

Specific Format Required for a Complete Proposal

A complete proposal should contain the following information in this order and numbered this way:

1. New Program Proposal Form

**Form NP
NEW PROGRAM PROPOSAL FORM**

Sponsoring Institution(s): Southeast Missouri State University

Program Title: Industrial Distribution

Degree/Certificate: Bachelor of Science

Options: None

Delivery Site(s): Cape Girardeau, Missouri

CIP Classification
(provide a CIP code): 15.1501

Implementation Date: Fall 2016

Cooperative Partners: None

Expected Date of First Graduation: Spring 2019

AUTHORIZATION

Dr. Gerald McDougall, Interim Provost
Name/Title of Institutional Officer


Signature

12/17/15
Date

Dr. Bradley Deken, Chair, Dept. of Polytechnic Studies
Person to Contact for More Information

573-651-2104
Telephone

2. Need:
- A. Student Demand:
- i. Estimated enrollment each year for the first five years for full-time and part-time students

Form SE
STUDENT ENROLLMENT PROJECTIONS

Year	1	2	3	4	5
Full-Time	5	9	14	18	18
Part-Time	0	1	1	2	2
TOTAL*	5	10	15	20	20

* In each case, an average of 15 credit hours per student is projected.

- ii. Will enrollment be capped in the future? *Response: No.*

B. Market Demand:

- i. National, state, regional, or local assessment of labor need for citizens with these skills

Response:

The impetus for the development of this program came from market demand. There have been several companies approach Southeast asking for such a program. According to the U.S. Department of Labor, Bureau of Statistics, the mean wage for the 106,000 employed in this area (Transportation, Storage and Distribution Managers) is \$93,180. While there is not significant growth planned in this area, our region is currently lacking programs in this area. According to amtonline.org, the nearest programs are at Purdue University, University of Illinois-Urbana-Champaign, University of Alabama-Birmingham, University of Missouri (not specifically on distribution), Nebraska-Kearney, and Texas A&M. Some members from the Polytechnic Studies Department advisory committee, representing industries of manufacturing, banking, transportation and logistics, and health care, also report a regional need for Industrial Distribution professionals.

C. Societal Need:

- i. General needs which are not directly related to employment

Response: Industrial Distribution professionals help manage the global supply chain and coordinate transportation systems. They focus primarily on the products used by manufacturers, construction companies, and municipalities. The goal is to optimize systems for maximum efficiency, minimum cost, quality improvement, safety, and other interests to the stakeholders. It saves time, money, materials, energy, and other resources for the companies, industries, and essentially for our society. The skills of

Industrial Distribution professionals can be applied in a range of organizations and more and more organizations have recognized their significance.

D. Methodology used to determine "B" and "C" above.

Response: 1) Discussions with companies involved with Industrial Distribution, including HD Supply, Serpro Logistics, and Buchheit Logistics. 2) Meeting with the Southeast Polytechnic Studies Advisory Board on October 9, 2014 in Cape Girardeau. They are individuals representing interests of organizations in manufacturing, transportation, and engineering. 3) U.S. Bureau of Labor Statistics website (<http://www.bls.gov>). 4) Various prints and electronic articles.

3. Duplication and Collaboration: If similar programs currently exist in Missouri, what makes the proposed program necessary and/or distinct from the others at public institutions, area vocational technical schools, and private career schools?

Response:

The only similar program in Missouri is the Industrial & Manufacturing Systems Engineering program provided by the University of Missouri. The proposed program exhibits significant differences from the existing one because the existing one is an engineering program. The proposed program will focus on distribution aspects by incorporating a number of business classes.

Does delivery of the program involve a collaborative effort with any external institution or organization?

Response: No. If yes, please complete Form CL.

4. Program Structure:

**Form PS
PROGRAM STRUCTURE**

- A. Total credits required for graduation: 126-128 cr.
- B. Residency requirements, if any: 30 cr. (General University Guidelines)
- C. General education (total credits): 51 cr. (Univ. Studies req.)

General education courses (specific courses OR distribution area and credits):

[See Appendix A for the names of all courses listed below.]

