

**Handbook  
For  
Ph.D. Students  
In  
Manufacturing and Technology Management**



**COLLEGE OF BUSINESS  
AND INNOVATION**

**The University of Toledo  
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## **MISSION**

The mission of the PhD Program in Manufacturing and Technology Management at the University of Toledo's College of Business and Innovation (COBI) is to produce competent scholars with in-depth skills in the creation and dissemination of knowledge in either operations and supply chain management (OSCM) or information systems (IS). We also expect our PhDs to be actively engaged in providing service to further the goals of the academic institution they serve and the larger academic and business communities. We thus seek to produce scholars who will take leadership positions in academia because of their outstanding contributions to research, teaching, and service.

## **VISION**

The vision for COBI's PhD Program is to distinguish ourselves from other institutions by exceling in teaching and research in the following areas:

- Management of technology
- Transformation of the business by technology
- Best practices in operational management
- Supply chain optimization
- Digital supply chain management

The above represent an interrelated set of areas where our internationally-acclaimed faculty have demonstrated strengths. Some of these areas focus on the integration of the two disciplines of IS and OSCM. We combine these two disciplines in our Information, Operations, and Technology Management (IOTM) department. Leveraging our IOTM faculty that collaborate closely in research, we seek to become a Center of Excellence in these areas.

## **PROGRAM FOCUS – IS and OSCM TRACKS**

Our program is very clearly focused on the two tracks of IS and OSCM. Students must choose one of these two tracks. A student choosing the IS track will be fully qualified to take a tenure-track position in IS at a research or teaching institution. Similarly, students choosing the OSCM track are expected to join tenure-track positions in operations management (OM) or supply chain management (SCM) in research or teaching institutions. The curriculum for the program is shown in Table 1. The courses and seminars taken in the program are structured into the following categories:

- Business Foundations
- Quantitative and Research Methods
- Major Field
- Track (IS or OSCM)

The business foundations courses are typically waived for students entering the program with an MBA. For such students, the program requires 60 credits of which 18 credits are for the dissertation. An MBA or another graduate degree is not a requirement for admission. If the student enters the program without an MBA, they may be required to take some or all of the business foundations courses. If a student enters the program without an MBA but with some other graduate degree, such as in industrial engineering, their previous graduate work can be used to waive some of the business foundations courses.

The prerequisites such as background in calculus, statistics, economics, and computer applications typically do not involve taking courses upon admission to our PhD Program. In the process of screening the applicants, the PhD Admissions Committee ensures that those who are admitted to our program have a suitable background to pursue a PhD in business, which means their prior educational training show reflect coursework in the prerequisite areas.

The program places special emphasis on research methods and methodology and the student has to take six courses from this group. The program exposes our students to a variety of research methods, including quantitative, statistical, analytical, algorithmic, and qualitative approaches, thus enabling our graduates to be successful researchers in the diverse field of technology management.

The major field in our program is technology management. The area of technology management is common to both IS and OSCM. The firm leverages both information technology (IT) as well as traditional and advanced manufacturing technology (AMT) to achieve its business goals with regard to operational efficiency, competitive advantage, and sustainability. Therefore, this area has courses in general technology management as well as seminars that purport to integrate the two areas of IS and OSCM. The integration of IS and OSCM is in fact viewed as a key distinguishing characteristic of our program. This is reflected in our vision where we identify digital supply chain management, or the digital integration of the supply chain, as a distinguishing competency that sets us apart from IS or OSCM programs at other institutions that treat these two areas more as independent silos. The student has to take three courses or seminars in this area.

Five courses and seminars are to be taken from the track itself. This set of track-related courses immerses the student in the theory of the IS or the OSCM discipline. While some of these courses are at the master's level, others are doctoral seminars that exposes the student in-depth to the wealth of research that has been done in these fields. As such, these doctoral seminars and courses are designed for the student to start work on their own research papers. Our program encourages students to submit papers to conferences starting from the second year of their study.

