant, College of Arts & Sciences, New Mexico State University, Sep. 2013, \$500.

Research and Creative Activities Award, English Department, New Mexico State University, Dec. 2013, \$850.

Travel Research Grant, The Ohio State University at Newark, March 2007, \$500.

TEACHING

New Mexico State University, Graduate Teaching Assistant, Aug. 2013 – present

Instructor of Record:

English 318: Advanced Technical and Professional Communication [2 sections online]

English 301: Theory and Criticism: Rhetoric and Culture [1 section]

English 218: Technical and Scientific Communication [1 section online]

English 203: Business and Professional Communication [2 sections face-to-face, 1 section online]

English 111: Rhetoric and Composition [1 section]

English 111 CAMP: Rhetoric and Composition for College Assistance Migrant Program student learning community [1 section]

Teaching Assistant:

English 571: Composition Pedagogy Practicum [1 section]

English 497/597: Internship in Technical and Professional Communication [1 section]

Baylor University, Adjunct Lecturer, Aug. 2016 – present

Courses taught:

English 3303: Persuasive and Argumentative Writing [1 section]

English 3300: Technical Writing [5 sections]

English 1304: Thinking, Writing, and Research [1 section]

English 1302: Thinking and Writing [2 sections]

U.S. Sergeants Major Academy, Fort Bliss Army Post, Writing Instructor, May 2014 – June 2014

Courses taught:

Writing Preparation Course: Introduction to academic writing for international students [2 sections]

Miami-Jacobs College, Associate English Instructor, June 2007 – Dec. 2013

Courses taught:

English 210/Communications 102: Oral Communications [32 sections]

Business 205: Business Communications [1 section]

English 102: English Composition II [7 sections]

English 101/Communications 101: English Composition I [29 sections]

English 001/Communications 001: Developmental Writing [12 sections]

General Studies 201: Career Management [4 sections]

General Studies 101/PS 104: Professional Development [13 sections]

SWTS: College Entrance Review [8 sections]

University of Dayton, Graduate Teaching Assistant, Aug. 2007 – May 2009

Instructor of Record:

English 102: First-Year Composition II [4 sections]

English 101: First-Year Composition I [4 sections]

ADMINISTRATIVE EXPERIENCE

Writing Across the Curriculum Faculty Workshop Co-Director, New Mexico State University, May 2014 – present

Writing Program Coordinator, New Mexico State University, Aug. 2014 – Dec. 2016

Graduate Teaching Assistant Seminar in Writing, Teaching, and Learning in the Disciplines Developer & Facilitator, New Mexico State University, Aug. 2015 – Dec. 2015

Online Education Program Advisor, Miami-Jacobs College, Aug. 2011 – Dec. 2012

SERVICE

Professional

Copy Editor, *Community Literacy Journal*, January 2017 – present

Proposal Reviewer, International Writing Across the Curriculum Conference, 2016

Institutional

Writing Center & Online Writing Center Consultant, New Mexico State University Writing Center, Aug. 2013 – present.

President, RSA @ NMSU, Rhetoric Society of America Graduate Student Chapter, New Mexico State University, Aug. 2016 – Aug. 2017

Mentor, Peer Observation and Discussion Program, Aug. 2014 – May 2017

Online Writing Center YouTube Content Creator, New Mexico State University, 2015
Videos published:

“Shaping Your Topic and Narrowing the Scope of Your Writing”

“Invention Strategies Beyond Freewriting, Clustering, and Listing”

“Thinking About Writing Style Rhetorically”

“Reading and Annotating Difficult Texts”

“Writing a Professional Email”

“Using Microsoft Word’s Track Changes and Insert Comment Functions to Generate Ideas for Revision”

Peer Writing Consultant, The Ohio State University at Newark Writing Lab, Aug. 2005 – June 2007

PROFESSIONAL DEVELOPMENT

“Strategies for Teaching Online.” Online Course Improvement Program, New Mexico State University, August 2017.