<u>UI100</u>	<u>3</u>	<u>cr.</u>	<u>Artistic Exp</u>	<u>3</u>	<u>cr.</u>	<u>Polit. Sys</u>	<u>3</u>	<u>cr.</u>
<u>EN100</u>	<u>3</u>	<u>cr.</u>	<u>Literary Exp</u>	<u>3</u>	<u>cr.</u>	<u>Major Civ.</u>	<u>3</u>	<u>cr.</u>
<u>MA134</u>	<u>3</u>	<u>cr.</u>	<u>Oral Exp</u>	<u>3</u>	<u>cr.</u>	<u>UI3xx</u>	<u>3</u>	<u>cr.</u>
<u>PH106</u>	<u>3</u>	<u>cr.</u>	<u>Written Exp</u>	<u>3</u>	<u>cr.</u>	<u>UI400</u>	<u>3</u>	<u>cr.</u>
<u>MN220 or EC215</u>	<u>3</u>	<u>cr.</u>	<u>Behav. Sys.</u>	<u>3</u>	<u>cr.</u>	<u>UI410</u>	<u>3</u>	<u>cr.</u>
<u>SW207</u>	<u>3</u>	<u>cr.</u>	<u>BS105</u>	<u>3</u>	<u>cr.</u>			<u>cr.</u>

D. Major requirements (total credits): 86 cr.

<u>AC221</u>	<u>3</u>	<u>cr.</u>	<u>MG354</u>	<u>3</u>	<u>cr.</u>	<u>ET374</u>	<u>3</u>	<u>cr.</u>
<u>AC222</u>	<u>3</u>	<u>cr.</u>	<u>MK301</u>	<u>3</u>	<u>cr.</u>	<u>EV551</u>	<u>3</u>	<u>cr.</u>
<u>BL255</u>	<u>3</u>	<u>cr.</u>	<u>MK342</u>	<u>3</u>	<u>cr.</u>	<u>FM504</u>	<u>3</u>	<u>cr.</u>
<u>CH180 or CH181 or CH185</u>	<u>3 or 5</u>	<u>cr.</u>	<u>MK346</u>	<u>3</u>	<u>cr.</u>	<u>FM525</u>	<u>3</u>	<u>cr.</u>
<u>EG462*</u>	<u>3</u>	<u>cr.</u>	<u>MK347</u>	<u>3</u>	<u>cr.</u>	<u>MN120</u>	<u>3</u>	<u>cr.</u>
<u>IM102</u>	<u>3</u>	<u>cr.</u>	<u>QM258</u>	<u>3</u>	<u>cr.</u>	<u>MN170</u>	<u>3</u>	<u>cr.</u>
<u>IM301</u>	<u>3</u>	<u>cr.</u>	<u>QM352</u>	<u>3</u>	<u>cr.</u>	<u>MN203</u>	<u>3</u>	<u>cr.</u>
<u>IM311 or QM257</u>	<u>3</u>	<u>cr.</u>	<u>QM558</u>	<u>3</u>	<u>cr.</u>	<u>CM126</u>	<u>3</u>	<u>cr.</u>
<u>IM313</u>	<u>3</u>	<u>cr.</u>				<u>CM226</u>	<u>3</u>	<u>cr.</u>
<u>IM405*</u>	<u>3</u>	<u>cr.</u>	Choose 15 cr. from:			<u>CM315</u>	<u>3</u>	<u>cr.</u>
<u>IM417</u>	<u>3</u>	<u>cr.</u>	<u>ET160</u>	<u>3</u>	<u>cr.</u>	<u>CM325</u>	<u>3</u>	<u>cr.</u>
<u>MG301</u>	<u>3</u>	<u>cr.</u>	<u>ET304</u>	<u>3</u>	<u>cr.</u>			

* Denotes new courses that would be co-listed with existing graduate level courses within the department, as outlined in Appendix B.

- E. Free elective credits
(sum of C, D, & E should equal A): 0
- F. Requirements for thesis, internship
or other capstone experience: UI410 3 cr.
- G. Any unique features such as
interdepartmental cooperation: Harrison College of Business (36 to 42 cr.)

6. Program Characteristics and Performance Goals: For collaborative programs, responsibility for program evaluation and assessment rests with the institution(s) granting the degree(s).