Doctoral dissertations are expected to be primarily in the IS or the OSCM field. However, we do accommodate inter-disciplinary dissertations which, although primarily rooted in IS or OSCM, intersect with some other discipline. Hence, dissertations can indeed be at the intersection of, for example, SCM and marketing or IS and accounting.

**Table 1: PhD Program Curriculum**

<b>Curriculum</b>			
<b>Course Number</b>	<b>Course Description</b>	<b>Credit Hrs</b>	<b>Status</b>
<b>PREREQUISITES</b>			
	1 Year of Calculus		
	Statistics that includes regression and analysis of variance		
	1 academic term of computer systems with application		
	Micro- and macro-economics		
	For IS track candidates some knowledge of programming		
<b>Business Foundations - 19 hours</b>			
ACCT 5000	Financial and Managerial Accounting	3	
ECON 5810	Econometrics Models and Methods I (Offered by Economics Dept)	4	
BUAD 6800	Information Technology and E-Business	3	
BUAD 6400	Results-Based Management	3	
MKTG 5410	Marketing Systems	3	
OPMT 5520	Analysis of Manufacturing and Service Systems	3	
<b>Quantitative and Research Methods - 18 hours</b>			
MFGM 8630	Management Science	3	
MFGM 8860	Advanced Statistics	3	
MFGM 8880	Research Methods and Theory Building	3	
MFGM 8870	Seminar in Statistics/Research Methods	3	
<b>TWO FROM THE FOLLOWING</b>			
RESM 6150/8150	Structural Equation Modeling (Offered by Education Dept)	3	
MFGM 8660	Qualitative Research Methodology	3	
MFGM 8640	Advanced Management Science	3	
MFGM 8650	Stochastic Modeling	3	
MFGM 8670	Special Topics in Research Methods	3	
<b>Major Field – 9 hours</b>			
MFGM 8480	Management of Technology	3	
MFGM 8980	Special Topics Seminar	3	
INFS 8990	Integrative Seminar	3	
<b>Track – 15 hours</b>			
<b>Dissertation – 18 hours</b>			
The students can choose either Operations and Supply Chain Management or Information Systems as a track. The track will be a supporting field of 5 courses or seminars at the master's or doctoral level including a seminar with the objective of integrating the two fields of operations and supply chain management and information systems.			
<b>Total hours for the Ph.D. program – 60 hours (post Master's)</b>			

**Table 1: PhD Program Curriculum (continued)**

<b>Operations and Supply Chain Management (OSCM) Track</b>		
MFGM 8890	Advanced Manufacturing Systems	3 hours
MFGM 8490	Supply Chain and E-Business Issues in Manufacturing	3 hours
MFGM 8510	Supply Chain and Technology Management Analytics	3 hours
OSCM 6680/8680	Quality and Process Excellence	3 hours
OSCM 6690/8690	Manufacturing Resources Management	3 hours
<b>Information Systems (IS) Track</b>		
INFS 6560/8560	Systems Analysis and Design	3 hours
INFS 6150/8150	Business Intelligence Management	3 hours
INFS 6710/8710	Management of Information Systems Security	3 hours
INFS 8760	IS Research Seminar I	3 hours
INFS 8770	IS Research Seminar II	3 hours

## LEARNING GOALS

There are three major learning goals in the program. Students must develop competency in:

- **Teaching** – Most of our courses, including those in the core research methods, the major field, and the tracks, require students to make in-class presentations. These presentations allow students to hone their teaching skills as well as provide faculty with opportunities to identify weaknesses the student may have in clearly communicating concepts, problems with the language, organization of material, and effectively responding to questions. Students with weaknesses are referred to the university's Center for Teaching and Learning to improve their skills. Students are also assigned a faculty Teaching Mentor who guides them in effective presentation, syllabi construction, material organization, class management, and grading. All students are required to teach at least one course with full instructional responsibility before graduation. In practice, many students get the opportunity to teach several courses.
- **Research** – Developing the capability for doing quality research starts right from the rigorous set of courses students take in the research methods area where they are exposed to a variety of research methods including quantitative positivist research (QPR), analytic modeling, algorithmic techniques, and qualitative research methodologies. Our students are immersed in a research environment from the early stages of the program through the COBI Scholar Series. The COBI Scholar Series is a series of presentations, held monthly, where both COBI as well as external faculty present on research they have published in top journals. All PhD students are required to participate in the COBI Scholar Series and critique the presented paper. The COBI Scholar Series also provides an excellent forum

