

## ATTACHMENT 1

### **BASIC PROGRAM INFORMATION:**

**Proposing Institution:** Kansas State University

**Title of Proposed Program:** Professional Master of Technology

**Anticipated Date of Implementation:** Fall 2011

**Responsible Departments:** Department of Aviation, Department of Engineering Technology, and the Department of Arts, Sciences and Business

**Center for Education Statistics (CIP) code** associated with the program: 15.9999

### **PROGRAM PROPOSAL NARRATIVE**

#### **1. PROGRAM NEED AND STUDENT CHARACTERISTICS**

1.1. Is the program central to the mission of the institution?

Kansas State University's Professional Master of Technology Degree is designed to allow professionals in technology to thrive in today's rapidly changing work environment. The program will offer a professional degree that emphasizes the teaching of soft skills, alongside the hard skills appropriate to the technical requirements of the workplace. K-State's institutional mission reflects the University's commitment to developing "human potential, expanding knowledge, enriching cultural expression, and extending its expertise to individuals, business, education, and government. These responsibilities are addressed through an array of undergraduate and graduate degree programs... to prepare students for successful employment or advanced studies through a variety of disciplinary and professional degree programs... Kansas State University prepares its students to be informed, productive, and responsible citizens who participate actively in advancing cultural, educational, economic, scientific, and socio-political undertakings." We believe that the proposed Professional Master of Technology (PMT) degree is completely compatible with the mission of the University.

As a professional program, the Professional Master of Technology Degree will by definition provide advanced skills and knowledge in the areas of communication, leadership, project management, and teamwork. It will also provide unique opportunities for students to arrange programs with emphasis in the broad areas of aviation, engineering technology, and technology management. Qualified faculty representing all three departments (Art, Science, and Business; Aviation; and Engineering Technology) within the College of Technology and Aviation (COTA) will cooperate to create highly individualized plans of study for each graduate student.

Filling a niche as the only professional master's degree for technology professionals in the State of Kansas, the program has the potential to attract qualified college graduates and industry personnel from a variety of backgrounds, both regionally and nationally. In addition to creating advancement opportunities for all bachelor's degree holders from the K-State College of Technology and Aviation (COTA), this program will also enhance the College's applied research capabilities and lead to an intensified collaboration with regional industry.

## 1.2. What is the student demand for the program?

Prospective student demand for the program was assessed through two instruments, a current student survey and an alumni survey (Both surveys were offered in Oct-Nov 2009). The current student survey was responded to by 118 students from a total of 632 (Note the survey was sent to all current students, but 11 Freshmen students were not allowed to respond beyond three questions designed to identify class status and major; 12 students did not finish the survey). Among Seniors and Juniors who responded after reading a brief description of the proposed program, reactions were as follows:

- 77 out of 95 respondents agreed or strongly agreed that the PMT degree was of interest to them.
- 82 out of 95 respondents would be interested in pursuing the PMT degree at K-State Salina.
- 60 out of 95 respondents expressed an interest in obtaining a PMT degree within the next 1-3 year timeframe. Additionally, 17 others expressed an interest in obtaining the PMT degree sometime in the future after 3 years.

The alumni survey (76 out of 337 started the survey 2 opted out and 2 quit before finishing), summarized below, indicate that our program meets with the approval of a substantial portion of the alumni respondents (the survey was conducted via email and a significant percentage of the addresses were out-of-date).

- 54 out of 69 respondents agreed or strongly agreed that the PMT degree was of interest to them.
- 53 out of 69 respondents would be interested in pursuing the PMT degree at K-State Salina.
- 40 out of 69 respondents expressed an interest in obtaining a PMT degree within the next 1-3 year timeframe. Additionally, 6 others expressed an interest in obtaining the PMT degree sometime in the future, after 3 years.

Estimated enrollment, sustainability of enrollment, and impact of current economic solution:

The results obtained from both surveys seem to indicate that a majority of the respondents in each case would be interested in pursuing our Professional Master of Technology degree.

That 100 respondents have indicated an interest to pursue the PMT degree within a 1-3 year timeframe is very encouraging, in fact our program becomes viable assuming only 22 of the respondents finish their PMT degree within the first four years (see section on cost analysis).

We believe the following is a conservative estimate of the numbers we are likely to see in the first five years,

	First Year	Second Year	Third Year	Fourth Year	Fifth Year
Full-time Students	5	7	9	11	11
Part-time Students	5	10	12	14	14
Assumed Number of Graduates	0	5	7	10	12

The current economic conditions will also help enrollment as increased competition in job markets make advanced degrees more attractive. Concerning the sustainability of enrollment, we will have five more years of graduates adding to the pool of possible PMT degree seekers in the next five years and this factor alone would make the program sustainable (2009 survey also shows 63% (60 out of

95) students expressed an interest in pursuing the PMT degree in a 1-3 year timeframe). Also as the program matures, we expect to see international students adding to our numbers.

### 1.3. What is the demand for the graduates?

The PMT degree is somewhat similar to the Professional Science Master's (PSM) programs from a curricular standpoint; PSM requires coursework that teaches students disciplinary and extra-disciplinary material and skills that they need for successful careers (Professional Master's Education, Council of Graduate Schools, page-14). Moreover, the extra-disciplinary material, which includes components (such as: business, ethics, teamwork, communication etc.) is almost identical. The difference between the two degrees lies mainly in the disciplinary focus, PMT programs are designed for Bachelor of Technology graduates while PSM's are mostly for Bachelor of Science graduates.

Based on the similarities in the curricular design, there should be comparable demand for PMT graduates as there is for PSM programs; as an indication of its success, PSM degrees have grown in the number of programs from 73 in 2004 -Professional Master's Education, Council of Graduate Schools, pg-23) to approximately 150 in 2009 (<http://www.sciencemasters.com/PSMOverview/tabid/57/Default.aspx>).

While the success of PSM programs is encouraging, we believe that the demand for PMT graduates stands on its own based on the documentation to follow. Our documentation for establishing the demand consists of two components,

- Survey results from industrial advisory members (nearly all of whom employ our graduates);
- Letters of support from industry;

We will complete our discussion over demand by providing the quoting some industry supporters and providing a list of potential employers who regularly recruit from our programs; both groups are well placed to hire our PMT graduates.

#### Survey Results:

Our industrial advisory committee (IAC) members represent many global, national, and local companies that are very representative of employers throughout Kansas and the nation. A total of 25 out of 74 IAC members started this survey and 23 individuals completed it. The following results seem to indicate that the PMT graduates could find favor with employers who regularly hire our graduates. COTA IAC survey results show that 60% (15 out of 25 responding) agree or strongly agree that employees holding a graduate degree are valuable assets for their short-term growth; 76% (19 out of 25) agree or strongly agree that industrial advisors believe that Grad degrees are important for long-term growth. Most importantly, 65% (15 out of 23 responding) agree or strongly agree that their companies would be interested in hiring graduates of our PMT program. 91% (21 out of 23 responding) felt that their companies would be supportive of individuals pursuing an online PMT program; 55% (12 out of 22 responding) agree or strongly agree that their companies would financially support individuals who pursue an online PMT program.

The IAC input is significant, because the members represent Kansas companies that employ our graduates, and among them, possess a great deal of industrial experience (more than 80% average 20+ years). Advisory members tend to be cognizant of the current and future directions of many Kansas companies in an increasingly global economy.

Letters of Support:

We have also obtained several letters of support from employers of our graduates who support the PMT degree initiative. Here are some excerpts (copies of these letters can be found in appendix C),

*“I think you have a very forward-looking program which allows students to focus on the leadership/management aspects of their career in addition to the technical aspects. Quality companies should definitely appreciate and understand the need for the well-round aspects of your program.”*

**Darian L. Bebout,**  
B-52 EHF Program Manager,  
Boeing - Integrated Defense Systems – Wichita

*“As an employer of a large number of technically trained people, I see graduates of this program as being in high demand in the job market. I also believe many companies, like Cessna, will encourage existing employees to enhance their skill level by earning this degree....”*

**Michael J. Pierce,**  
Manager,  
Product Marketing,  
Cessna Aircraft Company

*“As a representative of a company that can see the benefit of this type of program from both a business and a community point of view, I would like to express my excitement and support for this endeavor.”*

**Doug Oliphant,**  
Vice President,  
KSolutions

*“As our company promotes from within, this may also present opportunities for leadership training for our existing employees looking for advancement. K-State Salina already has a reputation for turning out graduates with excellent technical expertise. The addition of a Master’s degree that teaches “soft” as well as hard skills will make K-State Salina Program much more competitive.”*

**Kevin Miesbach,**  
Avionics/Instrument Shop Manager,  
Duncan Aviation

*“The PMT program would provide a means for students and professionals to build these skills in a focused and respected environment. For those companies that value these skills, but do not have the resources to provide in-house education, the PMT program would allow a means for them to further develop their professionals.”*

**Lisa L. Atcheson**  
Learning Solutions & Services Sr. Manager  
Spirit AeroSystems, Inc.

List of Potential Employers:

The following companies have hired COTA graduates and are potential employers of PMT graduates.

<u>Potential Employer</u>	<u>Local (SALINA,KS)</u>	<u>In-state</u>	<u>Out of State</u>
ABB Automation Inc			X
America West			X
American			X
American Eagle		X	X
APAC-Kansas, Inc.		X	
Automation Engineering	X		
Ballou Construction Co., Inc.	X		
Bergkamp, Inc.	X		
Black & Veatch Corporation		X	X
Blue Beacon International		X	X
Boeing, Integrated Defense Systems		X	X
Boeing, Commercial Airplane Group			X
Busboom & Rauh	X		
Cessna		X	X
Continental Express			X
DST Systems, Inc.		X	X
Duncan aviation			X
EDS			X
Federal Home Loan Bank		X	
Fidelity National Information Services		X	X
Garmin		X	
Hall Brothers, INC		X	
Harbin Construction, LLC	X		
Hawker Beech	X	X	
Honeywell		X	X
Hyspeco		X	
John Deere		X	X

Kansas Department of Transportation		X	
Kansas State University	X	X	
KASA Industrial Controls	X		
Midland Radio Corporation			X
Nation Pizza Products			X
Natural Resources Conservation Service		X	X
Premier Pneumatics, Inc.	X		
Smoky Hill Construction		X	
Southwest			X
Spirit AeroSystems Inc.		X	
Sprint Nextel		X	X
The Bradbury Co Inc		X	
United			X
Vanguard			X
Via-Christi Health System		X	
Web Creations & Consulting LLC	X		
Western Resources		X	
Westar Energy	X	X	
Wolfcreek Nuclear Operations		X	
Yingling Aviation		X	

#### 1.4. What are the locational and comparative advantages of this program?

##### Similar programs in other institutions in the Regents system:

The Professional Master of Technology (PMT) degree seems to have uniqueness in its name and its design; the PMT degree has a common core with a minimum requirement of 19 credits. Students will develop advanced technical writing skills, project management skills, leadership skills, global skills, and other personal and interpersonal skills through an assigned set of courses and a mandatory capstone experience. Students in our PMT program will expand technical knowledge and applied research skills through a combination of the required capstone experience and advanced elective coursework. Among the Regents schools, the program that comes closest to our curriculum is Pittsburgh State University's (PSU) Master of Science with a Major in Technology degree's non-thesis option (Option II). PSU's MS in Technology option does not require a capstone experience which is a cornerstone for a professional master's program like the PMT. Another Regent's program that is in some ways similar to the PMT is the Professional Science Master's (PSM) program at Fort Hays State University (FHSU). FHSU's PSM degree admits students who hold an applied science Bachelor's degree in one of their concentration areas (or a related area). The PMT degree does not have concentrations but is able to provide 9-11 credits of elective emphasis. PMT will admit students who hold Bachelor's degrees in engineering technology, aviation, technology management (or a related area).

##### Program Location:

The Professional Master of Technology program will have the advantage of being located in a growing industrial town only 90 miles from the large industrial base of Wichita, Kansas. Our two main target populations consist of COTA graduates and other technology professionals in the area who seek a professional degrees. This degree emphasizes the teaching of soft skills, along with the hard skills that focus on the technical requirements of the workplace and is therefore more student-centered from the perspective of aforementioned target groups. The idea of the professional degree, while relatively new, has emerged as a popular post-graduate alternative to a standard Master of Science (MS) Degree. K-State at Salina educators, industry representatives and alumni have a long term vested interest in the actualization of this program. The program aligns COTA resources to support the educational aspirations and career pathways of many Kansas citizens.

Our degree will also benefit in multiple ways from the strong ties that bind the College of Technology and Aviation with its industrial partners. Industry relationships will help us with ideas for real-world capstone projects and provide a source of guest lecturers among other things. Our current list of industrial advisory council includes 100+ members of the largest Kansas companies and would form an excellent pool from which to draw PMT advisory board members. The survey results and letters of support presented in sections 1.1-1.3 are a strong indication of support from alumni and industry representatives.

#### 1.5. What are the characteristics of the students who will participate in this proposed program?

Principal characteristics of our students are that their career goals are industry focused and they are attempting to develop skills that will give them an edge in their occupation of choice. We expect that many of the students will be part time due to job responsibilities. We expect that the full time part time split will be almost even. It is anticipated that many of our recruits will come from COTA

graduates, from one of its three departments provided they meet minimum admission criteria and recommendations of the admissions committee. As a minimum criteria we will require 3.0 or higher in the last 60 credits of formal coursework and three months of industry experience. Industry experience may be waived for students who plan to complete an internship while in the program. Graduates from other Colleges will also be able to apply to the program provided they satisfy the following criteria,

- a. Have a B.S. degree in the area of Engineering Technology; Professional Pilot; Aviation Maintenance; Technology Management; or a closely related field.
- b. 3.0 or higher in the last 60 credits of formal coursework.
- c. Have a minimum of three months of industry experience at the time of admission (this criterion can be waived for students who plan to complete an internship requirement).
- d. International students will need to meet English requirements set by the Graduate School. The following statement regarding English requirements have been taken from the Graduate Handbook.