“ATTW Graduate Student Career Workshop.” Association of Teachers of Technical Writing, Portland, Oregon, March 2017.

“Creating an Effective Writing Group.” Baylor Academy for Teaching and Learning, November 2016.

“Helping Students Learn Disciplinary Ways of Thinking: A Model to Decode the Disciplines.” Baylor Academy for Teaching and Learning, October 2016.

“Greater Than the Human Brain: Harnessing the Power of Digital Scholarship for Teaching and Learning.” Baylor Academy for Teaching and Learning, September 2016.

“Success for All Students: Effective Use of Learning Accommodations in the College Classroom.” Baylor Academy for Teaching & Learning, September 2016.

“Preconference Workshop.” Association for the Rhetoric of Science, Technology & Medicine. Rhetoric Society of America, Atlanta, Georgia, May 2016.

“Accessible Videos.” Online Course Improvement Plan, New Mexico State University, April 2016.

“Prepping to Teach Online.” Writing Program, New Mexico State University, April 2016.

“Diversity in the Classroom and Beyond: Embracing Social Differences in Educational Practice.” Teaching Academy, New Mexico State University, February 2016.

“Document Design for Teachers: Issues of Usability and Accessibility.” Writing Program, New Mexico State University, February 2016.

“*Writing Across Borders* Film and Discussion.” Teaching Academy, New Mexico State University, April 2014.

Study abroad in Paris, France, Summer 2008.

PROFESSIONAL MEMBERSHIPS

Association for the Rhetoric of Science, Technology, and Medicine

Association for Teachers of Technical Writing
Coalition of Feminist Scholars in the History of Rhetoric and Composition
Modern Language Association
National Council of Teachers of English
Rhetoric Society of America

REFERENCES

Dr. Kellie Sharp-Hoskins

Assistant Professor of English
Department of English
New Mexico State University
P.O. Box 30001, MSC 3E
Las Cruces, NM 88003
kesharp@nmsu.edu
(575) 646-3931

Dr. Anthony Stagliano

Assistant Professor of English
Department of English
New Mexico State University
P.O. Box 30001, MSC 3E
Las Cruces, NM 88003
staglian@nmsu.edu
(575) 646-2468

Dr. Patti Wojahn

Professor of English
Department of English
New Mexico State University
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Las Cruces, NM 88003
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(575) 646-5712

Dr. Chris Burnham

Regents Professor
Department of English
New Mexico State University
P.O. Box 30001, MSC 3E
Las Cruces, NM 88003
cburnham3750@gmail.com
575-646-7993

Last updated: Oct. 8, 2017



December 12th, 2018

Dr. Carolyn Sommerich, Chair, College Committee on Academic Affairs
Department of Integrated Systems Engineering
The Ohio State University
276 Baker Systems
1971 Neil Avenue
Columbus, OH 43210

Dear Dr. Sommerich:

I am writing to express my support of the proposed Bachelor of Science in Engineering Technology (BSET). This new degree program will offer students an integrated understanding of foundational aspects of manufacturing engineering technology and management. As the proposal states, the BSET program “reflects the mission of the College of Engineering to develop education and outreach programs that enhance economic competitiveness regionally, nationally and globally.” I concur with the BSET proposal and support its approval.

Sincerely,

DocuSigned by:


D6672056688846A...
Hesham El Gamal
Professor and Chair
Electrical and Computer Engineering Department
The Ohio State University



January 23, 2019

Dr. Carolyn Sommerich
Chair, College Committee on Academic Affairs
Department of Integrated Systems Engineering
The Ohio State University
276 Baker Systems
1971 Neil Avenue
Columbus, OH 43210

Dear Dr. Sommerich:

I am writing to express my support of the proposed Bachelor of Science in Engineering Technology (BSET). This new degree program will offer students an integrated understanding of foundational aspects of manufacturing engineering technology and management. As the proposal states, the BSET program “reflects the mission of the College of Engineering to develop education and outreach programs that enhance economic competitiveness regionally, nationally and globally.” I concur with the BSET proposal and support its approval.