for students to meet faculty with whom they can collaborate in future research projects. As such, our students are strongly encouraged to launch their own research streams by presenting their papers at national, regional, and international conferences. Early journal publications are fostered via Research Mentors. We are also striving to build research excellence in the specific areas identified in our vision statement. These areas are the management of technology, transformation of the business by technology, best practices in operational management, supply chain optimization, and digital supply chain management.

- **Service** – Our students are also required to develop skills in providing service through reviewing papers for journals and conferences, chairing sessions, and being panel discussants at conference sessions.

## **PLAN OF STUDY**

The student is expected to finish the required course work in the first two years of the program. The student then takes the comprehensive examination in the summer at the end of the second year of study. Upon successfully passing the comprehensive exam, the student is expected to develop a proposal for their dissertation, which they have to defend at some point in the third year. The remainder of the third and the fourth year are devoted to working on their dissertation. The dissertation is typically defended at the end of the fourth year of study.

The plan of study for OSCM students is shown in Table 2 and that for the IS students is shown in Table 3. The student has to work with the PhD Director in developing a plan of study which is then submitted to the College of Graduate Studies in the first semester of their entry into the program. This plan of study can be modified with the approval of the PhD Director as the student progresses through the program. Any updates to the plan of study must be submitted to the College of Graduate Studies after approval from the PhD Director. Course substitutions must be approved by the Director.

## **COMPREHENSIVE EXAMINATION**

The Ph.D. in Manufacturing and Technology Management is designed to educate students who are capable of doing interdisciplinary research by addressing a broad range of issues of managing knowledge bases. This interdisciplinary research address issues in product and process knowledge in manufacturing, information and product technologies (R & D), and integrating knowledge of technology and innovation processes with competencies in management, entrepreneurship, technology commercialization, human resources, marketing and sales, international business, and supply chains. The comprehensive examination is designed to test the students' understanding of these areas, ability to integrate across areas, and ability to demonstrate understanding of quantitative and qualitative research methodologies and their proper applications. The comprehensive

examination requires the students to understand and apply knowledge learned in all of the courses required for the program.

The format of the comprehensive examination is as follows:

1. The examination will cover issues in manufacturing and technology management and research and quantitative methodologies.
2. The comprehensive examination will be closed notes and closed book unless otherwise specified by the comprehensive examination committee.
3. The students will not be allowed to modify answers to the questions once the written examination is completed.

**Table 2A: Recommended OSCM Four-Year Plan of Study**

<b>1<sup>st</sup> Year</b>	
<b>Fall Semester</b>	<b>Spring Semester</b>
MFGM 8860 Advanced Statistics	MFGM 8630 Management Science
MFGM 8480 Management of Technology	OSCM 8680 Quality and Process Excellence
RESM 8120 Quantitative Methods II	MFGM 8880 Research Methods and Theory Building
	RESM 8510 Structural Equation Modeling
<b>2<sup>nd</sup> Year</b>	
<b>Fall Semester</b>	<b>Spring Semester</b>
OSCM 8690 Manufacturing Resources Management	MFGM 8890 Advanced Manufacturing Systems
MFGM 8640 Advanced Management Science	MFGM 8490 Supply Chain and E-Business Issues in Manufacturing
MFGM 8510 Supply Chain and Technology Management Analytics	INFS 8990 Integrative Seminar
	MFGM 8980 Special Topics Seminar
End of 2 <sup>nd</sup> Year Summer <b>Comprehensive Exam</b>	
<b>3<sup>rd</sup> Year</b>	
<b>Fall Semester</b>	<b>Spring Semester</b>
Dissertation (4 credits)	Dissertation (5 credits) Defense of Dissertation Proposal
<b>4<sup>th</sup> Year</b>	
Dissertation (4 credits)	Dissertation (5 credits) Defense of Dissertation