“All international students admitted to the Graduate School must demonstrate the same level of achievement as U.S. students. That is, they must hold a degree from an established institution comparable to a college or university in the United States, have an outstanding undergraduate record, have the demonstrated ability to do graduate work, and provide evidence of language proficiency sufficient for the pursuit of a graduate degree. Admission may be denied to students from technical schools, which may provide excellent training in special areas, but do not offer degrees equivalent to those of colleges and universities. As a rule, students from abroad are not admitted to nondegree status (that is, as special students). Questions about the qualifications of international students should be directed to the Graduate School.

The Graduate School requires each international applicant whose native language is not English to demonstrate competence in the English language by achieving a satisfactory score (defined below) on the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). The TOEFL or IELTS is required to ensure that the student’s progress toward a degree is not jeopardized by language barriers. The TOEFL (K-State TOEFL school code 6334) is offered several times a year throughout the world by the Educational Testing Service, Princeton, New Jersey. International applicants are advised to take the TOEFL as early as possible to avoid delays in the processing of their applications for admission. An applicant who has received a degree in the last two years from a United States college or university is exempt from this requirement. However, individual programs may require demonstration of English language proficiency.

Applicants who are submitting a TOEFL iBT (internet based) score must have a minimum of 79 to be considered for admission to a graduate program. Applicants with part scores of less than 20 on any one of the reading, writing, or listening sections may be considered for provisional admission and required to take the English Proficiency Test (EPT) prior to enrolling in their first semester. Applicants will be required to enroll in the designated course(s) based on EPT scores and the recommendation of the K-State English Language Program.

Applicants who are submitting a TOEFL paper-based test score must have a minimum



of 550 to be considered for admission to a graduate program. Applicants with scores 550 through 599 may be admitted provisionally and must take the EPT prior to enrolling in their first semester. Applicants will be required to enroll in designated course(s) based on EPT scores and the recommendation of the K-State English Language Program. TOEFL scores are valid for two years from the test date.

Some programs require a TOEFL score higher than the Graduate School minimum. Those who do not meet the program's minimum proficiency standard may be recommended for enrollment in University English courses or for part-time English courses offered by the K-State English Language Program.

Applicants who are submitting an IELTS score must have a minimum of 6.1 to be considered for admission to a graduate program. Applicants with a score 6.1 through 6.9 may be admitted provisionally and must take the EPT prior to enrolling in their first semester. Applicants will be required to enroll in designated course(s) based on EPT scores and the recommendation of the K-State English Language Program. Those who do not meet the minimum proficiency standard may be recommended for enrollment in University English courses or for part-time English courses offered by the K-State English Language Program. IELTS scores are valid for two years from the test date.”

## 2. CURRICULUM

The “common core” curriculum is designed to help students develop advanced skills in the areas of communication, leadership, project management, and teamwork. Students in the Professional Master of Technology program will expand technical knowledge and applied research skills through a required capstone experience and advanced elective coursework. The program is also expected to be delivered in a hybrid format with a significant number of its courses presented in an online or distance format.

The Graduate Task Force from the College of Technology and Aviation (COTA) has continued to seek input from its Industrial Advisory Committee (IAC) members (a superset of the graduate advisory board) throughout the development phases of the Professional Master of Technology (PMT) degree. In April of 2008 IAC members received PMT curriculum related material for the first time. During this visit IAC members had the opportunity to provide valuable input. The general consensus formed through various formal and informal discussions indicates that this design has been well received by IAC members. Since then, members have been kept apprised of program developments at key junctures, allowing sufficient opportunity for them to provide input through face to face conversations, emails, and surveys.

The appropriateness of the curriculum for the program also has been evaluated by studying the results of two surveys, one that targets all COTA Industrial Advisory Committee (IAC) Members, and another that targets COTA Alumni. Table 1 has been constructed from industrial advisory member responses to our main program themes and shows the level of importance associated with each. The table seems to indicate good thematic convergence between our program design and IAC input.

TABLE 1. Value Associated with Major Themes (Industrial Advisory Committee Response based on 2009 Survey )	
Major themes associated with the PMT Degree	Percentage of those <u>responding</u> who agreed or strongly agreed that these skills are beneficial to their company
Management Skills	96%(22 out of 23 responding)
Applied Research Skills	74%(17 out of 23 responding)
Diversity in the Workplace	61%(14 out of 23 responding)
Quality Assurance Skills	74%(17 out of 23 responding)
Leadership Skills	96%(22 out of 23 responding)
Engineering/Technical Skills	70%(16 out of 23 responding)

Previously we made use of alumni survey data for the purpose of demonstrating student demand. We think some of this data can be used to establish demand for graduates as well, for the following reasons,

1. 82% of those responding are currently employed in the engineering, technology, or aviation field;
2. More than 46% of the those completing the survey had more than five years of experience;
3. About 88.2% of those completing the survey had more than 2 years of experience and would be in the workforce for many more years.

Alumni responses to our major themes can be seen in Table 2. Fig. 1 shows how Alumni responses closely follow IAC responses. Table 3 lists the core courses and electives of the program. It should be noted that a 15% difference exists in the responses for “Leadership Skills”. While both groups value this highly (> 80%), the more experienced Industrial Advisory Council members seem to value this more. The other themes match up fairly well.

Major themes associated with the PMT Degree	Percentage of those <u>responding</u> who thought that this had some <u>importance</u> or was <u>very important to the workplace</u>
Management Skills	85.2%(52 out of 61 responding)
Applied Research Skills	70.5%(43 out of 61 responding)
Diversity in the Workplace	54%(33 out of 61 responding)
Quality Assurance Skills	82%(50 out of 61 responding)
Leadership Skills	80.4%(49 out of 61)
Engineering/Technical Skills	78.7%(48 out of 61)

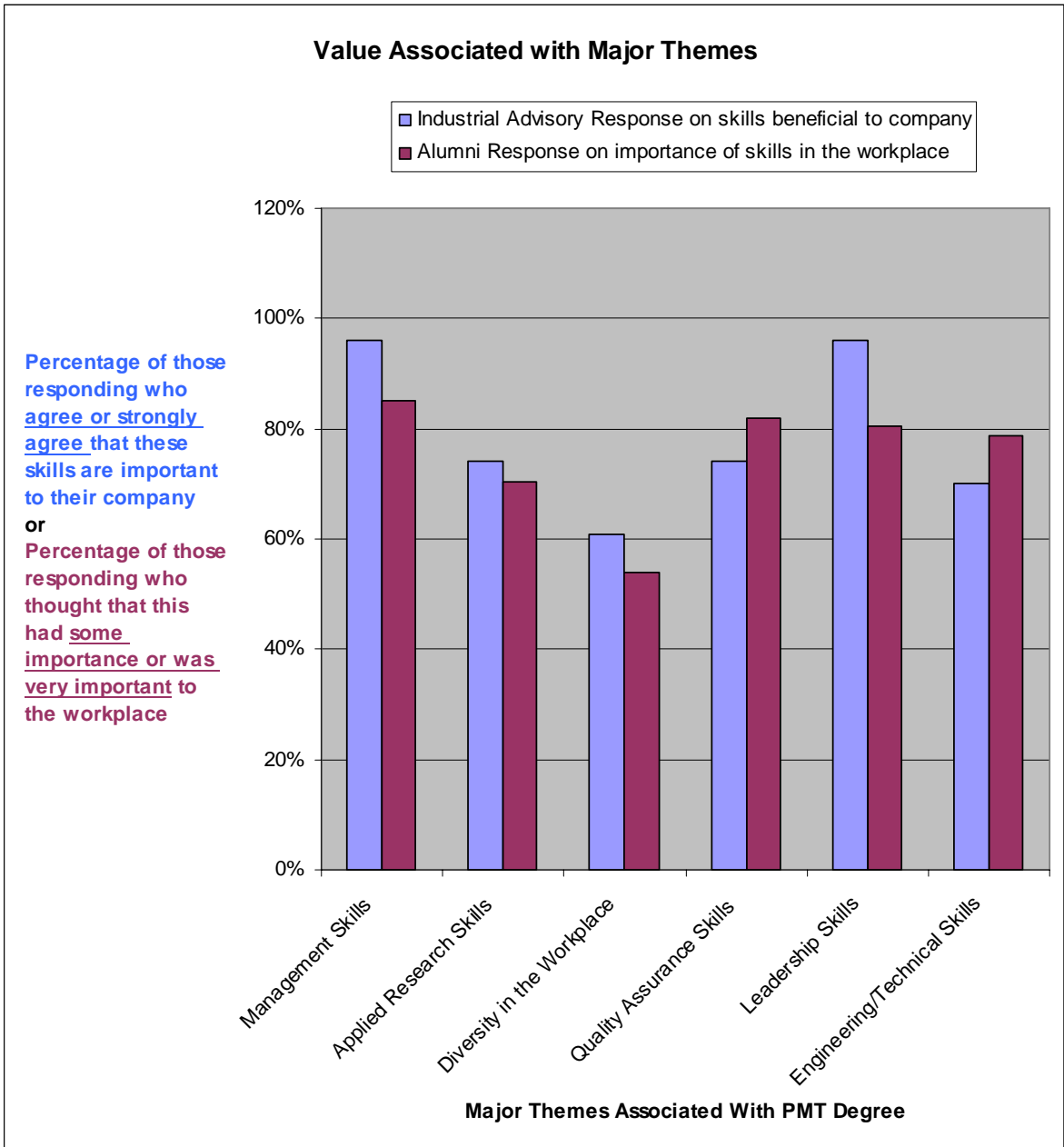


Fig. 1. Graphical view of alumni (maroon) and IAC (blue) responses to program themes

**Kansas State University at Salina**  
**Professional Master of Technology Program**  
(30 credit hours required)

**Required “Common Core” Courses** (minimum 19 credit hours):

COT 701 Advanced Technical Communication (3)  
COT 702 Applied Research Skills and Methods (3)  
STAT 703 Statistical Methods for Natural Sciences (3)  
MANGT 810 Operations Management and Analysis (3)  
MANGT 820 Behavioral Management Theory (3)  
COT 781 Capstone Experience for Professional Master of Technology (4-6)

**Electives:**

COT 632 RF Technology (3)  
COT 650 Analytical and Computational Tools for Engineering Technology (3)  
COT 661 Airport Planning and Management (3)  
COT 713 Advanced Aviation Safety Management (3)  
COT 720 Application of Lean Six Sigma Methods (3)  
COT 721 Reliability Centered Maintenance of Plant Equipment (3)  
COT 731 Applied Electromagnetics (3)  
COT 792 Problems in Master of Technology (var. 1-3)  
COT 799 Special Topics in Professional Master of Technology (var. 1-3)  
ECON 640 Industrial Organization and Public Policy (3)  
IMSE 680 Quantitative Problem Solving Techniques (3)  
Other approved courses

**Student Learning Outcomes:**

The program student learning outcomes (SLOs) are provided below (Table 4). These outcomes will be rigorously assessed (as discussed later in the assessment section) to ensure the quality of the program (discussed later in the assessment section). A mapping of our SLOs to Kansas State University’s Graduate SLO can be seen

<b>Table 4. Student Learning Outcomes for Professional Master of Technology</b>
<b>SLO 1</b> Demonstrate ability to apply project management techniques to the workplace.
<b>SLO 2</b> Demonstrate ability to perform self-directed inquiry, experimentation, and design in one’s emphasis area.
<b>SLO 3</b> Demonstrate ability to apply skills and knowledge in one’s emphasis area.
<b>SLO 4</b> Demonstrate ability to write clear and effective technical reports, proposals, presentations, and business correspondence.
<b>SLO 5</b> Demonstrate ability to orally communicate technical information to a variety of audiences.
<b>SLO 6</b> Demonstrate understanding of relevant professional ethics and social responsibility.

<b>Table 5. Mapping of K-State SLO with Professional Master of Technology SLO</b>						
K-State Graduate SLOs	Professional Master of Technology SLO					
	SLO1	SLO2	SLO3	SLO4	SLO5	SLO6
<b>Knowledge:</b> Demonstrate thorough understanding and/or competency in a specific area of emphasis, study, or profession.	√	√	√	√	√	√
<b>Skills:</b> Demonstrate the ability to apply knowledge through critical thinking, inquiry, analysis, and communication to solve problems and to produce scholarly and creative works including but not limited to design, art, performance, original research in the form of thesis or dissertation.	√	√	√	√	√	
<b>Attitudes and Professional Conduct:</b> Exhibit an awareness of their responsibilities (professional integrity, ethical behavior, ability to work with diverse groups of peoples, etc.) and engage in professional conduct towards all constituent groups, including students, faculty, public, etc.		√			√	√

## **Core Courses in the Curriculum:**

The core course descriptions are provided below, the entire list of new course descriptions available in appendix A.

### **COT 701 - Advanced Technical Communication**

Intensive writing practice, applying rhetorical principles to a number of genres common to non-academic professions and workplaces, including oral presentations. Introduction to allied topics such as document design and editing, and crafting technical presentations. Application of global information literacy and research methods will culminate in the preparation of a master's project proposal.

### **COT 702 - Applied Research Skills and Methods**

Survey of qualitative and quantitative research methods; use of a range of tools to develop applied research skills focusing on literature reviews. Examines applied research concepts, methods, and skills to foster enlightened decision making in professional practice.

### **STAT 703 - Statistical Methods for Natural Scientists**

Statistical concepts and methods basic to experimental research in the natural sciences; hypothetical populations; estimation of parameters; confidence intervals; parametric and nonparametric tests of hypotheses; linear regression; correlation; one-way analysis of variance; t-test; chi-square test. Pr.: Junior standing and equiv. of college algebra.

### **MANGT 810 - Operations Management and Analysis**

The study of the role of operations systems in the provision of value for the customer. Operations systems design, capacity determination, resource requirements planning and control, theory of constraints, supply chain management, quality management and control and project management are discussed and analyzed.

### **MANGT 820 - Behavioral Management Theory**

An in-depth analysis of the development of the behavioral bases of individual and group behavior in business, governmental, educational, and other organizations with emphasis on current research literature and applications.

## COT 781 Capstone Experience in Professional Master of Technology

Students formulate, research and execute a project for industry partners to gain hands-on experience under expert guidance while integrating knowledge to solve complex problems. Students write a convincing proposal for a capstone experience, gather and analyze data, draw conclusions and present results. Teams of first- and second-year students may form to work on real-world projects. May be repeated up to three semesters, up to a total of six credit hours.