Sincerely,

Lisa M. Abrams, PhD, PE
Interim Department Chair



December 14, 2018

Dr. Carolyn Sommerich, Chair, College Committee on Academic Affairs
Department of Integrated Systems Engineering
The Ohio State University
276 Baker Systems
1971 Neil Avenue
Columbus, OH 43210

Dear Dr. Sommerich:

I am writing to express my support of the proposed Bachelor of Science in Engineering Technology (BSET). This new degree program will offer students an integrated understanding of foundational aspects of manufacturing engineering technology and management. As the proposal states, the BSET program "reflects the mission of the College of Engineering to develop education and outreach programs that enhance economic competitiveness regionally, nationally and globally." I concur with the BSET proposal and support its approval.

Sincerely,

Farhang Pourboghraat
Professor and Chair

Tel: (614) 292-3124

E-mail: pourboghraat.2@osu.edu



14 January 2019

Dr. Carolyn Sommerich
Chair, College Committee on Academic Affairs
The Ohio State University

Re: MAE Concurrence on proposed BSET program

Dear Carolyn,

The Department of Mechanical & Aerospace Engineering is pleased to give its concurrence to the proposed Bachelor of Science in Engineering Technology degree program. We believe this program will fill an important (and overlooked) gap in engineering education in Ohio, and are confident that the graduates of this program will provide much needed engineering technologists for the state's industrial base.

Further, we are in agreement that the faculty hired to teach courses in "Mechanical Engineering" for this program will be hired and promoted under the purview of the MAE department, while the cost for these faculty will be borne by the regional campus at which they reside.

Best regards,

Vish Subramaniam
Professor and Chair



January 23, 2019

Dr. Carolyn Sommerich, Chair, College Committee on Academic Affairs
Department of Integrated Systems Engineering
The Ohio State University
276 Baker Systems
1971 Neil Avenue
Columbus, OH 43210

Dear Dr. Sommerich:

I understand that the proposed Bachelor of Science in Engineering Technology (BSET) has passed review by the College Committee on Academic Affairs. As the proposal progresses to the CAA, I thought it would be helpful to express support on behalf of the Department of Materials Science and Engineering. I have conferred with Profs. Michael Sumption and David Phillips, chairs of the undergraduate studies committees for the Materials Science and Engineering Program and Welding Engineering Program, respectively. There is strong support for this new degree program; it will offer students an integrated understanding of foundational aspects of manufacturing engineering technology and management—including a component on engineering materials in the context of manufacturing. The BSET program indeed is compatible with the department mission to “create, transfer, and preserve knowledge through impactful research, dynamic teaching, and the effective training of our future colleagues in materials science and welding engineering.” I concur with the BSET proposal and support its approval.

Sincerely,

Peter M Anderson
Professor and Chair
Department of Materials Science and Engineering | mse.osu.edu
614-292-6255 | anderson.1@osu.edu | mse.osu.edu/people/anderson.1

c: Profs. Michael Sumption, David Phillips, and Glenn Daehn

Fiscal Unit/Academic Org	Engineering Administration - D1400
Administering College/Academic Group	Engineering
Co-administering College/Academic Group	Engineering
Semester Conversion Designation	New Program/Plan
Proposed Program/Plan Name	Bachelor of Science Degree in Engineering Technology
Type of Program/Plan	Undergraduate bachelors degree program or major
Program/Plan Code Abbreviation	ENGRTEC
Proposed Degree Title	Bachelor of Science in Engineering Technology

Credit Hour Explanation

Program credit hour requirements		A) Number of credit hours in current program (Quarter credit hours)	B) Calculated result for 2/3rds of current (Semester credit hours)	C) Number of credit hours required for proposed program (Semester credit hours)	D) Change in credit hours
Total minimum credit hours required for completion of program				122	
Required credit hours offered by the unit	Minimum			94	
	Maximum			95	
Required credit hours offered outside of the unit	Minimum			27	
	Maximum			27	
Required prerequisite credit hours not included above	Minimum				
	Maximum				

Program Learning Goals

Note: these are required for all undergraduate degree programs and majors now, and will be required for all graduate and professional degree programs in 2012. Nonetheless, all programs are encouraged to complete these now.