Form PG
PROGRAM CHARACTERISTICS AND PERFORMANCE GOALS

Institution Name: Southeast Missouri State University

Program Name: Bachelor of Science in Industrial Distribution

Date: Fall 2016

(Although all of the following guidelines may not be applicable to the proposed program, please carefully consider the elements in each area and respond as completely as possible in the format below. Quantification of performance goals should be included wherever possible.)

Student Preparation

- Any special admissions procedures or student qualifications required for this program which exceed regular university admissions, standards, e.g., ACT score, completion of core curriculum, portfolio, personal interview, etc. Please note if no special preparation will be required.

Response: No special preparation will be required.

Characteristics of a specific population to be served, if applicable

Response: Individuals seeking formal education and training to pursue careers in Industrial Distribution.

Faculty Characteristics

- Any special requirements (degree status, training, etc.) for assignment of teaching for this degree/certificate.

Response: In the Department of Polytechnic Studies, there are four faculty members (tenured or tenure track) with Ph.D. degrees from Industrial Engineering and Distribution programs. Other faculty members in Polytechnic Studies, and the faculty members in the Harrison College of Business, have different levels of experience related to Industrial Distribution. They also have appropriate degrees and training in their respective areas of expertise in order to teach their respective supporting courses for this program.

- Estimated percentage of credit hours that will be assigned to full-time faculty. Please use the term "full-time faculty" (and not FTE) in your descriptions here.

Response: It is anticipated that a majority of the courses in the major (i.e. more than 90%) will be taught by full-time faculty.

- Expectations for professional activities, special student contact, teaching/learning innovation.

Response: As expected of all faculty members at Southeast, faculty teaching in the proposed program will have expectation for professional development activities to keep them current in their respective fields of expertise.

Enrollment Projections

- Student FTE majoring in program by the end of five years:
Response: FTE=20.0
- Percent of full-time and part-time enrollment by the end of five years:
Response: Full Time=90%; Part Time=10%.

Student and Program Outcomes

- Number of graduates per annum at three and five years after implementation:
*Response: 3 Yr. =1
5 Yr. = 5*
- Special skills specific to the program:
Response: The program objectives of Industrial Distribution are that upon graduation students will be able to:
 1. *Identify, formulate, and solve complex Industrial Distribution & Technology Management problems.*
 2. *Design a system, component, or process to meet desired needs.*
 3. *Collect, analyze, and interpret data relevant to the problems in the Industrial Distribution & Technology Management domain.*
 4. *Understand impact of technology management solutions in a global, economic, environmental, and societal context.*
 5. *Do one of the following:*
 - a. *Enter the workforce as an entry-level Industrial Distribution & Supply Chain Management professional.*
 - b. *Be accepted into a graduate program related to Industrial Distribution & Supply Chain Management.*
 6. *Understand the need for lifelong learning in their Industrial Distribution & Technology Management careers.*
 7. *Exhibit ethical and legal responsibilities as an Industrial Distribution & Supply Chain Management professional.*
 8. *Demonstrate the ability to communicate effectively.*
 9. *Demonstrate critical thinking skills.*

[The last two are university-wide objectives.]
- Proportion of students who will achieve licensing, certification, or registration:
Response: N/A
- Performance on national and/or local assessments, e.g., percent of students scoring above the 50th percentile on normed tests; percent of students achieving minimal cut-scores on criterion-referenced tests. Include expected results on assessments of general education and on exit assessments in a particular discipline as well as the name of any nationally recognized assessments used.
Response: N/A
- Placement rates in related fields, in other fields, unemployed:
Response: Related Field=95% and Other Fields=5%

- Transfer rates, continuous study
Response: N/A

Program Accreditation

- Institutional plans for accreditation, if applicable, including accrediting agency and timeline. If there are no plans to seek specialized accreditation, please provide reasons.
Response: We have not found an appropriate accrediting body for this program yet. However, we will continue investigating possible accreditation opportunities.

Alumni and Employer Survey

- Expected satisfaction rates for alumni, including timing and method of surveys
Response: Surveys will be conducted on graduates within three months of graduation from the fall and spring terms, requesting their input among other things on their satisfaction with the quality of the program. This will be followed up by an every three year survey of these graduates to assess the effectiveness of the program in preparing them for their careers.
- Expected satisfaction rates for employers, including timing and method of surveys.
Response: Surveys will be conducted on employers of graduates every three years requesting their input on quality of the program and its graduates. The Southeast Polytechnic Studies Advisory Committee that meets once per year will also provide input during the meetings.