### Sequence for full-time students

The following table shows the sequence for a full-time student. Note full-time student can choose to finish their program of study either in the Fall or Spring of their second year (Spring completion requiring them to be part-time for one semester).

Full-time Student Sequence				
Fall Year 1	Spring Year 1	Summer Year 1	Fall Year 2	Spring Year 2
COT 701 Advanced Technical Communications	COT 702 Applied Research Skills and Methods		MANGT 810 Operations Management and Analysis	Elective
Elective	STAT 703 Statistical Methods for Natural Sciences		MANGT 820 Behavioral Management Theory	COT 781 Capstone Experience for Professional Master of Technology (var
Elective	Elective	PICK ONE OR BOTH	COT 781 Capstone Experience for Professional Master of Technology (var credit)	Elective
	COT 781 Capstone Experience for Professional Master of Technology (var credit)		COT 781 Capstone Experience for Professional Master of Technology (var credit)	
9 credits	9-12 credits	0-3 credits	9 credits	0-9 credits



**Sequence for part-time students**

The following schedule allows part-time students to graduate in either the Fall or Spring of their 5<sup>th</sup> year.

PART-TIME SCHEDULE			
	Fall	Spring	Summer
Year 1	COT 701 Advanced Technical Communications	COT 702 Applied Research Skills and Methods	
Year 2	Elective	STAT 703 Statistical Methods for Natural Sciences	
Year 3	Elective	MANGT 810 Operations Management and Analysis	
Year 4	Elective	MANGT 820 Behavioral Management Theory	COT 781 Capstone Experience for Professional Master of Technology (var credit)
Year 5	COT 781 Capstone Experience for Professional Master of Technology (var credit)	COT 781 Capstone Experience for Professional Master of Technology (var credit)	
	15 Credits	12-15 Credits	0-3 Credits

### 3. PROGRAM FACULTY

#### 3.1. What is the quality of the faculty?

The Professional Master of Technology Degree will benefit from the combined expertise of eight graduate faculty with terminal degrees. Together, the program faculty will be responsible for teaching, advising and supervision. Selected program faculty will also be designated coordinator roles in admissions, assessment, program review, and accreditation.

Name of Program Faculty with Terminal Degree	Rank	Terminal Degree Area	Other Teaching Area	Core Faculty	Graduate Faculty Member	PMT Courses
1. Kenneth Barnard	Professor	Education	Aviation		√	COT 713, COT 661
2. Raju Dandu	Professor	Mechanical Engineering	Engineering Technology		√	COT 720, COT 721
3. Don Von Bergen	Professor	Geology	Arts, Sciences, and Business		√	<b>COT 781</b>
4. Jung Oh	Professor	Chemistry	Arts, Sciences and Business		√	<b>COT 702</b>
5. Patricia Ackerman	Associate Professor	Education	Arts, Sciences, and Business		√	<b>COT 781</b> <b>COT 701</b>
6. Rick Zajac	Professor	Physics	Arts, Sciences and Business		√	COT 650,
7. Saeed Khan	Associate Professor	Electrical Engineering	Engineering Technology	√	√	COT 632, COT 731
8. Frederick Guzek	Associate Professor	Buisness	Arts, Sciences and Business	√	√	<b>COT 781</b>
9. Judith Collins	Associate Professor	English	Arts, Sciences and Business		In process	<b>COT 701</b>
10. James J. Higgins	Professor	Statistics	Statistics		√	<b>STAT 703</b>
11. Schwin Sheu	Professor	Management	Management		√	<b>MANGT 810</b>
12. Brian Niehoff	Professor	Management	Management		√	<b>MANGT 820</b>

**Bolded courses are in the core**

CVs of K-State Salina Faculty will be appearing in the Appendix B.

#### Faculty Motivation:

As stated previously, the primary motivating factors for offering the new degree include creating advanced degree opportunities for all COTA graduates, meeting the workforce needs of local industry, and enhancing the College's applied research capabilities; however, in order to keep the faculty motivated, the following accommodations will be made for their participation in the graduate program,

1. Graduate faculty will be relieved of equivalent undergraduate teaching responsibility when teaching graduate-level courses.
2. In terms of teaching load calculations, one semester credit hour of graduate instruction is equal to one and one-half semester credit hours of undergraduate lecture instruction.

3. Supervision of graduate students enrolled in the professional master's degree program is provided workload credit *only* to the *chairperson* of the graduate committee. One semester hour of teaching load credit will be given for every six credit hours of graduate coursework completed by the graduate students the committee chairperson supervises (this is for being the Major Professor regardless of the courses that their advisees take). An individual graduate faculty member, who serves as a Major Professor, can receive a maximum of three credit hours of teaching workload credit for supervision of each individual graduate student for which they have been assigned chairperson.

### 3.2 How many graduate assistants will serve the program?

Graduate assistants may be hired to help with research and teaching. Any hiring will be contingent on external funding or undergraduate teaching support openings.

## **4. ACADEMIC SUPPORT**

### 4.1. What are the academic support services for this program?

#### **Media Services**

The K-State at Salina Media Services provides instructional equipment, equipment training and media service consulting for COTA instructors. Media services are also available to coordinate training and facilitation for online courses.

#### **Writing Center**

The K-State at Salina Writing Center provides one-on-one writing instruction to faculty, staff, and students across all disciplines and should also be able to provide support to graduate students. Trained peer tutors assist students with all phases of the writing process, including development, writing, organization, and editing. Writing Center tutors are also cross-trained with Career Services to assist students with the development and writing of professional resumes and cover letters. The Writing Center is currently considering options to help online students such as dialoguing with users over web based systems.

#### **Office of Student Life**

The Office of Student Life provides leadership opportunities and development. It will oversee all PMT student club and activities. The Office of Student Life also provides classes in leadership development.

#### **Office of Career Services**

The Office of Career Services provides assistance in job placement and provides counseling in choosing a career, developing a resume, and practicing interview techniques. Career Services coordinates interviews with employers seeking job applicants and coordinates the campus' career fair each spring.

#### **Continuing Education**

The Division of Continuing Education offers workshops, seminars, and short-term and full-term courses in the fields of technology. Special courses can be designed to meet the needs of individuals, groups, and organizations. These services can be provided on campus, in-plant, or in communities where technical services are needed but not readily available. Continuing education units may be granted in appropriate cases.

#### **K-State Online**

K-State Online, an Internet based learning management system, transforms the everyday classroom into interactive web sessions for K-State's on-campus and distance education communities. It extends and enhances K-State course instruction, enabling students with time and geographic restrictions to take advantage of the flexibility of learning over the Internet.

#### **K-State at Salina Library**

K-State at Salina students have access to 188 electronic databases that span multiple disciplines. These databases provide access to 2,312 electronic journals in engineering and aviation; 3,544 electronic journals in business, economy, and management; and 709 electronic journals in mathematical sciences.

At the request of Department of Aviation, the library spent  $\frac{1}{4}$  of our annual collection budget in FY2009 to build up resources in aviation safety and management. In FY2009, the library spent

approximately \$500 on materials focusing on Lean Six Sigma Methods. The K-State at Salina Library will commit to spending ½ of its FY2010 (estimated \$7,000 - \$10,000) collection budget to filling gaps in the collection needed to support the Professional Master of Technology Program. This will support the addition of approximately 80 – 120 new resources in the library's collection. Library staff will examine course syllabi and work with the graduate faculty to build the physical collection in the areas of RF technology, applied research skills and methods, management, plant equipment, and applied electromagnetics. New material will be purchased in both print and electronic book formats. Additional new resources will continue to be funded by a 3% SRO set aside for the library.

The current library facility is physically limited in its ability to grow the print collection. Thus, the library will increase our reliance on Hale Library for advanced material. The library is in the process of working out an agreement for shared collections, which will improve Salina students' ability to access and borrow Hale Library's material. Graduate students will receive requested materials from Hale Library within 24 hours.

The library will work with engineering technology faculty over the next academic year to remove outdated materials from the collection in order to free up shelf space for new acquisitions. There is a significant amount of outdated reference materials (handbooks, standards, etc.) that are no longer printed and can now be located online. Library staff will collaborate with ET faculty to create an online information guide for this information to ensure access to current information is readily available.

Graduate students will be extended the same borrowing privileges as faculty: 120 day check out for books and 30 days for videos.

4.2. What new library materials and other forms of academic support are required beyond normal additions?

A future need is advanced training of current library reference and instruction staff in order to sufficiently be able to provide the necessary services to graduate students. The current library services are successful, but they are largely geared toward undergraduates. Reference services for graduate programs require professional knowledge in the field of training.

4.3. What new supporting staff will be required beyond normal additions?

No new staff requirements are anticipated in the short run.

## 5. FACILITIES AND EQUIPMENT

Almost all the classrooms in the College of Technology and Aviation are media friendly. COTA also has the capability of delivering distance education both synchronously and asynchronously using a variety of formats using web tools, A/V, TELNET and other methods. While all courses offered by the program can benefit from the previously listed resources, the courses which require lab facilities have been tabulated below.

Course Number and Name	Special Equipment Needs	Equipment Available	Lab where equipment is located
COT 632 RF Technology	Network Analyzer, Spectrum Analyzer, and assorted test equipment	yes	Instrumentation Lab
COT 731 Applied Electromagnetics	Network Analyzer, Spectrum Analyzer, and assorted test equipment	yes	Instrumentation Lab
COT 781 Capstone Experience in Professional Master of Technology	Variable	Projects needing equipment can be designed based on resources at hand or using grant money when applicable	Various lab facilities around COTA campus

To summarize,

- a. No new facilities anticipated;
- b. No new technology needs for instructional support anticipated;
- c. The K-State at Salina Library will commit to spending ½ of its FY2010 (estimated \$7,000 - \$10,000) collection budget to fill gaps in the collection needed to support the Professional Master of Technology Program.

## 6. PROGRAM REVIEW, ASSESSMENT AND ACCREDITATION

### 6.1. What program review process or evaluation methods will be used to review the program?

The program review process will be conducted through internal reviews, graduate mid-cycle reviews, and Full BOR reviews.

#### Internal Review:

Program faculty will gather once during the academic year and at the end of each year to analyze the assessment data and to discuss ways and means to improve student achievement. This data will also be shared with PMT industrial advisory committee members (see table below), employers, alumni and other constituents for their input and recommendations on improving student performance during an internal review. Although the data gathered in the first year of the two-year cycle is partial, enough coverage of outcomes is available at that stage to indentify certain program strengths and weaknesses. At the end of the second year the results of assessing the capstone experience will be available and a complete assessment of the program is possible. As shown in figure 2, an internal review cycle ends in the Spring Semester every two years and begins in the Fall Semester of the same year.

#### Graduate Mid-Cycle Review and Full BOR Review:

The anticipated BOR review schedule is shown in the figure 2. The BOR review is being scheduled to match with the similar programs and one full-cycle of interval review data will be available for the first BOR review. The first anticipated mid-cycle review will occur after three full-cycles of internal reviews are completed.

Current Makeup of Industrial Advisory Committee Members for PMT			
Member Name	Organization	Position	Location
Darian Bebout	Boeing Integrated Defense	B-52 EHF Program Manager	In-state
Doug Oliphant	KASA Industrial Controls	Vice President	Local
Chuck Jarnot	Jarnot Aerospace	President	In-state
Tim Rogers	Salina Airport Authority	Executive Director	Local
Kevin Miesbach	Duncan Aviation	Avionics Instrument Shop Manager	Out of State
John Ourada	Consultant	Consultant	Local

Note: While the above individuals have been invited to join the industrial advisory board for the PMT, this is only a subset of industry advisors who have provided input from the program.

Review Schedule							
YEAR	2012	2013	2014	2015	2016	2017	2018
Internal Review	First Internal Review begins F2011		First Internal Review Completed Spring 2013, second begins Fall 2013		Second Internal Review Completed Spring 2016, third begins Fall 2016		Third Internal Review Completed Spring 2018, forth begins Fall 2018
Graduate Mid-Cycle							First Anticipated mid-cycle
Full BOR review			First Anticipated Full BOR review				

Fig. 2 Different Reviews Showing Time Tables

6.2. What student learning outcomes and measures will be used to assess the program’s effectiveness?

**Student Learning Outcomes for the Professional Master of Technology (PMT) Degree:**

The program student learning outcomes (SLOs) are provided below (Table 6). These outcomes will be rigorously assessed (as discussed later in the assessment section) to ensure the quality of the program (discussed later in the assessment section). A mapping of our SLOs to Kansas State University’s Graduate SLO can be seen in table 8. Using our scheme all outcomes are assessed in a two-year cycle.

Table 6. Student Learning Outcomes for Professional Master of Technology
<b>SLO 1</b> Demonstrate ability to apply project management techniques to the workplace.
<b>SLO 2</b> <b>Demonstrate</b> ability to perform self-directed inquiry, experimentation, and design in one’s emphasis area.
<b>SLO 3</b> Demonstrate ability to apply skills and knowledge in one’s emphasis area.
<b>SLO 4</b> Demonstrate ability to write clear and effective technical reports, proposals, presentations, and business correspondence.
<b>SLO 5</b> Demonstrate ability to orally communicate technical information to a variety of audiences.
<b>SLO 6</b> Demonstrate understanding of relevant professional ethics and social responsibility.

**Outcomes Assessment Plan:**

All program outcomes are to be assessed within a two-year cycle. Program level assessment in this scheme is based on compiled data from course level assessment. Course level assessment data is then mapped to program level data using a procedure discussed in the section on course level assessment to follow. Table 7 lists courses within which a particular outcome can be assessed. From the table one can see that it is possible to assess more than one outcome within any single course.