**Table 2B: Recommended IS Four-Year Plan of Study**



<b>1<sup>st</sup> Year</b>	
<b>Fall Semester</b>	<b>Spring Semester</b>
MFGM 8860 Advanced Statistics	MFGM 8630 Management Science
MFGM 8480 Management of Technology	INFS 8150 Business Intelligence Management
RESM 8120 Quantitative Methods II	MFGM 8880 Research Methods and Theory Building
	RESM 8510 Structural Equation Modeling
<b>2<sup>nd</sup> Year</b>	
<b>Fall Semester</b>	<b>Spring Semester</b>
INFS 8560 Systems Analysis and Design	INFS 8710 Management Information Systems Security
MFGM 8660 Qualitative Research Methodology	INFS 8770 IS Research Seminar II
INFS 8760 IS Research Seminar I	INFS 8990 Integrative Seminar
	MFGM 8980 Special Topics Seminar
End of 2 <sup>nd</sup> Year Summer <b>Comprehensive Exam</b>	
<b>3<sup>rd</sup> Year</b>	
<b>Fall Semester</b>	<b>Spring Semester</b>
Dissertation (4 credits)	Dissertation (5 credits) Defense of Dissertation Proposal
<b>4<sup>th</sup> Year</b>	
Dissertation (4 credits)	Dissertation (5 credits) Defense of Dissertation

### ***Applying for the Comprehensive Examination***

The comprehensive examination must be passed in order for a student to be admitted to Ph.D. candidacy. It is up to the student to apply for the comprehensive examination at least six weeks prior to the scheduled time for the examination. The exam is normally scheduled once a year during the summer. A student will be allowed to take the comprehensive examination if he/she has successfully completed all the coursework.

### ***Comprehensive Examination Committee***

#### **Responsibilities**

1. Confirm students' eligibility to take the Comprehensive exam with the Ph.D. program Director.
2. Establish rules for the Comprehensive exam.
3. Structure the Comprehensive exam sections and questions.
4. Approve the final Comprehensive exam sections, questions, and time length for each section.
5. Administer the Comprehensive exam.
6. Grade the comprehensive exam.
7. Render a written report of the Comprehensive exam results to the Ph.D. Director.

### Composition

1. The Associate Dean for Graduate studies.
2. Director of the Ph.D. Program.
3. The Director of the Ph.D. Program appoints the Chair of the committee in consultation with the Associate Dean for Graduate studies.
4. Other graduate faculty interested in participating in the Ph.D. Comprehensive exam.
5. Professors who are teaching the five integrative Ph.D. seminars, Advanced Statistics, and Research Methods.
6. At least one ex-chair of the comprehensive exam committee, if available.

### ***Written Comprehensive Examination***

For a student to pass the written comprehensive examination, a majority vote of the members of the comprehensive examination committee is required. Members must be present to vote. Voting will be by secret ballot only. Based on the written comprehensive examination, the comprehensive examination committee can recommend a pass for students who have clearly demonstrated in depth knowledge of the materials. A student passes or fails the entire examination. The categories of low pass or conditional pass are not to be used. The chair of the comprehensive examination committee will inform the program director of the committee's decision in writing. The program director will inform the student in writing of the results of the written comprehensive examination upon receipt of the decision from the chair of the comprehensive examination committee.

### ***Supplementary Comprehensive Examination***

A student who passed all-but-one question in a comprehensive exam and is considered as borderline on that question may be, at the discretion of the Committee, allowed to take a supplementary exam. This supplementary exam will be in the written format and subject

to the same rules and conditions applicable to the comprehensive exam. In the supplementary exam, the student will be required to answer only one question. That question will cover the same subject matter as the question in the comprehensive exam on which the student's answer was considered as borderline. It will not repeat the same question in the comprehensive exam, however. The purpose of this supplementary exam is to offer an opportunity for the student to better demonstrate his/her understanding of the subject matter under question, and for the committee to ascertain that the student can satisfactorily pass the comprehensive exam on this subject matter in addition to the other questions he/she already received the passing grade from the Committee.