7. Accreditation: If accreditation is not a goal for this program, provide a brief rationale for your decision. If the institution is seeking program accreditation, provide any additional information that supports your program.

Response: The program will seek accreditation. However, we have not yet found an accrediting body that fits with the program's objectives.

8. Institutional Characteristics: Please describe succinctly why your institution is particularly well equipped or well suited to support the proposed program.

Response: The Department of Polytechnic Studies is well suited to provide the Bachelor of Science in Industrial Distribution degree because of the excellent faculty and facilities associated with the department, as well as faculty and facilities in the collaborating departments. In addition to this, the majority of the courses associated with the proposed program are currently available and being offered at the university.

9. Any Other Relevant Information:

Response: None

Appendix A

Program Requirements with Course Names

**Department of Polytechnic Studies
Program Proposal for
BS DEGREE IN INDUSTRIAL DISTRIBUTION**

University Studies (51 Credit Hours)

Course #	Course Description	Hours	Pre-req
UI100	First Year Seminar	3	
Varies	Artistic Expression	3	
Varies	Literary Expression	3	
Varies	Oral Expression	3	
EN100	English Composition	3	
EN140	Written Expression	3	
Varies	Behavioral Systems	3	
BS105	Environmental Biology (Living Systems)	3	
MA134	College Algebra (Logical Systems)	3	
Varies	Development of a Major Civilization	3	
PH106	Physical Concepts	3	
MN220 or EC215	Engineering Economic Analysis or Principles of Microeconomics	3	(MA134) or (MA134 and AD101 or EP100)
Varies	Political Systems	3	
SW207	Understanding Cult & Soc Diversity (Social Systems)	3	
UI3XX	Interdisciplinary University Studies Course (UI360 Recommended)	3	
UI400	Business and Ethics (for UI3XX Interdisciplinary University Studies Course)	3	
UI410	Manufacturing Research in a Global Society	3	Senior Standing
WP003	Writing Proficiency Test	0	
MAPP	Academic Proficiency & Progress Test	0	
CL001-CL004	Career Services Course Requirements	0	
Total UI credits		51	

Major Courses (78 Credit Hours)

Course #	Course Description	Hours	Pre-req
AC221	Principles of Accounting I	3	AD101 and MA134
AC222	Principles of Accounting II	3	AC221
BL255	Legal Environment of Business	3	
CH180 or CH181 or CH185	Chemistry in our World or Basic Principles of Chemistry or General Chemistry	3 or 5	MA106
EG492	Modeling and Simulation (will co-list with IM692)	3	IM311 or MA223
IM102	Technical Communication	3	EN100
IM301	Industrial Safety and Supervision	3	IM102
IM311 or QM257	Statistical Process Control or Business Statistics I	3	(MA134 or 137) or (MA134 and AD101)
IM313	Facilities Planning	3	IM315 or MN304
IM417	Manufacturing Resources Analysis	3	IM311
IM405	Innovation for a Lean Enterprise (will co-list with IM605)	3	TBD
MG301	Principles of Management	3	45 hours completed
MG354	Business Negotiation	3	MG301
MK301	Principles of Marketing	3	45 hours completed
MK342	Professional Selling	3	MK301
MK346	Distribution Management	3	MK301
MK347	Transportation	3	MK301
QM 258	Business Statistics II	3	QM257
QM352	Management Science (Quantitative Analysis)	3	QM258
QM558	Prin. of Supply Chain management	3	QM352
	Sub-total of core hours	60	
Choose 15 hours from:			
ET160	Basic Electricity and Electronics	3	MA134 or MA137
ET304	Fundamentals of PLCs	3	ET160
ET374	Industrial Electronics	3	ET260
EV551	Hazardous Materials Assessment	3	Consent of instructor
FM504	Facilities Management	3	
FM525	Building Automation and Technology	3	
MN120*	Fundamentals of Engineering Design Processes	3	
MN170	Engineering Materials and Testing	3	CH181 and MA134
MN203	Engineering Materials and Processes I	3	MN120 and MN170
CM126*	Computer Aided Architectural Drafting	3	
CM226	Residential Architectural Drafting & Design	3	CM126
CM315	Construction Contracts and Legal Issues	3	CM126
CM325	Building Mechanical and Electrical Systems	3	CM226 and CM243 and CM310
	Sub-total of core hours	60	
	Sub-total of UI only hours	51	
	Sub-total of elective hours	15	
	Total hours	126	