**Table 7. COURSES USED TO ASSESS STUDENT LEARNING OUTCOMES OF THE PROFESSIONAL MASTER OF TECHNOLOGY DEGREE**

<b>Professional Master of Technology SLOs</b>	<b>COT 781, Certain Electives</b>	<b>COT 701, COT 702, STAT 703, COT 781, Certain Electives</b>	<b>COT 702, COT 781, Certain Electives</b>	<b>COT 701, COT 702, COT 781, Certain Electives</b>	<b>COT 701, COT 702, COT 781, Certain Electives</b>	<b>COT 781</b>
<b>SLO 1</b> Demonstrate ability to apply project management techniques to the workplace.	X					X
<b>SLO 2</b> Demonstrate ability to perform self-directed inquiry, experimentation, and design in one's emphasis area.		X				X
<b>SLO 3</b> Demonstrate ability to apply skills and knowledge in one's emphasis area.			X			X
<b>SLO 4</b> Demonstrate ability to write clear and effective technical reports, proposals, presentations, and business correspondence.				X		X
<b>SLO 5</b> Demonstrate ability to orally communicate technical information to a variety of audiences.				X		X
<b>SLO 6</b> Demonstrate understanding of relevant professional ethics and social responsibility.					X	X

## Relationship to K-State Student Learning Outcomes to K-State Graduate SLOs:

K-State Graduate SLOs	Professional Master of Technology SLOs						How and where will the learning outcomes be assessed?
	SLO1	SLO2	SLO3	SLO4	SLO5	SLO6	
<b>Knowledge:</b> Demonstrate thorough understanding and/or competency in a specific area of emphasis, study, or profession.	√	√	√	√	√	√	Student learning outcomes are to be assessed from data gathered for course level assessment
<b>Skills:</b> Demonstrate the ability to apply knowledge through critical thinking, inquiry, analysis, and communication to solve problems and to produce scholarly and creative works including but not limited to design, art, performance, original research in the form of thesis or dissertation.	√	√	√	√	√		
<b>Attitudes and Professional Conduct:</b> Exhibit an awareness of their responsibilities (professional integrity, ethical behavior, ability to work with diverse groups of peoples, etc.) and engage in professional conduct towards all constituent groups, including students, faculty, public, etc.		√			√	√	

that are subsequently mapped to program outcomes. Assessment scheme measures and guidelines are defined as follows.

### Measures to be used:

Each outcome is to be evaluated by multiple direct measures including locally developed tests, homework assignments, projects, labs, a capstone experience, portfolios, and essay questions. Anonymous student surveys of course outcomes are to be the primary source of indirect measures.

### Standards to be used:

#### Direct Assessment Guidelines

Criteria used to evaluate each outcome (unless specifically stated otherwise):

- 80% of students earn a grade equivalent to 85% or more in an assignment: **Outcome is met.** If **outcome is not met**, action is indicated regarding objective and/or criteria.
- In calculating grade averages (entire class or random selection), only grades from students who attempted the task are to be considered.

#### Indirect Assessment Guidelines

Students will be given an opportunity to provide input on how well course outcomes are covered. The degree of coverage will be scored in a 0-5 scale, 5 being the highest level of coverage. The following criteria, unless specifically stated otherwise, will be used to evaluate each objective:

- Sample average on any particular outcome **not more than 0.5 below the PMT program mean: Outcome met.**
- Sample average on any particular outcome **more than 0.5 below the PMT program mean: Outcome is not met.** Immediate action is required regarding objective and/or criteria.

### **Course Level Assessment:**

In course level assessment, instructors start by setting up course outcomes and mapping each course outcome to program outcomes that apply. The successful achievement (outcome met) or failure (outcome not met) of any course outcome will be counted as one instance of the successful achievement or failure of all program outcomes that map into this course outcome. All course outcomes will be directly assessed by the instructor through an individualized selection of assignments and grading rubrics. For indirect assessment, students will take a survey on how well they felt course outcomes have been covered. An example of how program data can be gathered from course level assessment can be seen in Table 8(a). Note how table 8(a) is being used simultaneously to assess course outcomes and program outcomes using a set of assignments used by the instructor using the standards for direct assessment laid out earlier. The last column in table 6(a) contains data can be used in program level assessment.

### **Program Assessment:**

Program level assessment is based on data gathered from the assessment of **several courses**. Every successfully or unsuccessfully “met” course outcome is seen as one instance of “outcome met” or “outcome not met” for each of the program outcomes that can map into it. The program outcome related data from all course level assessment is collated for program review. A relatively high number of failures on any program outcome may be seen as a cause for concern and need for immediate action. The following example chart (fig 3) provides an illustration of how well the programs SLOs are being achieved. This chart could be used to identify weaknesses and to carry out the process of continuous improvement. This data would also be shared with industrial advisory committee members, employers, alumni and other constituents for their input.

Table 8(a)  
An example of table for gathering assessment data at the course level  
COURSE XXXXXXXX

Material Type	Collect date	Direct Or Indirect	Satisfaction Level for Indirect (0-5)	% of students getting more than 85% grade	Material Assesses the following course outcome	PMT Program outcome areas covered	Actions Needed (None if Met)	Program Outcome Summary
Exam 1 Q. 1 & 2	March 14, 2006	direct		100%	Understanding the different components of an RF communication System	2, 3	None	<b>PMT Outcome 2 met in 5 instances and failed in 2 instances.</b>
Exam 1 Q. 3	March 14, 2006	direct		100%				
Survey	8 May 2006	indirect	3.75					
Final Exam Q. 1	Feb 2 2006	direct		60%	Design and build RF amplifiers	2,3	Do more design examples of RF amplifiers	
Survey	8 May 2006	indirect	4.25					
GPS antenna project	5 May 2006	direct		100%	Design and build an impedance matching network	2,3	None	<b>PMT Outcome 3 met in 5 instances and failed in 2 instances.</b>
Survey	8 May 2006	indirect	4.5					
GPS antenna project	5 May 2006	direct		100%	Design and build a satellite communication antenna	2,3	None	
Survey	8 May 2006	indirect	4.25					
Exam 1 Q.5		direct		80%	Understand the role of software in modern wireless design	2,3	None	
Survey	8 May 2006	indirect	4.5					
Exam 1 Q. 4		direct		100%	Understand the role of transmission lines in wireless design	2,3	None	
Survey	8 May 2006	indirect	4.25					
Final Exam Q. 2		direct		100%	Study of a complete wireless receiver	2,3	More HW and quizzes	
Survey	8 May 2006	indirect	3.5					

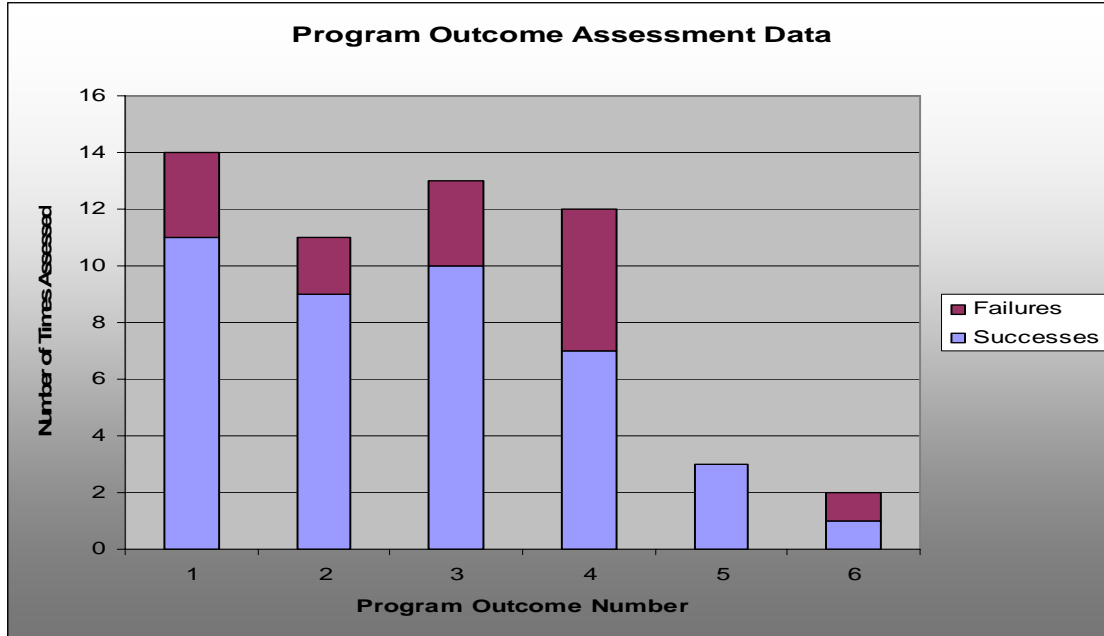


Fig 3. Sample plotted assessment data reveals weakness in outcomes 4 and 6.

**When will these outcomes be assessed?**

As previously mentioned, all SLOs will be assessed over the course of a two-year period. In table 8 (b), column 2 lists courses that are to be used to assess program outcomes. Column 3 lists the program SLOs that may be assessed from each of the courses to the left. It should be noted that with this scheme each outcome, at a minimum, is being assessed two separate times during in the degree (SLO 1 is assessed twice from the Cumulative Experience, once mid-way and once upon completion).

Table 8 (b) Assessment schedule for two-year cycle		
Year,	Courses Assessed	Program SLOs assessed from course assessment
Year 1	COT 701 Advanced Technical Communications	2, 4, 5
	COT 702 Applied Research Skills and Methods	3,6
Year 2	COT 781 Capstone Experience for Professional Master of Technology	1,2,3,4,5,6 (SLO 1 is assessed twice, once mid-way and once upon completion)

**Format for Assessment Results:**

Assessment results will be put into graphical format (as in fig. 3) for discussion leading to program improvement. Separate charts will be prepared for direct assessment and indirect assessment. The plot will provide following information,

1. Number of instances that any outcome has been assessed.
2. The number of times each outcome was successfully achieved.
3. The number of times that an outcome was unsuccessfully achieved (failures).
4. A high percentage of failures will indicate areas where attention needs to be focused.

**7. COST OF PROGRAM:**

The College and Aviation and Technology (COTA), intends to cover expenses related to the new PMT program through reallocation. Under a conservative estimate, that allows twenty-two graduates during the first four years of the program using assumptions that are more likely to overestimate cost and underestimate revenue. Based on the assumptions below we have calculated the reallocation amount for the entire program to be only about \$12,550.00/year for the first four years. The calculations were completed in using the following assumptions.

Assumptions Used in Calculation:

1. Funding for the entire program will come from reallocation of funds.
2. Graduate faculty will be relieved of equivalent undergraduate teaching responsibility when teaching graduate-level courses.
3. In terms of teaching load calculations, one semester credit hour of graduate instruction is equal to one and one-half semester credit hours of undergraduate lecture instruction.
4. Supervision of graduate students enrolled in the professional master’s degree program is provided workload credit *only* to the *chairperson* of the graduate committee. One semester hour of teaching load credit will be given for every six credit hours of graduate coursework completed by the graduate students the committee chairperson supervises.
5. An individual graduate faculty member can receive a maximum of three credit hours of teaching workload credit for supervision of each individual graduate student for which they have been assigned chairperson.
6. Adjunct faculty/teaching assistants will cover the undergraduate teaching obligations that result from assumptions 2, 3, 4, and 5.
7. College of Technology and Aviation replacement Faculty will be paid at an average rate of \$750 per credit hour.
8. Our conservative estimate of full-time students, part-time students, and PMT graduates during the first four years is provided in the table below.

	First Year	Second Year	Third Year	Fourth Year	Four Year Total
Full-time Students	5	7	9	11	N/A
Part-time Students	5	10	12	14	N/A
Assumed Number of Graduates	0	5	7	10	22

9. We will be teaching the following courses at COTA (remaining courses are being covered by other colleges):

	First Year	Second Year Onward
Fall Semester	1. COT 701 Advanced Technical Communication (3); 2. COTA Elective (3); 3. COTA Elective (3);	1. COT 701 Advanced Technical Communication (3); 2. COT 781 Capstone Experience for Professional Master of Technology (var. taken as 3 for calculation); 3. COTA Elective (3); 4. COTA Elective (3);
Spring Semester	1. COT 702 Applied Research Skills and Methods (3); 2. COT 781 Capstone Experience for Professional Master of Technology (var. taken as 3 for calculation); 3. COTA Elective (3); 4. COTA Elective (3);	1. COT 702 Applied Research Skills and Methods (3); 2. COT 781 Capstone Experience for Professional Master of Technology (var. taken as 3 for calculation); 3. COTA Elective (3); 4. COTA Elective (3);
Summer	1. COT 781 Capstone Experience for Professional Master of Technology (var. taken as 3 for calculation);	1. COT 781 Capstone Experience for Professional Master of Technology (var. taken as 3 for calculation);
Total Credits	24	27

Note: Using the above table the College Technology and Aviation (COTA) is obligated to teach  $24+(3 \times 27)=105$  credits (during the first four years).

10. Cost calculations are based on the total number graduates and the number of credits taught (assumptions 8 and 9).
11. For revenue calculations, we assume that the average student takes 20 credit hours from K-State at Salina. Therefore, each graduate generates 10 credit hours of tuition money for COTA (2/3 of SCH revenue goes to College of Technology and Aviation).
12. It is assumed that each full-time student takes an average of 15 credits hours/yr (while full-time students without assistantship average 18 credits hours /yr and with assistantships average 12 credits hours /yr) and part-time students take an average of 6 credit hours/yr.
13. No significant OOE expense anticipated other than cost of printing and teacher supplies. All program faculty already have travel money and other anticipated expenses budgeted with their current positions and no new permanent faculty will be hired.



	A	B	C	D	E	F	G
1							
2	Credit Hours to Graduate:	30					
3	Av. Credit Hours from Salina:	20					
4	Av. Credit Hours from Manhattan:	10					
5							
6		Current	Year 1	Year 2	Year 3	Year 4	
7		Fall 2009	Fall 2011	Fall 2012	Fall 2013	Fall 2014	
8	Graduate rate per credit hour	\$279.90	\$288.30	\$296.95	\$305.85	\$315.03	
9							
10	Cost of Adjunct to back-fill Undergrad courses:	\$700.00	\$725.00	\$750.00	\$775.00	\$800.00	
11							
12	Number of full-time students		5	7	9	11	
13	Number of part-time students		5	10	12	14	
14	Total SCH		105	165	207	249	
15	Salina SCH		70	110	138	166	
16	Manhattan SCH		35	55	69	69	
17	Credit hour release time for advising		0	15	21	30	
18	Graduates		0	5	7	10	
19	Credit hours taught by Salina		24	27	27	27	
20	Undergraduate equivalent credit hours requiring adjunct faculty		36	63	72	85.5	
21			Adjunct Cost	Revenue Generated			Salina Cost
22				MHK	Salina	Total	
23		Year 1	\$26,100.00	\$10,090.40	\$20,180.79	\$30,271.19	\$5,919.21
24		Year 2	\$47,250.00	\$16,821.99	\$32,664.05	\$49,486.04	\$14,585.95
25		Year 3	\$55,800.00	\$21,103.95	\$42,207.89	\$63,311.84	\$13,592.11
26		Year 4	\$68,400.00	\$21,737.06	\$52,294.97	\$74,032.03	\$16,105.03
27		Totals:	\$197,550.00	\$69,753.39	\$147,347.70	\$217,101.09	\$50,202.30
28							
29							
30							
31			Grad Hour		Estimated	4-yr	Cost/Yr
32		Grad Hours	Release Time	Equivalent	Cost of Adjunct	Revenue	
33		Taught	for Supervision	UnderGrad Hours	Faculty		
34							
35	Total Salina Credit Hours Taught in four years:	105	66	256.5	\$197,550.00	\$147,347.70	\$12,550.58

Table. Projected revenue and expense.