Within two weeks of the release of the outcomes of a comprehensive exam and based on the committee's recommendations, the PhD program director will notify each student, if any, who has been recommended for the supplementary comprehensive exam. The PhD program Director shall arrange for that supplementary exam to be taken within six weeks of such notification.

A student is given only one such exam during his/her entire PhD program, not for each comprehensive exam taken, and only if he/she is recommended by the committee as stipulated above. A student who already took one such supplementary exam but did not pass it will not be considered for another such exam in a subsequent comprehensive exam. A student who fails two comprehensive exams will be dropped from the PhD program regardless of whether he/she was granted a supplementary exam following either of these two comprehensive exams.

## **DISSERTATION**

The dissertation must be based on work initiated and undertaken specifically for that purpose. It must reflect a high level of scholarship, must constitute a substantial piece of work, which is original, and must indicate and document its claims to be a significant contribution to knowledge in its subject area. The selection of a topic for the dissertation research is made by the student with the assistance of the advisor. A student has seven years from the time of entering the program to complete the dissertation.

### ***Some General Guidelines for Selection of a Dissertation Committee***

The selection of the dissertation advisor (Chairperson of the Dissertation Committee) is made by the student with the assistance and consent of the Ph.D. Program Director. As the student is preparing a dissertation proposal, he/she can petition the Director of the Ph.D. Program to appoint a Dissertation Committee.

The dissertation committee should include at least two faculty members from the student's primary research area of interest (including the Chairman of the Dissertation Committee), one from outside the primary area of interest, and one from outside the College of Business Administration who is a UT faculty member. These constitute the voting members of the committee as a minimum. Additional voting members can be

included. The Graduate School may appoint a non-voting representative to oversee the integrity of the final dissertation defense.

This committee should be formed early in the research stage to provide advice and guidance on the dissertation. All of the committee members should be members of the Graduate Faculty. An associate member of the Graduate Faculty may serve on, but may not be the chair of, the dissertation committee.

If, for warranted reasons, it is desirable to have a person on the committee who does not meet the above qualifications, special permission must be obtained from the Program Director and the Graduate School.

### ***Responsibilities of the Dissertation Committee***

This committee is responsible for the progress of the candidate's dissertation and will keep in touch with his or her research. When the advisor believes the dissertation proposal is ready for preliminary approval, he/she will circulate it in final typewritten form among the members of the committee. The advisor will allow a minimum of two weeks for reading of the dissertation proposal and will then convene the dissertation committee (without the candidate) for the purpose of evaluating it. Recommended revisions will be noted by the advisor and communicated to the candidate. When, in the opinion of the advisor and the candidate, the appropriate revisions have been made, the advisor will inform the Program Director in writing and a dissertation proposal presentation session will be arranged.

### ***Dissertation Policies***

After the dissertation committee has been established, the student will develop a detailed dissertation proposal. Prior to defense of the dissertation proposal, the student will circulate to each member of the Graduate Faculty in the College an abstract of approximately one page in length briefly describing the nature of the dissertation, the methodological approach, and announcing the time and date of the defense of the dissertation proposal.

The dissertation proposal will be prepared and presented to the dissertation committee and defended in an open meeting. The proposal shall describe the background, objectives and general methods of the proposed research.

It is hoped that all Graduate Faculty members will attend the defense of the proposal and make constructive suggestions to the Chairperson of the Dissertation Committee. All suggestions will be carefully reviewed by the Dissertation Committee. The committee will have the right to accept or reject these suggestions.

### ***Approval of Dissertation Proposal***

The candidate must formally present his or her dissertation proposal before the dissertation committee. Final approval of the dissertation proposal requires the unanimous approval of the members of the Dissertation Committee. The committee must notify the Program Director and the Dean of the Graduate School that the dissertation topic has been formally approved by filing an appropriate form in duplicate with all necessary signatures.

Approval of the dissertation proposal does not insure approval of the dissertation. It does, however, certify that:

1. The study represents a significant contribution to the field.
2. The candidate can obtain the necessary data and successfully execute the study.
3. The timetable for completing the study is realistic.