Appendix B

New Courses

Industrial Distribution Core Courses

October 24, 2014

On the pages that follow are outlines for two proposed new courses:

EG492 Modeling and Simulation
IM405 Innovation for a Lean Enterprise

[Note: The registrar has said that the EG prefix has not been used to date and can be used here.]

EG492 Modeling and Simulation

Department: Polytechnic Studies
Title of Course: Modeling and Simulation

Course No.: EG492
Revision: New

Catalog Description

This course emphasizes the development of modeling and simulation concepts and analysis skills necessary to design, program, implement, and use computers to solve complex systems/products analysis problems. (3 credit hours)

Prerequisites: MA523

Objectives of the Course:

1. To introduce the development of computer simulation and modeling systems using commercially viable software to support and automate business decision making.
2. To enable students to acquire an understanding of the basic concepts and skills associated with computer simulation and modeling, decision theory and modeling of business decisions.

Students Learning Outcomes:

Students will:

1. Apply probabilistic models in modeling real world systems.
2. Implement a simulation of a real world model using commercially viable software.
3. Analyze probabilistic distribution of data generated from the simulation model and correlate it to real world data.

Course Content or Outline:

Topic	Hours
1. Review of Probability and Statistics	3
2. Queuing Theory	3
3. Random Numbers and random number generation	5
4. Queuing models	6
5. Statistical Models	3
6. Input Modeling	6
7. Simulation Software	6
8. Verification and Validation of Simulation Models	4
9. Output Data Analysis	6
10. Optimization of Simulation Models	3
11. Manufacturing System Simulation	5

Textbook and Other Required Materials or Equipment:

Simulation Modeling and Analysis with Arena, By Tayfur Altioek (Author), Benjamin Melamed (Author)

Simulation Modeling and Analysis, By Averill M Law (Author), W David Kelton (Author)

IM405 Innovation for a Lean Enterprise

Department: Polytechnic Studies
Title of Course: Innovation for a Lean Enterprise

Course No.: IM405
Revision: New

Catalog Description and Credit Hours of Course:

A variety of topics will be covered related to modern operational strategies to achieve the lean enterprise. These include: Pull System, Kanban, Kaizen, Value Stream Mapping, Cost Reduction, Area Allocation, Facilities Layout, Inventory Control, Logistics, Just-in-time delivery, Lean Supply Chain. (3 credit hours)

Prerequisites: IM313 or IM302

Purposes of the Course:

This class will provide students with basic concepts of lean principle and how to apply them. Upon completion of the course students will be able to optimize operation processes by modeling and advanced planning, improve productivity and quality, eliminate bottlenecks and waste, advance material flow and information flow, and reduce work-in-process and lead time.

Student Learning Outcomes:

1. Students will be able to demonstrate creativity and critical thinking in the design of systems, components, or processes to meet desired technical, production, safety, or management criteria.
2. Students will be able to identify, analyze and apply principles and tools of science, technology, engineering, and mathematics (STEM) to systematically solve discipline related problems.
3. Students will be able to conduct experiments, analyze data, interpret and apply results to solve problems related to optimizing systems and processes.

Course Content or Outline:

Week	Topics/Activity
1	Introduction to Push/Pull System
2	5S
3	Kanban, JIT
4	Kanban, JIT
5	Value Stream Mapping and Cost Reduction
6	Value Stream Mapping and Cost Reduction
7	Flow Analysis
8	Flow Analysis/Mid-term
9	Logistics
10	Logistics
11	Area Allocation
12	Area Allocation
13	Inventory
14	Inventory
15	Lean Supply Chain
16	Lean Supply Chain
17	Final

Textbook(s) and/or Other Required Materials or Equipment:

"Introduction to Operations Research," by Fredrick S. Hiller and Gerald J. Lieberman 9th edition, Copyright 2010 (ISBN 0073376299, publisher: McGraw-Hill).