### **Forms Provided with Proposal**

There are three forms that will be prepared and submitted with the proposal:

- a. Summary of Proposed Academic Program
- b. Curriculum Outline for Proposed Academic Program
- c. Fiscal Summary for Proposed Academic Program

**New Degree Request – Kansas State University**

<u>Criteria</u>	<u>Program Summary</u>
1. Program Identification (CIP code)	15.9999
2. Academic Unit	The PMT degree will be managed by the K-State Graduate School with courses being offered by the participating departments from the College of Aviation and Technology
3. Program Description	<p>College of Technology and Aviation’s Professional Master of Technology Degree is designed to allow professionals in technology to thrive in today’s rapidly changing work environment. The program will be a professional degree that emphasizes the teaching of soft skills, along with the hard skills that focus on the technical requirements of the workplace. K-State’s institutional mission reflects the University’s commitment to developing “human potential, expanding knowledge, enriching cultural expression, and extending its expertise to individuals, business, education, and government. These responsibilities are addressed through an array of undergraduate and graduate degree programs... to prepare students for successful employment or advanced studies through a variety of disciplinary and professional degree programs...Kansas State University prepares its students to be informed, productive, and responsible citizens who participate actively in advancing cultural, educational, economic, scientific, and socio-political undertakings.” We believe that the proposed Professional Master of Technology (PMT) degree is completely compatible with the mission of the University.</p> <p>As a professional program, the Professional Master of Technology Degree will by definition provide advanced skills in the areas of communication, leadership, project management, and teamwork. It will also provide unique opportunities for emphasizing in the broad areas of aviation, engineering technology, and technology management. All the three departments (Art, Science, and Business; Aviation; and Engineering Technology) from the College of Technology and Aviation (COTA) will combine to create highly individualized plans of study.</p> <p>By capturing the niche of becoming the only professional master’s degree for technology professionals in the State of Kansas, the program has the ability to attract qualified college graduates and industry personnel from a variety of backgrounds, both regionally and nationally. From the College’s point of view, apart from creating advancement opportunities for all bachelor’s degree holders from the K-State College of Technology and Aviation (COTA), this program will also enhance the applied research capabilities leading to an intensified collaboration with regional industry.</p>

<p>4. Demand/Need for the Program</p>	<p>Prospective student demand for the program was assessed through two instruments a current student survey and an alumni survey. The results obtained from both surveys seem to indicate that a majority of the respondents in each case would be interested in pursuing our Professional Master of Technology degree.</p>
<p>5. Comparative /Locational Advantage</p>	<p>The Professional Master of Technology program will have the advantage of being located in a growing industrial town only 90 miles from a large industrial base in Wichita, Kansas. Our two main target populations consist of our graduates and other technology professionals in the area who are seeking a professional degree. The degree that emphasizes the teaching of soft skills, along with the hard skills that focus on the technical requirements of the workplace and is therefore more student-centered from the perspective of aforementioned target groups. The idea of the professional degree, while relatively new, has emerged as a popular post-graduate alternative to a standard Master of Science (MS) Degree. K-State at Salina educators, industry representatives and alumni have a long term vested interest in the actualization of this program. The program aligns COTA resources to support the educational aspirations and career pathways of many Kansas citizens.</p> <p>Our degree will also benefit in multiple ways from the strong ties that bind the College of Technology and Aviation with its industrial partners. Industry relationships will help us with ideas for real-world capstone projects and provide a source of guest lecturers among other things.</p> <p>Our current list of industrial advisory council includes 100+ members from of the largest Kansas companies and would form an excellent pool from which to draw PMT advisory board members. The survey results and letters of support presented in sections 1.1-1.3 are a strong indication of support from alumni and industry representatives.</p> <p>.</p>

6. Curriculum	Students will develop advanced technical writing skills, project management skills, leadership skills, global skills, and other personal and interpersonal skills through a set of courses and a mandatory capstone experience. This part of the degree requirement will be referred to as “common core.” The common core will have a minimum of nineteen credits required and students will be able to select 9-11 credits of electives. Students in our Professional Master of Technology program will expand technical knowledge and applied research skills through a combination of the required capstone experience and advanced elective coursework.
7. Faculty Profile	The Professional Master of Technology Degree will benefit from the combined expertise of nine graduate faculty with terminal degrees from the K-State at Salina and three other main campus graduate faculty from Statistics and Management. While teaching responsibilities will be shared by the group only Salina program faculty will be responsible for teaching, advising and supervision. Selected program faculty will also be designated coordinator roles in admissions, assessment, program review, and accreditation.
8. Student Profile	<p>When the student population stabilizes, we think that the part-time to full-time distribution ratio to be near 60% to 40% and the part-time students would mostly be employed in industry. It is anticipated that many of our recruits will come from COTA graduates, from one of its three departments provided they meet minimum admission criteria and recommendations of the admissions committee. As a minimum criteria we will require 3.0 or higher in the last 60 credits of formal coursework and three months of industry experience. Industry experience may be waived for students who plan on completing an internship while in the program. Graduates from other Colleges will also be able to apply to the program provided they satisfy the following criteria,</p> <ol style="list-style-type: none"> <li>a. <u>Have a B.S. degree in the area of Engineering Technology; Professional Pilot; Aviation Maintenance; Technology Management; or a closely related field.</u></li> <li>b. <u>3.0 or higher in the last 60 credits of formal coursework.</u></li> <li>c. <u>Have a minimum of three months of industry experience at the time of admission (this criterion can be waived for students who plan to complete an internship requirement).</u></li> <li>d. <u>International students will need to meet English requirements set by the Graduate School.</u></li> </ol>

9. Academic Support

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The Office of Career Services provides assistance in job placement and provides counseling in choosing a career, developing a resume, and practicing interview techniques. Career Services coordinates interviews with employers seeking job applicants and coordinates the campus' career fair each spring.

**Continuing Education**

The Division of Continuing Education offers workshops, seminars, and short-term and full-term courses in the fields of technology. Special courses can be designed to meet the needs of individuals, groups, and organizations. These services can be provided on campus, in-plant, or in communities where technical services are needed but not readily available. Continuing education units may be granted in appropriate cases.

**K-State Online**

K-State Online, an Internet based learning management system, transforms the everyday classroom into interactive web sessions for K-State's on-campus and distance education communities. It extends and enhances K-State course instruction, enabling students with time and geographic restrictions to take advantage of the flexibility of learning over the Internet.

**COTA Library**

COTA students have access to 188 electronic databases that span multiple disciplines. These databases provide access to 2,312 electronic journals in engineering and aviation; 3,544 electronic journals in business, economy, and management; Library staff will examine course syllabi and work with the graduate faculty and 709 electronic journals in mathematical sciences.

At the request of Department of Aviation, the library spent ¼ of our annual collection budget in FY2009 to build up resources in aviation safety and management. In FY2009, the library spent approximately \$500 on materials focusing on Lean Six Sigma Methods. The K-State at Salina Library will commit to spending ½ of its FY2010 (estimated \$7,000 - \$10,000) collection budget to filling gaps in the collection needed to support the Professional Master of Technology Program. This will support the addition of approximately 80 – 120 new resources in the library's collection. to build the physical collection in the areas of RF technology, applied research skills and methods, management, plant equipment, and applied electromagnetics. New material will be purchased in both print and electronic book formats. Additional new resources will continue to be funded by a 3% SRO set aside for the library.

<p>10. Facilities and Equipment</p>	<ul style="list-style-type: none"> <li>a. No new facilities anticipated;</li> <li>b. No new technology needs for instructional support anticipated;</li> <li>c. The K-State at Salina Library will commit to spending ½ of its FY2010 (estimated \$7,000 - \$10,000) collection budget to developing wholes in the collection needed to support the Professional Master of Technology Program.</li> </ul>
<p>11. Program Review, Assessment, Accreditation – formal assessment plan.</p>	<p>All program student learning outcomes from Table 4 will be assessed over the course of time through a combination of both course assessment and program assessment. Table 6 shows where each outcome is assessed. Each outcome will be evaluated by multiple direct measures including locally developed tests, homework assignments, projects, labs, capstone experience, portfolios, and essay questions. Indirect measures will be taken through surveys of course outcomes conducted at the end of the semester. The surveys (indirect measures) will be filled in anonymously by students.</p> <p>The program outcomes are listed below:</p> <p><b>SLO 1</b> Demonstrate ability to apply project management techniques to the workplace.</p> <p><b>SLO 2</b> Demonstrate ability to perform self-directed inquiry, experimentation, and design in one’s emphasis area.</p> <p><b>SLO 3</b> Demonstrate ability to apply skills and knowledge in one’s emphasis area.</p> <p><b>SLO 4</b> Demonstrate ability to write clear and effective technical reports, proposals, presentations, and business correspondence.</p> <p><b>SLO 5</b> Demonstrate ability to orally communicate technical information to a variety of audiences.</p> <p><b>SLO 6</b> Demonstrate understanding of relevant professional ethics and social responsibility.</p>

12. Costs, Financing	<p>The College and Aviation and Technology (COTA), intends to cover expenses related to the new PMT program through reallocation. Under a conservative estimate, that allows twenty-two graduates during the first four years of the program using assumptions that are more likely to overestimate cost and underestimate revenue. Based on list of assumptions provide in the cost section, we have calculated the reallocation amount for the entire program to be only about \$12,500.00/year for the first four years. The calculations were completed in using the following assumptions.</p>
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**CURRICULUM OUTLINE  
NEW DEGREE PROPOSALS  
Kansas Board of Regents**

**I. Identify the new degree: Professional Master of Technology**

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**II. Provide courses required for each student in the major:**

	<b>Course Name &amp; Number</b>	<b>Credit Hours</b>
<b>Common Courses</b>	<p style="text-align: center;"><b>Core</b></p> <p>COT 701 Advanced Technical Communication (3)</p> <p>COT 702 Applied Research Skills and Methods (3)</p> <p>STAT 703 Statistical Methods for Natural Sciences (3)</p> <p>MANGT 810 Operations Management and Analysis (3)</p> <p>MANGT 820 Behavioral Management Theory (3)</p> <p>COT 781 Capstone Experience for Professional Master of Technology (4-6)</p>	19-21
<b>Elective Courses</b>	<p>COT 632 RF Technology (3)</p> <p>COT 650 Analytical and Computational Tools for Engineering Technology (3)</p> <p>COT 661 Airport Planning and Management (3)</p> <p>COT 713 Advanced Aviation Safety Management (3)</p> <p>COT 720 Application of Lean Six Sigma Methods (3)</p> <p>COT 721 Reliability Centered Maintenance of Plant Equipment (3)</p> <p>COT 731 Applied Electromagnetics (3)</p> <p>COT 792 Problems in Master of Technology (var. 1-3)</p> <p>COT 799 Special Topics in Professional Master of Technology (var. 1-3)</p> <p>ECON 640 Industrial Organization and Public Policy (3)</p> <p>IMSE 680 Quantitative Problem Solving Techniques (3)</p>	9-11

TOTAL CREDITS      30



IMPLEMENTATION YEAR

FY   2011  

Fiscal Summary for Proposed Academic Programs  
(SEE SECTION 7)

Institution: Kansas State University

Proposed Program: Professional Master of Technology

<b>Part I. Anticipated Enrollment</b>	Implementation Year		Year 2		Year 3	
	Full-Time	Part-Time	Full-Time	Part-Time	Full-Time	Part-Time
A. Full-time, Part-time Headcount:	5	5	7	10	9	12
B. Total SCH taken by all students in program	105 (Salina 70, Manhattan 35)		165 (Salina 110, Manhattan 55)		207 (Salina 138, Manhattan 69)	
<b>Part II. Program Cost Projection</b>						
A. In <u>implementation</u> year one, list all identifiable General Use costs to the academic unit(s) and how they will be funded. In subsequent years, please include only the additional amount budgeted.						
	Implementation Year		Year 2		Year 3	
<u>Base Budget</u> Salaries	\$5,919 (see section 7)		\$14,586 (see section 7)		\$13,592 (see section 7)	
OOE	See section 7					
Total	\$5,919		\$14,595		\$13,592	

Indicate source and amount of funds if other than internal reallocation:

**PLEASE SEE SECTION 7 FOR COST ANALYSIS. ALL FUNDS COMING FROM INTERNAL REALLOCATION.**

Approved: \_\_\_\_\_

# **APPENDIX A**

## **New Course Proposals**

## **COURSE ADDITIONS:**

**ADD:**                   **COT 632 RF Technology.** (3) II. An introduction to the theory and design of electronic circuits for communications emphasizing the implementation and analysis of common radio-frequency (RF) building blocks. Topics include s-parameters, the Smith chart, component behavior, RF test equipment, computer simulation, filter design, impedance matching, amplifiers, oscillators, mixers, and demodulators. A report will be required of all graduate students. Pr.: ECET 320.

**RATIONALE:**       This course provides the fundamentals of RF theory and techniques. Students are also exposed to hardware and software tools commonly used in industry.

**IMPACT:**            No impact on any other department.

**CONTACT:**        Saeed Khan (826-2677 [saeed@sal.ksu.edu](mailto:saeed@sal.ksu.edu))

**EFFECTIVE DATE:** Fall 2011.

**ADD:**                   **COT 650 Analytical and Computational Tools for Engineering Technology.** (3) I. Ordinary differential equations, vector algebra, vector calculus, partial differential equations and the separation of variables technique for solving wave equations. Students also perform simulation and analysis using software tools including MATLAB and MATHCAD. Pr.: MATH 221.