### ***Format of the Dissertation Proposal***

The specific format required by the dissertation committee may vary somewhat depending upon the nature of the study, but will normally include the following points:

1. A precise statement of the problem which the student proposes to investigate.
2. A statement of the reasons for undertaking the study. This will include specifying relationships being explored, definitions of terms, gaps in the literature, and controversies that only research can clarify.
3. A section indicating previous work, which has been done and a relevant bibliography as evidence of the fact that he or she has carefully searched the literature on the topic he or she proposes to investigate and that this study will, in fact, represent a contribution to knowledge.
4. A clear statement of the theoretical foundation of the research, its contribution to the field, and the research methods that will be used to complete the study.

### ***Defense of Dissertation***

After successful defense of the proposal, the student devotes himself or herself to the detailed research on the dissertation topic under the direction of the Dissertation Committee. After approval by the Dissertation Committee at the Pre-dissertation Defense Meeting, there will be a public defense of the dissertation. This is an oral examination conducted by the Dissertation Committee, but is opened to other members of the faculty of the University. The student should submit the dissertation to the Dissertation Committee at least three weeks prior to the examination.

The time of holding the dissertation defense should be chosen by the student and approved by the Dissertation Committee and the Ph.D. Program Director. The schedule of the defense should be submitted to the dean of the Graduate School.

It is possible that the final oral examination (dissertation defense) may lead to some revision of the dissertation, and time should be allowed for this. A student qualifies for graduation after passing the final oral examination and presenting a satisfactory dissertation as determined by Dissertation Committee. The final dissertation must be presented to the Dean of the Graduate School at least four weeks before the degree is to be conferred.

### ***Final Dissertation Defense***

The dissertation committee should have a minimum of two weeks to read the dissertation before determining a defense date. In the absence of the Dissertation Chairperson, the oral defense may not be held. In the case of a prolonged absence of the Dissertation Chairperson, the Program Director, in consultation with the remaining committee members, should make appropriate arrangements for a substitute.

The final oral defense will be open to the University community. Copies of the abstract of the dissertation should be available to the Graduate Faculty of the College two weeks prior to the defense and at the defense itself to familiarize members of the graduate faculty with the methodology and findings.

The candidate will open the defense with a brief presentation of his or her findings, after which the members of the Dissertation Committee and the audience will question the candidate. When the members of the audience have completed their questions, the audience will be excused and members of the committee may continue questioning until they are satisfied. At this point, the candidate will be excused and the committee will vote.

Questions dealing with the substance, meaning, and usefulness of the research in the dissertation are appropriate. Questions or comments dealing with punctuation or grammatical minutiae, spelling, etc., are out of order; such comments should be written and privately submitted to the chair.

The candidate should be evaluated both upon the overall quality and significance of his or her dissertation and the oral defense of his or her findings.

A candidate passes the final defense if the candidate does not receive more than one dissenting vote.

All members of the Committee will sign the "Report of Final Examination" form, recording their votes. Committee members may vote "Yes" or "No," but they should not abstain.

### ***Rescheduling of Final Dissertation Defense***

A rescheduling of the oral defense, if necessary, will occur when, in the opinion of the chair, the dissertation has been modified to incorporate the suggested changes. The dissertation must be acceptable, with no dissenting vote, before the rescheduled final oral can be held. If the dissertation is not in suitable form at this second scheduled oral, the Program Director will be notified. Further action is then the responsibility of the Program Director.

### ***Completed Dissertation***

The final form of the dissertation may follow that suggested by Kate L. Turabian of APA (American Psychological Association). For additional information concerning the technicalities, the booklet “A Style Guide for Typing Theses or Dissertations” is available at the Graduate School.

### ***Dissertation Ownership***

It must be clear to faculty, students/graduates (hereafter referred to as graduates), and administrators that the dissertation is an essential outcome of a Ph.D. program and that the ideas, work, and findings of the dissertation should primarily be the direct result of the graduate’s efforts. Dissertation Committee members, including the Chair or Co-Chairs, provide guidance and feedback and evaluate the outcome – render judgment as to the dissertation value and sufficiency in meeting the requirements for graduation. Dissertation Committee members, including the Chair or Co-Chairs, do not have rights to the dissertation or its components. These belong to the graduate.