Program Learning Goals

- **Systems Thinking & Problem Solving:** The successful student will be able to effectively solve problems by applying the appropriate engineering technologies, tools and techniques within systems of equipment, controls and people.
- **Professional Skills/Communication:** A successful student will be able to demonstrate, appreciate, and master interpersonal communications skills in the modern workplace.
- **Business:** A successful student will be able to understand business terminology, analyze values of alternatives, and communicate the business, societal and global impacts effectively.
- **Continuous Improvement:** The successful student will be able to optimize processes and systems with respect to quality, timeliness, and continuous improvement.

Assessment

Assessment plan includes student learning goals, how those goals are evaluated, and how the information collected is used to improve student learning. An assessment plan is required for undergraduate majors and degrees. Graduate and professional degree programs are encouraged to complete this now, but will not be required to do so until 2012.

Is this a degree program (undergraduate, graduate, or professional) or major proposal? Yes

Does the degree program or major have an assessment plan on file with the university Office of Academic Affairs? No

DIRECT MEASURES (means of assessment that measure performance directly, are authentic and minimize mitigating or intervening factors)

Classroom assignments

- Embedded testing (i.e. specific questions in homework or exams that allow faculty to assess students' attainments of a specific learning goal)
- Other classroom assessment methods (e.g., writing assignments, oral presentations, oral exams)

Evaluation of a body of work produced by the student

- Practicum, internship or research evaluation of student work
- Capstone course reports, papers, or presentations

INDIRECT MEASURES (means of assessment that are related to direct measures but are steps removed from those measures)

Surveys and Interviews

- Student survey
- Alumni survey
- Employer feedback or survey
- Student evaluation of instruction
- Student interviews or focus groups

Additional types of indirect evidence

- Job or post-baccalaureate education placement
- External program review
- Curriculum or syllabus review
- Grade review

USE OF DATA (how the program uses or will use the evaluation data to make evidence-based improvements to the program periodically)

- Meet with students directly to discuss their performance
- Analyze and discuss trends with the unit's faculty
- Analyze and report to college/school
- Analyze and report to accrediting organization
- Make improvements in curricular requirements (e.g., add, subtract courses)
- Make improvements in course content
- Make improvements in course delivery and learning activities within courses
- Make improvements in learning facilities, laboratories, and/or equipment
- Periodically confirm that current curriculum and courses are facilitating student attainment of program goals
- Benchmark against best programs in the field

Program Specializations/Sub-Plans

If you do not specify a program specialization/sub-plan it will be assumed you are submitting this program for all program specializations/sub-plans.

Pre-Major

Does this Program have a Pre-Major? No

Attachments

- COE__Letter_of_support_BSET.pdf: Letter
(Letter from the College to OAA. Owner: Quinzon-Bonello,Rosario)
- BSET_Proposal_2.4.19_FINAL.pdf: Proposal
(Program Proposal. Owner: Quinzon-Bonello,Rosario)
- COE - Proposal to establish a Bachelor of Science Degree in Engineering Technology.pdf: Proposal - Revised
(Program Proposal. Owner: Reed,Kathryn Marie)

Comments**Workflow Information**

Status	User(s)	Date/Time	Step
Submitted	Quinzon-Bonello,Rosario	02/04/2019 02:36 PM	Submitted for Approval
Approved	Quinzon-Bonello,Rosario	02/04/2019 02:36 PM	Unit Approval
Approved	Quinzon-Bonello,Rosario	02/04/2019 02:36 PM	College Approval
Pending Approval	Johnson,Jay Vinton Reed,Kathryn Marie	02/04/2019 02:36 PM	CAA Approval