**RATIONALE:**       This course provides engineering technology students with advanced math concepts that are not normally a part of the bachelor's program. In doing so, students gain valuable experience with some analytical and computational tools used in industry.

**IMPACT:**            No impact on any other department.

**CONTACT:**        Saeed Khan (826-2677 [saeed@sal.ksu.edu](mailto:saeed@sal.ksu.edu))

**EFFECTIVE DATE:** Fall 2011.

**ADD:** **COT 661. Airport Planning and Management.** (3) I. An overview of the Federal Aviation Regulation Part 139 airport design standard and airport master planning process. Includes a study of the role of the airport in community development. Advanced course project required. Pr.: PPIL 111.

**RATIONALE:** The purpose of this course is to help prepare students with foundational knowledge necessary for a job or career in airport management. Recognizing that airport management is a discipline unto itself, and recognizing that Kansas currently has 142 public-use airports with no formal training for the professional management of those airports, this certificate seeks to bridge that gap within the state.

**IMPACT** No impact on any other department.

**CONTACT:** Ken Barnard (826-2681 [barnard@ksu.edu](mailto:barnard@ksu.edu))

**EFFECTIVE DATE:** Fall 2011.

**ADD:** **COT 701. Advanced Technical Communication.** (3) I. Intensive writing practice, applying rhetorical principles to a number of genres common to non-academic professions and workplaces, including oral presentations. Introduction to allied topics such as document design and editing, and crafting technical presentations. Application of global information literacy and research methods will culminate in the preparation of a master's project proposal. Pr.: ENGL 200 and ENGL 302.

**RATIONALE:** Recent surveys of employers hiring our graduates indicate a need for advanced technical communication skills. A survey of similar programs at competing regents schools identifies a consistent technical writing component in required core components.

**IMPACT** No impact on any other department.

**CONTACT:** Patricia Ackerman (826-2904 [ackerman@ksu.edu](mailto:ackerman@ksu.edu))

**EFFECTIVE DATE:** Fall 2011.

**ADD:** **COT 702 Applied Research Skills and Methods.** (3) II. Survey of qualitative and quantitative research methods; use of a range of tools to develop applied research skills focusing on literature reviews. Examines applied research concepts, methods, and skills to foster enlightened decision making in professional practice. Pr.: COT 701.

**RATIONALE:** This course provides students with effective methods to perform literature reviews, to survey research methods, skills, and topics related to program fields, and to apply these concepts to their Capstone experience and professional practice.

**IMPACT:** No impact on any other department.

**CONTACT:** Jung Oh (826-2915 [jroh@ksu.edu](mailto:jroh@ksu.edu))

**EFFECTIVE DATE:** Fall 2011

**ADD:** **COT 713 Advanced Aviation Safety Management** (3) II. An examination of the development of safety and how safety management has become an important part of any company. Discusses Safety Management Systems and how this blueprint is becoming an integral part of most organizations, emphasizing specific governmental and corporate programs. Topics include management tools and techniques to aid in systematically controlling risk and developing a safety culture mind-set. Pr.: PPIL 450.

**RATIONALE:** This course addition will expands student understanding of Safety Management Systems in organizations and how they affect industries in and out of the aviation arena. This is becoming an incremental part of all well managed companies.

**IMPACT:** No impact on any other department.

**CONTACT:** Ken Barnard (826-2681 [barnard@ksu.edu](mailto:barnard@ksu.edu))

**EFFECTIVE DATE:** Fall 2011

**ADD:** **COT 720 Application of Lean Six Sigma Methods.** (3) II. Six sigma and lean tools within an enterprise to improve product and process development, production operations, and service activities. Pr.: STAT 703.

**RATIONALE:** Businesses seek to maximize growth and achieve superior value delivery to customers. This course provides a basic understanding of application of lean and six sigma philosophies, methods, and tools to achieve quantifiable results to achieve business growth.

**IMPACT:** No impact on any other department.

**CONTACT:** Raju Dandu (826-2629 [rdandu@ksu.edu](mailto:rdandu@ksu.edu))

**EFFECTIVE DATE:** Fall 2011

**ADD:** **COT 721 Reliability Centered Maintenance of Plant Equipment.** (3) II. Reliability modeling and assessment, reliability-centered maintenance, condition monitoring technologies, and computer tools. Pr.: Graduate standing.

**RATIONALE:** Industries need more agility to compete globally and achieve productivity at the lowest cost. This course is aimed at providing an applied understanding of tools and technologies in the systematic process of maintaining, upgrading, and operating physical assets cost-effectively.

**IMPACT:** No impact on any other department.

**CONTACT:** Raju Dandu (826-2629 [rdandu@ksu.edu](mailto:rdandu@ksu.edu))

**EFFECTIVE DATE:** Fall 2011

**ADD:** **COT 731 Applied Electromagnetics (3) II.** Fundamentals of electromagnetic wave phenomena primarily using transmission line theory to study practical applications such as antennas, cables, and waveguides. Includes a treatment EMI and related issues. Pr.: MATH 221 and ECET 320.

**RATIONALE:** This course is designed to provide students with a better understanding of the electromagnetic aspects of practical electronic devices and their design.

**IMPACT:** No impact on any other department..

**CONTACT:** Saeed Khan (826-2677 [saeed@sal.ksu.edu](mailto:saeed@sal.ksu.edu))

**EFFECTIVE DATE:** Fall 2011

**ADD:** **COT 781 Capstone Experience for Professional Master of Technology (Var.) I,II,S.** Students formulate, research and execute a project for industry partners to gain hands-on experience under expert guidance while integrating knowledge to solve complex problems. Students write a convincing proposal for a capstone experience, gather and analyze data, draw conclusions and present results. Teams of first- and second-year students may form to work on real-world projects. May be repeated up to three semesters, up to a total of six credit hours. Pr.: Consent of instructor. Coreq.: COT 702.

**RATIONALE:** A capstone experience for the Professional Master of Technology degree is an important centerpiece and credential for future employment or promotion. This course provides students with effective methods to integrate problem solving skills in their professional practice fields with analytical, communication, team work and leadership skills.

**IMPACT:** No impact on any other department.

**CONTACT:** Jung Oh (826-2915 [jroh@ksu.edu](mailto:jroh@ksu.edu))

**EFFECTIVE DATE:** Fall 2011

**ADD:** **COT 792 Problems in Professional Master of Technology** (Var.) I,II,S.  
Opportunity for advanced independent study of a specific topic in one of the following areas: Aviation safety, engineering technology, or technology management. Topics selected jointly by student and the instructor. Pr.: Consent of instructor.

**RATIONALE:** Provides the option for independent study courses.

**IMPACT:** No impact on any other department.

**CONTACT:** Saeed Khan (826-2677 [saeed@sal.ksu.edu](mailto:saeed@sal.ksu.edu))

**EFFECTIVE DATE:** Fall 2011

**ADD:** **COT 799 Special Topics in Professional Master of Technology** (Var.)  
I,II,S. Offered on sufficient demand. Advanced topics in Professional Master of Technology. Pr.: Varies with announced topic.

**RATIONALE:** Provides the option for special topic courses.

**IMPACT:** No impact on any other department.

**CONTACT:** Saeed Khan (826-2677 [saeed@sal.ksu.edu](mailto:saeed@sal.ksu.edu))

**EFFECTIVE DATE:** Fall 2011



# Supplemental Information on Courses:

<p><u>Course Name and Description:</u></p> <p><b>COT 632 RF Technology.</b> (3) II. An introduction to the theory and design of electronic circuits for communications emphasizing the implementation and analysis of common radio-frequency (RF) building blocks. Topics include s-parameters, the Smith chart, component behavior, RF test equipment, computer simulation, filter design, impedance matching, amplifiers, oscillators, mixers, and demodulators. A report will be required of all graduate students. Pr.: ECET 320.</p>	
<p><u>Rationale:</u></p> <p>This course provides the fundamentals of RF theory and techniques. Students are also exposed to hardware and software tools commonly used in industry.</p>	
<p><u>Instructor:</u></p> <p>Dr. Saeed M. Khan</p>	
<p><u>Instructor Qualifications:</u></p> <p>See CV in Appendix B.</p>	
<p><u>PMT Student Learning Outcomes that addressed in this course:</u></p> <p><b>SLO 2</b> Demonstrate ability to perform self-directed inquiry, experimentation, and design in one's emphasis area.</p> <p><b>SLO 3</b> Demonstrate ability to apply skills and knowledge in one's emphasis area.</p>	
<p><u>Course Information:</u></p>	
<u>Week #</u>	<u>Material Covered</u>
1	Introduction to Maxwell SV tool for modeling resistors, inductors and capacitors and electromagnetic visualization
2	Circuit models for RF components (resistor, capacitor, and inductors). Design of torroidal inductors.
3	Review of Oscillators, Mixers, Demodulators
4	Receiver and Transmitter Topologies
5	Review of RF Semiconductor Devices

6	Filter Design: Filter types, frequency and impedance scaling.
7	Smith Chart, S-parameter Review, Impedance Matching, Software Tools for Impedance Matching
8	Small-Signal RF Amplifier Design using S-Parameters
9	RF Power Amplifiers Theory and Design
10	RF Front-End Design
11	RF Front-End Design
12	Software Defined Radio Basics
13	Microstrip Lines (preceded by a review of Transmission Line Theory)
14	Antennas
15	RF Design Tools
16	RFIC Design Flow
17	RFIC Design Flow
<p>Class Report: Students will conduct a literature search in the field of RF Technology and complete a report on this technology prior to the final. A list of suggested topics will be provided prior at the start of classes, however students are free to make their own in consultation with the instructor.</p>	

<u>Course Name and Description:</u>	
<p><b>COT 650 Analytical and Computational Tools for Engineering Technology. (3) I.</b>  The course includes following topics: ordinary differential equations, vector algebra, vector calculus, partial differential equations and the separation of variables technique for solving wave equations. Students also perform simulation and analysis using software tools including MATLAB and MATHCAD. Pr.: MATH 221.</p>	
<u>Rationale:</u>	
<p>This course provides engineering technology students with math concepts that are not normally a part of the bachelor's program. In doing so, students gain valuable experience with some analytical and computational tools used in industry.</p>	
<u>Instructor:</u>	
Dr. Richard Zajac	
<u>Instructor Qualifications:</u>	
See CV in Appendix B.	
<u>PMT Student Learning Outcomes that addressed in this course:</u>	
<p><b>SLO 3</b>  Demonstrate ability to apply skills and knowledge in one's emphasis area.</p>	
<u>Course Information:</u>	
<u>Week #</u>	<u>Material Covered</u>
1-3	Introduction to Ordinary Differential Equations
	Sample applications in Electric Circuits and Forced Oscillations
4	Using ODESOLVE function from MATHCAD and/or DSOLVE from MATLAB
5	Review of Vector Algebra
6	Using MATLAB in Vector Algebra problems; Use of SIMULINK
7-8	Vector differential Calculus, Vector Fields
9-12	Line Integrals, Surface Integrals, Gauss Theorem, Stokes Theorem
13-15	Partial Differential Equations
	Modeling Heat Flow and Vibrating Membranes
	Using PDESOLVE function from MATHCAD and PDE solver from MATLAB
16	Review

Course Name and Description:

**COT 661. Airport Planning and Management.** (3) I. An overview of the Federal Aviation Regulation Part 139 airport design standard and airport master planning process. Includes a study of the role of the airport in community development. Advanced course project required. Pr.: PPIL 111.

Rationale:

The purpose of this course is to help prepare students with foundational knowledge necessary for a job or career in airport management. Recognizing that airport management is a discipline unto itself, and recognizing that Kansas currently has 142 public-use airports with no formal training for the professional management of those airports, this certificate seeks to bridge that gap within the state.

Instructor:

R. Kurt Barnhart, PhD

Instructor Qualifications:

See CV in Appendix B.

PMT Student Learning Outcomes that addressed in this course:

**SLO 3**

Demonstrate ability to apply skills and knowledge in one's emphasis area.

Course Information:

Topics in this course will include be in the following areas:

- Planning, development, safety, history and operation of a modern airport
- The impact of federal and state regulations, environmental policies, operational safety, maintenance, airport inspections, and public relations
- Current legislation in airport system planning and forecasting; demand/capacity analysis; terminal and airside planning; and airport layout plans
- Areas of study will include FAA airport design requirements, master plans/engineering, regulation, business/administration, and public relations

**Course Objective:** This course is designed to provide the student with an understanding of airport management, operations and planning. In-depth analysis will be conducted of the airports manager's responsibilities, purpose, and interface with the airport board, the city, state, and government officials. The student will study the airport system with emphasis focused on planning, operations, capacity, safety, financing, and administration. The student will gain an in-depth knowledge of the United States airport system. Finally, the social and political influences associated with running an airport will be explored.

Course Name and Description:

**COT 701. Advanced Technical Communication.** (3) I. Intensive writing practice, applying rhetorical principles to a number of genres common to non-academic professions and workplaces, including oral presentations. Introduction to allied topics such as document design and editing, and crafting technical presentations. Application of global information literacy and research methods will culminate in the preparation of a master's project proposal. Pr.: ENGL 200 and ENGL 302.

Rationale:

Recent surveys of employers hiring our graduates indicate a need for advanced technical communication skills. A survey of similar programs at competing regents schools identifies a consistent technical writing component in required core components.

Instructor:

Dr. Judith Collins

Instructor Qualifications:

See CV in Appendix B.

PMT Student Learning Outcomes that addressed in this course:

**SLO 2**

Demonstrate ability to perform self-directed inquiry, experimentation, and design in one's emphasis area.

**SLO 4**

Demonstrate ability to write clear and effective technical reports, proposals, presentations, and business correspondence.

**SLO 5**

Demonstrate ability to orally communicate technical information to a variety of audiences.

Course Information:

Weeks 1-2: Proposal writing: student writes a proposal to do research. Proposal is reviewed and evaluated by thesis committee made up of at least one faculty specialist in the field and one writing instructor/professor

Weeks 3-4: After any required revisions of the proposal, student commences a comprehensive review of literature relevant to the issue to be investigated. Oversight of the review is conducted by faculty specialist in the field and the head librarian at k-state Salina in collaboration with resource specialists at Manhattan libraries.