Based on this understanding, the dissertation is a product produced by the graduate and he/she has the right to publish the results in ways that benefit him/her. This means that the graduate may publish results without permission of the Dissertation Committee members, including the Chair or Co-Chairs, and without including them as co-authors. It is expected, however, that due credit be given to the intellectual contributions of the Chair and/or Co-Chair. This can be by many ways such as co-authorship in work published from the dissertation.

### ***Dissertation Research Funding***

College of Business provides the financial support for the students who have defended their dissertation proposal to conduct survey for their dissertation. The financial support should ease part of financial burden for Ph.D. students to complete their dissertation. The maximum amount of funding support from the College is \$1,200. It is available to

students who have passed the comprehensive examination. To receive the funding, the chair of the dissertation committee must submit a written request to the Ph.D. program director, who will review, approve, and forward to the dean's office for authorization.

## **STUDENT CENTEREDNESS**

The idea of student centeredness is highly integrated with the mission of Ph.D. Program in Manufacturing Management. Student centeredness is a focus that support student's need for learning, professional development, and connection to academic communities. The goal of student centeredness is to help students obtain high-quality education and professional development in teaching and research so that they can become successful teacher and researcher in the academic communities.

The following programs and activities are implemented for the purpose of student centeredness:

### ***Faculty Mentor Program***

Each student in the Ph.D. program is assigned a faculty mentor from the Department of Information, Operations, and Technology Management (IOTM). This mentor will oversee both the student's development as a researcher and also ensure that the student has adequate opportunities for gaining teaching experience as the student progresses through the program.

With regard to research mentoring, students will be given opportunities to gain research experience by assisting faculty in doing research. The COBI Scholar Series where both COBI and external faculty present their high-quality and cutting-edge research will provide opportunities for students to gain a bird's eye view into research and build partnerships with faculty that will stand them in good stead as they develop their own research in the future. The COBI Scholar Series will include presentations by not only faculty but also students themselves. This will thus provide students the opportunity to test out their ideas and get feedback from expert faculty.

With regard to teaching mentorship, students will be given several opportunities to not only support faculty in the role of a teaching assistant but also to take on full instructional responsibility for teaching courses. The opportunity for full instructional responsibility for teaching courses is expected to be given to advanced PhD students in the third or fourth year of the program.

On one hand, teaching assignment provide the opportunities for students to gain teaching experience, which is very important for their career development. On the other hand, teaching assignment of Ph.D. student also support the needs for the instructors in College of Business.



After the student has passed the comprehensive exam and identified their dissertation committee, then the faculty mentor role will pass onto their dissertation committee chair.

### ***Professional Development***

Students are encouraged by the Director and other faculties of the Ph.D. program to attend the professional conferences, such as the regional and national conferences of Decision Science Institute. By attending the professional conference, students can develop their professional experience in presenting paper and building connection in the academic communities. The second year Ph.D. students are also encouraged to attend doctoral student consortium at the national conferences to receive trainings on the research and job searching.

Students who are on financial assistance will normally be assumed to be in need of assistance. Students who are employed/working full time are not eligible to apply or to spend remaining approved funds.

To be awarded funds, a student must have passed the comprehensive examinations (major and minor) and must submit a dissertation proposal to the Ph.D. program director that has been endorsed by the student's committee chair.

The money does not have to be spent in any single year, it may be carried forward. Expenditure must be supervised (approved) by the chair of the student's dissertation committee. Expenses must be directly related to the student's dissertation planning and execution (no conference travel).

### ***Funding Doctoral Student Travel for Presentations and Participation in Doctoral Student Consortium***

The goal of this policy is to contribute to the Ph.D. student's professional development by encouraging their participation in quality academic conferences. All students who are traveling representing the University of Toledo are eligible for this travel support whether they are part-time or full time students.