Week 5: Definition of the problem: The review of literature culminates in a succinct statement of the problem, situated in an appropriate line of inquiry relevant to the field. To be approved by faculty specialist in the field.

Weeks 6-12: data is gathered

Weeks 13-14 data is analyzed

Weeks 14-15: Results are written, including conclusion and discussion

Week 16: Revisions are completed; an oral presentation is composed and presented (crafting technical presentations). Students are encouraged to seek publication in appropriate venues including online journals relevant to the field.

Course Name and Description:

**COT 702 Applied Research Skills and Methods.** (3) II. Survey of qualitative and quantitative research methods; use of a range of tools to develop applied research skills focusing on literature reviews. Examines applied research concepts, methods, and skills to foster enlightened decision making in professional practice. Pr.: COT 701.

Rationale:

This course provides students with effective applied research skills and methods to perform literature reviews, to survey research method and design topics related to program fields, and to apply these concepts to their thesis/project/report development and presentation as well as professional practice.

Instructor:

Dr. Jung Oh

Instructor Qualifications:

See CV in Appendix B.

PMT Student Learning Outcomes that addressed in this course:

**SLO 2**

Demonstrate ability to perform self-directed inquiry, experimentation, and design in one's emphasis area.

**SLO 3**

Demonstrate ability to apply skills and knowledge in one's emphasis area. audiences.

**SLO 6**

Demonstrate understanding of relevant professional ethics and social responsibility.

Course Information:

With the proposed Professional Master of program based on various discipline backgrounds, the course focuses on (a) non-disciplinary/multidisciplinary approaches, using examples and practices taken from many fields and professional communities, (b) succinct coverage for a range of inquiry approaches, research design and process, qualitative, quantitative and mixed methods, and further investigation of applied research methods/skills commonly used in each student's disciplines, (c) strong collaboration from instructor, students, program advisors, librarian to explore and build knowledge and critical skills that will be particular to, and useful for each student's research project agenda and professional practices.



Course Name and Description:

**COT 713 Advanced Aviation Safety Management (3) II.** An examination of the development of safety and how safety management has become an important part of any company. Discusses Safety Management Systems and how this blueprint is becoming an integral part of most organizations, emphasizing specific governmental and corporate programs. Topics include management tools and techniques to aid in systematically controlling risk and developing a safety culture mind-set. Pr.: PPIL 450.

Rationale:

This course addition will expand student understanding of Safety Management Systems in organizations and how they affect industries in and out of the aviation arena. This is becoming an incremental part of all well managed companies.

Instructor:

Dr. Kenneth Barnard

Instructor Qualifications:

See CV in Appendix B.

PMT Student Learning Outcomes that addressed in this course:

**SLO 3**

Demonstrate ability to apply skills and knowledge in one's emphasis area.

Course Information:

**Aviation Safety Programs: A Management Handbook By Richard Wood, June 2003, Jeppesen Sanderson; 3 edition (June 2003)**

**Course Outline**

**Module One**

Lecture: Safety Basics

Readings: Review chapters 1 thru 6

Project: Safety Culture Discussion / Survey

**Module Two**

Lecture: The Human Element in Safety and Operational Risk Management (ORM).

Readings: Chapters 7 thru 10

Project: On-line ORM.

**Module Three**

Lecture: Safety Program Elements, Risk Assessment, Hazard Analysis, and an introduction to accident investigation.

Projects : NTSB Case Studies, Risk Assessment, Hazard Analysis

Readings: Chapters 11 thru 16 and as directed by Instructor

**Module Four**

Lecture: Current safety issues / Safety Management Systems (SMS)

Readings: Chapters 24 – 26

Project / Presentations: SMS

<u>Course Name and Description:</u>	
<b>COT 720 Application of Lean Six Sigma Methods.</b> (3) II. Six sigma and lean tools within an enterprise to improve product and process development, production operations, and service activities. Pr.: STAT 703.	
<u>Rationale:</u>	
Businesses seek to maximize growth and achieve superior value delivery to customers. This course provides a basic understanding of application of lean and six sigma philosophies, methods, and tools to achieve quantifiable results to achieve business growth.	
<u>Instructor:</u>	
Dr. Raju Dandu	
<u>Instructor Qualifications:</u>	
See CV in Appendix B.	
<u>PMT Student Learning Outcomes that addressed in this course:</u>	
<b>SLO 2</b> Demonstrate ability to perform self-directed inquiry, experimentation, and design in one's emphasis area.	
<b>SLO 3</b> Demonstrate ability to apply skills and knowledge in one's emphasis area.	
<u>Course Topical Outline:</u>	
1	Introduction to Lean Six Sigma
2	Lean Six Sigma Methodologies
3	Lean Tools and applications – Case Studies 5S, Value Stream Mapping, Kaizen Events, Mistake Proofing
4	Six Sigma – Introduction to DMAIC Process
5	Application of DMAIC
6	Lean Six Sigma Deployment – Case Studies
	Class Report: Students will work on three term papers as mini projects and presentations. Students will have an alternative to work on a single term project with project proposal and final written report and presentation.

<u>Course Name and Description:</u>	
<b>COT 721 Reliability Centered Maintenance of Plant Equipment.</b> (3) II. Reliability modeling and assessment, reliability-centered maintenance, condition monitoring technologies, and computer tools. Pr.: Graduate standing.	
<u>Rationale:</u>	
Industries need more agility to compete globally and achieve productivity at the lowest cost. This course is aimed at providing an applied understanding of tools and technologies in the systematic process of maintaining, upgrading, and operating physical assets cost-effectively.	
<u>Instructor:</u>	
Dr. Raju Dandu	
<u>Instructor Qualifications:</u>	
See CV in Appendix B.	
<u>PMT Student Learning Outcomes that addressed in this course:</u>	
<b>SLO 2</b>	
Demonstrate ability to perform self-directed inquiry, experimentation, and design in one's emphasis area.	
<b>SLO 3</b>	
Demonstrate ability to apply skills and knowledge in one's emphasis area.	
<u>Course Topical Outline:</u>	
1	Introduction to World Class Maintenance
2	Preventive Maintenance
5	RCM (Reliability Centered maintenance) Methodology-The systems Analysis Process
3	Application of RCM – Case Study
4	Alternative Analysis Methods
5	Condition Based Monitoring Technologies and applications
6	Industrial Experience with RCM – Selected Case Histories
<u>Class Report:</u>	
Students will work on three term papers as mini projects and presentations. Students will have an alternative to work on a single term project with project proposal and final written report and presentation.	

<u>Course Name and Description:</u>	
<b>COT 731 Applied Electromagnetics (3) II.</b> Fundamentals of electromagnetic wave phenomena primarily using transmission line theory to study practical applications such as antennas, cables, and waveguides. Includes a treatment EMI and related issues. Pr.: MATH 221 and ECET 320.	
<u>Rationale:</u>	
This course is designed to provide students with a better understanding of the electromagnetic aspects of practical electronic devices and their design.	
<u>Instructor:</u>	
Dr. Saeed M. Khan	
<u>Instructor Qualifications:</u>	
See CV in Appendix B.	
<u>PMT Student Learning Outcomes that addressed in this course:</u>	
<b>SLO 2</b> Demonstrate ability to perform self-directed inquiry, experimentation, and design in one's emphasis area.	
<b>SLO 3</b> Demonstrate ability to apply skills and knowledge in one's emphasis area.	
<u>Course Information:</u>	
<u>Week #</u>	<u>Material Covered</u>
1-3	Introduction to Electromagnetic Fields
	Transmission Lines
	The SMITH TOOL package for Transmission Line Analysis
4-5	Electrostatics: Coulomb's Law, Gauss's Law, Electric Fields, Electric Flux Density, Electric Potential, Boundary Conditions, and Dielectrics
	Using MAXWELL SV to visualize Electrostatic Phenomenon in practical devices and materials such as capacitors and dielectrics.
6-7	Magnetostatics: Biot-Savart Law, Ampere's Circuital Law, Magnetic Flux Density, Magnetic Forces, Boundary Conditions, and Magnetic Materials
	Using MAXWELL SV to visualize Magnetostatic Phenomenon in practical devices such as electromagnets and loudspeakers.
8-10	Electromagnetic Fields: Faraday's Law, Displacement Current, Maxwell's Equations, Time-Harmonic Fields and Phasors.
11-13	Plane Waves: General Wave Equation, Time-Harmonic Wave Equations, Propagation in Lossless Media, Propagation in Lossless/Lossy Dielectrics, Propagation in Conductors, TE and TM reflection and transmission for Normal

	and Oblique Incidence.
14-15	Wave guiding: Rectangular, dielectric, Optical Fiber
16	Antenna Fundamentals

Course Name and Description:

**COT 781 Capstone Experience for Professional Master of Technology (Var.) I,II,S.** Students formulate, research and execute a project for industry partners to gain hands-on experience under expert guidance while integrating knowledge to solve complex problems. Students write a convincing proposal for a capstone experience, gather and analyze data, draw conclusions and present results. Teams of first- and second-year students may form to work on real-world projects. May be repeated up to three semesters, up to a total of six credit hours. Pr.: Consent of instructor and faculty advisor. Coreq.: COT 702

Rationale:

A capstone experience for the Professional Master of Technology degree is an important centerpiece and credential for future employment or promotion. This course provides students with effective methods to integrate problem solving skills in their professional practice fields with analytical, communication, team work and leadership skills.

Instructor:

Will vary with time, most K-State Salina faculty associated with PMT may teach the course by rotation.

Instructor Qualifications:

See CVs in Appendix B.

PMT Student Learning Outcomes that addressed in this course:

**SLO 1\***

Demonstrate ability to apply project management techniques to the workplace.

**SLO 2**

Demonstrate ability to perform self-directed inquiry, experimentation, and design in one's emphasis area.

**SLO 3**

Demonstrate ability to apply skills and knowledge in one's emphasis area.

**SLO 4**

Demonstrate ability to write clear and effective technical reports, proposals, presentations, and business correspondence.

**SLO 5**

Demonstrate ability to orally communicate technical information to a variety of

audiences.

**SLO 6**

Demonstrate understanding of relevant professional ethics and social responsibility.

\* Assessed at two points of the Capstone Experience, all other SLOs assessed once.

Course Information:

Students will be encouraged to take this course multiple times over two or more semesters for a total of 4-6 credits. The prerequisite for this course is COT 701 and student has already written a proposal to conduct research and that proposal has been reviewed and approved by the graduate committee made up of at least one faculty specialist in the field and one writing instructor/professor. It is expected that the student has already done some preliminary research in the area of interest and has taken or is currently taking the applied research methods course (COT 702). Armed with these tools the student will embark on his/her project. It is strongly desired the proposal is either sponsored by industry or approved by industry experts who have expertise in the field of work.



# **APPENDIX B**

## **Faculty Curriculum Vitae**

**Raju Dandu**  
Engineering Technology Department

**Education:**

B.S./MS	1981	Slovak Technical University, Mechanical Engineering (Thermal and Nuclear Power Engineering)
Ph.D.	1991	North Dakota State University, Mechanical Engineering

**Professional experience: (List current and three most recent positions)**

2008 – Present	Professor of Mechanical Engineering Technology, Kansas State University at Salina
1997 – 2002	Assistant Professor of Mechanical Engineering Technology, Kansas State University at Salina
1993 – 1997	Assistant Professor of Manufacturing Engineering, Program Coordinator, Universidad del Turabo, Gurabo, Puerto Rico.
1991 – 1992	Lecturer, Aero-Manufacturing Engineering Technology, North Dakota State University, Fargo, ND.

**Publications**

1. Dandu, R and DeLeon, J. Kansas State University's ELITE Scholarship Program: Enhancing Lives through Engineering and Technology. 2007 ASEE Annual Conference, June 22-25, Pittsburgh, PA.
2. Dandu, R., Hassan, M. and DeLeon, J. Enhancing Applied Engineering Experience: In Freshman Mechanical Engineering Technology Course. ASEE Annual Conference and Exposition, June 19-23, 2007, Honolulu, HI.
3. DeLeon, J. and Dandu, R. Easing the Transition from the Community College to an Engineering Technology Bachelor's Degree Program. LJME/INTERTECH Conference, Oct. 19-21, 2006, Kean University, NJ.
4. Dandu, R. and Spaulding, G. Reliability Centered Maintenance Workshop. Half day workshop at International Conference on Agile Manufacturing, ICAM-2006, July 19-20, 2006, Norfolk, Virginia.
5. Dandu, R. Design of Energy Efficient Recessed Compact Fluorescent (CFL) Downlight Fixture. ASEE Annual Conference and Exposition, June 18-21 2006, Chicago, IL.

### **Research Experience**

**2002** Received patent for "Fluorescent Lamp for Recessed Ceiling Mounting."

#### **1999 (Sept-Dec)**

Worked with Vircon Consulting Company on a NASA Kennedy Space Center funded project titled "Engineering Study for the Analysis of Design Characteristics and Development of a Control System Implementation Plan for the Mars Simulation Chamber."

#### **1997/98 Summer**

Taught a course in Smart Structures and Mechatronics at University of Missouri-Rolla. NSF funded project for Under Graduate Research Experience in Smart Structures and Mechatronics.

#### **1996 Summer Faculty Fellowship**

Oak Ridge National Laboratories, Oak Ridge, TN. Worked in Ultra-Precision Manufacturing Division. Work Included trouble shooting of operation of piezoelectric fast tool servo of a Diamond Turning Machine.

#### **1995 – 1996**

Co-Investigator of Sandia National Laboratories funded research in the area of Intelligent Materials and Structures. Work involved the use of piezoelectric materials as sensors and actuators in vibration control and damage detection of structures.

### **Industrial Experience**

#### **2007 Summer**

Consultant for Cashco Inc., Ellsworth, KS. Offered training in strain gage application in Product burst test to comply product certification of pressure reducing valves used in gas and petroleum industries.

#### **2006- 08 Summer**

Consultant for Salina Vortex Inc. Recommend conformity assessment solutions for product CE marking and ATEX Certification. Prepared technical documentation, conducted product hazard analysis and testing to meet ATEX and Machinery Directive requirements to comply with CE declaration for European market.