Students who have completed one academic year (two semesters) in the Ph.D. program will be eligible for partial financial support for professional presentations at conferences and participation in doctoral student consortiums. Students may be funded for only one doctoral student consortium. Funding will be limited to two trips at a maximum of \$500 per trip. The money does not have to be spent in any single year, it may be carried forward. Students will be reimbursed upon submission of appropriate receipts.

Students must forward documentation of their paper acceptance or consortium participation to the Director of the Ph.D. Program for prior approval. He will then email the College Budget Officer indicated that the travel is approved. Students are to focus on quality academic conferences at a national level.

## PERFORMANCE APPRAISAL

The annual performance appraisal is designed to determine if the Ph.D. student is making satisfactory progress toward degree. Many factors are used to judge progress including development and demonstration of research and teaching skills, and performance in course work. The main goal of the performance appraisal is to determine continuation of financial aid and/or continuation in the program itself.

If the student's performance in coursework, development of their own research, and in their graduate assistant (GA) duties is deemed to be unsatisfactory by the PhD Program Director, the Director will meet with the student and discuss the shortfall in performance with the student. The Director will consider extenuating circumstances that the student may provide for the deficiency in performance and counsel the student on how to rectify the gaps in performance in the next semester.

If the shortfall in performance continues in the next two semesters after the Director has had the performance appraisal meeting and indicated to the student that they are falling behind in performance, the Director may then ask the PhD Review Committee to consider the termination of the student from the program.

### *PhD Performance Review Committee*

If asked by the PhD Director to consider the possibility of the termination of a student from the PhD program, the PhD Performance Review Committee will examine the student's performance at multiple levels including in coursework, research, service activities, and in duties assigned to them as a graduate assistant.

#### Composition

- Associate Dean for Graduate Studies
- Chair of Department of Information, Operations, and Technology Management
- Student's Faculty Mentor
- Graduate Programs Advisor, Office of Graduate Programs

If the PhD Performance Review Committee recommends that the student be terminated from the program, then this recommendation from the committee will be submitted to the Dean. The Dean will have the final authority on whether the student should be terminated from the program.

#### Appeal Process

The student may appeal the decision to terminate them from the program. Appeals are to be handled according to the College of Business and University appeal processes.

## STUDENT ACCOMPLISHMENTS FORM

(To be completed by student every year)

Date: \_\_\_\_\_

Completed By (Student Name): \_\_\_\_\_

### 1. Teaching

**Courses Taught:** List your course assignments and attach a summary of your teaching performance.

2. Development and demonstration of research skills:

**Involvement in Research Projects:** List and describe the research projects in which you are involved.

**Presentations:** List title, co-author, place, date and status of submissions to professional meetings.

**Publications:** List title, journal, co-author, date and status of submission to refereed journals.

3. Interest and Commitment to Professional Development

**Memberships:** List your memberships in professional associations.

**Attendance at Professional Meetings:** List the professional meetings, place and dates you have attended.

**Other Events:** List participation in other events, places and dates you have attended (i.e. departmental presentations, brown bags, guest speakers).

## **PROGRESS TOWARDS PH.D.**

(To be completed by the Director of the Ph.D. program from second year of Program)

Student Name: \_\_\_\_\_

### **A) Program of Studies Approved**

Yes\_\_\_\_\_ No\_\_\_\_\_ Date\_\_\_\_\_

### **B) Comprehensive Exams Taken**

Result\_\_\_\_\_ Date\_\_\_\_\_

Result\_\_\_\_\_ Date\_\_\_\_\_

**C) Residency Requirement Met**

Yes\_\_\_\_\_ No\_\_\_\_\_

**D) Progress Relative to Planned Program**

Below Average \_\_\_\_\_

Satisfactory \_\_\_\_\_

Outstanding \_\_\_\_\_

**E) Dissertation Committee Formed**

Date \_\_\_\_\_

Chair \_\_\_\_\_

Members \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**F) Dissertation Proposal Accepted**

Yes\_\_\_\_\_ No\_\_\_\_\_ Date\_\_\_\_\_

**G) Defense of Dissertation**

Successful \_\_\_\_\_ Not Successful \_\_\_\_\_ Date \_\_\_\_\_

Director of Ph.D. Program: \_\_\_\_\_