#### **2004-05 Summer**

Offered professional development courses to Tony's Pizza employees in the areas of reliability centered maintenance, condition based monitoring (RCM), Vibration Analysis, Basic Process Controls and Measurement and PLC programming (AB Controllogix Platform).

#### **2001-03 Summer**

Designed and developed energy efficient recessed downlight fixtures. Submitted proposal and prototypes to Pacific Northwest National Laboratory energy procurement competition. Developed business plan, marketing plan and cashflow for Maya Inc. Presented business plan to potential investors (Junction City, Lincoln, Abeline, KTEC, SBIR). Submitted research and development proposal to Kansas Technology Enterprise Corporation (KTEC) and was awarded \$100,000 to develop energy efficient recessed downlights.

# Dr. Patricia E. Ackerman

## Curriculum Vitae

Associate Professor of Language Arts  
Kansas State University  
College of Technology & Aviation  
2310 Centennial Road  
Salina, Kansas 67401  
[ackerman@sal.ksu.edu](mailto:ackerman@sal.ksu.edu)  
785-826-2904

Residence:  
2665 Game Road  
Abilene, KS 67410  
785-479-6060

Academic Mentor  
Dr. F. Todd Goodson

### Education

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**Doctor of Philosophy: Curriculum & Instruction** Conferral Date: May 2007  
Kansas State University College of Education  
Primary Area – Reading & Language Arts Curriculum & Instruction  
Secondary Areas – Composition Rhetoric & Tutoring Literacy  
Manhattan, Kansas  
Major Professor: Dr. F. Todd Goodson

**Published Dissertation Title:** *The Application of Think-Aloud Protocols to Assess Higher Order Learning Strategies Employed During Tutorial Discourse Over College Student Writing.*

**Master of Arts: Liberal Studies** Conferral Date: May 2001  
Fort Hays State University  
Primary Area – English  
Secondary Area – Composition & Rhetoric, Service Learning  
Hays, Kansas

**Bachelor of Arts: English** Conferral Date: May 1978  
Marymount College  
Primary Area – English Literature  
Secondary Areas – Journalism & French  
Salina, Kansas

Primary Language Spoken – English  
Secondary Languages – Spanish (*Peace Corps HILT Training*); French (*Undergraduate Minor*)

### College Teaching Experience

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Associate Professor of Language Arts	2009 - Present
Graduate Faculty Member	2009 - Present
Assistant Professor of Language Arts	2007 - 2009
Writing Center Director	2006 - Present
Instructor of English	2000 - 2007

Kansas State University  
College of Technology & Aviation  
Salina, Kansas  
**Courses Taught:** PHIL 105 Introduction to Critical Thinking, ENGL 100 Expository Writing I, ENGL 200 Expository Writing II, PHIL 390 Business Ethics, COT 299 Mastering Academic Conversations, ENGL 390 Technical Writing, COMM 100 Public Speaking.

**Administrative Duty:** Researched, developed, and currently direct interdisciplinary campus Writing Center.

*Adjunct Instructor of English* 2000  
**Barton County Community College**  
Great Bend, Kansas  
Course Taught: English Composition I

*Adjunct Instructor of English* 1996-2000  
**Cloud County Community College**  
Junction City, Kansas  
Courses Taught: Composition I, Composition II, American Literature, Public Speaking

**Nonacademic Employment Experience**

<i>Freelance Writer</i> – Short fiction, poetry, and magazine articles	<i>2009-Present</i>
<i>Freelance Grant Writing, Marketing, and Development Consultant</i>	1997 – 1999
<i>Director of Marketing &amp; Development</i> Rolling Hills Refuge Wildlife Conservation Center Salina, Kansas	1996 - 1997
Developed long-range marketing & development strategies. Collaborated on operational policies, volunteer programs, and visitor services. Researched, wrote, and implemented grant programs. Networked with local, regional, and state community leaders and marketing consortiums.	
<i>Convention &amp; Visitors Bureau Director</i> City of Abilene, Kansas	1989 – 1996
Maintained Abilene's position as a leader in the Kansas tourism industry. Developed marketing and promotional programs. Represented Abilene to regional, state, and national tourism alliances. Monitored economic indicators to assess development progress. Oversaw operations of a CVB office, year-round Kansas Visitor Information Center, and the Abilene Civic Center. Supervised staff and a thirty member volunteer corps. Prepared and administered annual departmental budget. Researched, wrote, and implemented grant programs.	
<i>Public Information Coordinator</i> Central Kansas Mental Health Center Salina, Kansas	1984 – 1986
Developed and implemented community education programs and public relations strategies for five North Central Kansas counties. Grant writing and implementation.	
<i>Health Educator</i> Salina/Saline County Health Department Salina, Kansas	1981 - 1984
Developed and implemented county-wide educational and licensing programs. Conducted public health educational seminars re: cardio-pulmonary resuscitation, smoking cessation, maternal and child health, and public safety.	
<i>Peace Corps Volunteer</i> United States Govt. – Peace Corps	1980 – 1981
Community development and rural education in Guatemala, Central America	

**Awards & Accomplishments**

Kansas State University ADVANCE Lecture Series Award	2008
Rex McArthur Faculty Fellowship Award	2008
BIG 12 Faculty Fellowship	2008
Project LE/ARN Fellowship w/Iowa State University	2007-2008
K-State at Salina Professor of the Year	2007
Presidential Award for Excellence in Undergraduate Teaching Nominee	2006 & 2010
KSU Salina Advisor of the Year Nominee	2006
Kansas State University Professor of the Week	2005
Marchbanks Memorial Award for Teaching Excellence	2005
KSU at Salina Professor of the Year Nominee	2004
Kansas State University Community Service Grant Recipient	2003
American Red Cross Clara Barton Women of Achievement Award	1999

**Fellowships**

A Room of Her Own Foundation Writing Retreat Fellowship	2009
National Writing Project Professional Writing Retreat Fellowship	2009
Tilford Multicultural Grant Fellow – <i>Interactive Theatre for Social Change</i>	2008
Project LEA/RN Partnership w/University of Iowa	2007-2008
Coffman Leadership Institute Fellow	2006
Tilford Multicultural Gant Fellow - <i>Storytelling as a Pedagogical Tool</i>	2006
International Writing Center Association Institute Fellow	2005
Wakonse Conference on College Teaching Fellow	2005
National Writing Project Fellow	2003 & 2004

**Leadership & Service to Kansas State University & Profession**

Pine Ridge Reservation Service Learning Trip	2009
National Day on Writing Event – <i>Advisor</i>	2009
K-State at Salina AS&B President’s Showcase – <i>Co-chair</i>	2009
K-State at Salina Project Salina Food Drive – <i>Campaign Chair</i>	2007-2009
Faculty Senate E-Portfolio Task Force	2009-2010
Dean’s Campus Enhancement Team	2009
Kansas Writing Project Leadership Coalition and Inquiry Team	2008-2010
K-State at Salina African American Read-In Volunteer	2009
Unmanned Aerial Systems Online Professional Journal ( <i>Copy Editor</i> )	2008-2010
K-State Graduate Faculty Member	2008-2010
K-State Collegiate Assessment of Academic Proficiency Participant	2009
K-State University Ethics Work Group	2009-2010
K-State at Salina Creative Writing Alliance ( <i>Advisor</i> )	2008-2010
Midwest Writing Center Association – Board Member & 2009 Conference Committee	2008-2011
Midwest Writing Center Association – Kansas Consortium ( <i>Chair</i> )	2007-2010
Provost’s First Year Seminar Curriculum Task Force	2008-2009
Provost’s Interdisciplinary Programs Task Force	2008
First Year Seminar Pilot Course – Teaching Team	2008-2009
K-State at Salina Career Committee	2007-2008
Reference & Instructional Librarian Search Committee	2008
Earth Day Multicultural Planning Committee	2007
K-State at Salina Master of Science In Technology Task Force	2007-2010
K-State at Salina First Year Experience Curriculum Task Force	2007-2009
Aviation Department Head Search Committee	2007
K-State at Salina Departmental Committee on Planning	2007-2009
Kansas State University Changing Lives Campaign ( <i>Campus Co-Chair</i> )	2006
KSU Salina Student Newspaper Advisor ( <i>On The Record</i> )	2004 – 2009
Kansas State University Honor Council	2005 – 2009
National Writing Project ( <i>Teacher Consultant</i> )	2003-2010
21 <sup>st</sup> Century Educational Grant Participant ( <i>Service Learning Curriculum</i> )	2003 – 2008
KSU Salina Professional Day Committee ( <i>Co-Chair 2007-2009</i> )	2005 – 2010
KSU Salina Aviation Department Head Five Year Review ( <i>Chair</i> )	2006
Kansas State University Faculty Senator	2002 – 2005
KSU Salina Socrates Café Coordinator	2003 – 2005
KSU Academic Affairs Committee ( <i>Co-Chair</i> )	2004
Flint Hills Writing Project Teacher Consultant	2002-2010
KSU Faculty Senate Leadership Committee	2003 - 2004
KSU Salina By Laws Committee	2005
KSU Salina Course & Curriculum Committee ( <i>Chair</i> )	2002 – 2004
KSU Salina College Advancement & Planning Committee	2002 – 2005
KSU Salina Open House Participation ( <i>Planning Committee 2002</i> )	2002 – 2010
KSU Salina Multi Cultural Affairs Committee	2001 – 2004
KSU Salina Science Olympiad ( <i>Judge</i> )	2002
KSU Salina Recycling Task Force	2001 - 2002

**Leadership & Service to Community**

Abilene Kansas Toys For Tots Campaign	1998 - 2010
Central Kansas Council of Girl Scouts Board Member	2000 – 2002
Arts Council of Dickinson County Classroom Educator	1997 - 2001
Travel Industry Association of Kansas Board Member ( <i>'96 President</i> )	1989 – 1997
Northeast Kansas Tourism Region Board Member ( <i>'91-93 President</i> )	1989 – 1997
I-70 Association of Kansas Board Member ( <i>'94 President</i> )	1989 – 1997
White House Conference on Tourism State Delegate ( <i>Washington, D.C.</i> )	1995
Great Plains Theatre Festival Board Member ( <i>'96 President</i> )	1994 – 1998
Kansas Sports Hall of Fame Board Member	1994 – 1996
Abilene Area Chamber of Commerce Board Member	1992 – 1994
Abilene Area United Way Board Member	1991 – 1994
St. Andrew’s Home & School Association President	1990 – 1992
Eisenhower Centennial State & National Planning Committees	1990
Big Brothers/Big Sisters of Salina Board Member	1983 - 1984

**Professional Memberships & Affiliations**

A Room of Her Own Womens' Writing Alliance – 2009-2010  
 The Tilford Group on Multicultural Competencies – 2006 & 2008 Grant Recipient  
 Wakonse Conference on College Teaching - 2005 Conference Presenter  
 National Writing Project – National Conference Delegate 2005 & 2009 & 2010  
 Flint Hills Writing Project – Institute Fellow and Teacher Consultant 2002-Present  
 Midwest Writing Center Association – 2008 Coordinator of the Kansas MWCA Consortium,  
 2009 - 2011 Board Member  
 International Writing Center Association – 2007 & 2008 Annual Conference Presenter  
 Kansas Association of Teachers of English – 2004, 2007, & 2008 Conference Presenter  
 Conference on College Composition and Communication – 2008 & 2009 Annual Conference Presenter  
 National Council of Teachers of English – ALAN Review- Young Adult Literature Book Reviewer 2008-2009  
 National Service Learning Council (Past Member)

**Professional Conferences Attended**

Midwest Writing Center Association, Rapid City, SD	2009
A Room of Her Own Foundation Writing Retreat. <i>Abiqui, NM</i>	2009
National Writing Project Professional Writing Retreat, <i>Tubac, AZ</i>	2009
K-State Ethical Reasoning Workshop. <i>Manhattan, KS</i>	2009
K-State Lecture Series Teach Me: <i>I Dare You! Changing Student Attitudes</i>	2009
Kansas Writing Project Grant Writing Retreat. <i>Rock Springs Ranch</i>	2009
NCTE Webinar <i>Powerful English: Innovative Practices in Diverse 21<sup>st</sup> Century Classrooms</i>	2008
National Writing Project Holocaust Educator Seminar, <i>New York, NY</i>	2008
European Writing Center Association Annual Conference, <i>Frieburg, Germany</i>	2008
College Conference on Composition and Communication, <i>New Orleans, LA</i>	2008
Midwest Writing Center Association, <i>Kansas City, MO</i>	2007
Kansas Association of Teachers of English, <i>Wichita, KS</i>	2007
International Writing Center Association Annual Conference, <i>Houston, TX &amp; Las Vegas, NV</i>	2007 & 2008
KSU Annual Leadership Development Seminars	2005 & 2006
James R. Coffman Leadership Institute, <i>Rock Springs Ranch, KS</i>	2006
Conference on College Composition and Communication, <i>Chicago, IL</i>	2006
International Writing Center Association Annual Conference, <i>Minneapolis, MN</i>	2005
Wakonse Conference on College Teaching, <i>Muskogon, MI</i>	2005
International Writing Center Association Summer Institute, <i>Lawrence, KS</i>	2005
Conference on College Composition and Communication, <i>San Francisco, CA</i>	2005
National Council of Teachers of English Conference, <i>Indianapolis, IN</i>	2004
National Writing Project Annual Conference, <i>Indianapolis, IN</i>	2004
Kansas Association of Teachers of English Annual Mtg., <i>Wichita, KS</i>	2003 - 2005
National Writing Project Annual Convention, <i>Washington, D.C.</i>	2005 & 2009
Flint Hills Writing Project Summer Institute, <i>Manhattan, KS</i>	2003 & 2004
National Service Learning Annual Conference, <i>Minneapolis, MN</i>	2003

**Professional Publications and Presentations**

- Ackerman, Patricia E. *Flash Fiction Workshop*. K-State at Salina. November 2009.
- \* Ackerman, Patricia E., Jung Oh, Matt Pismalto, and Kevin McCurdy. *Writing Center Collaboration with Chromotography Paper in CHEM 110 Class*. Midwest Writing Center Association. October 2009. Rapid City, SD.
  - \* Ackerman, Patricia E. *Tutor/Student Expectations in College Writing Center Tutorial Sessions*. Midwest Writing Center Association Bi-Annual Conference. October 2009. Rapid City, SD.
  - \* Ackerman, Patricia E. *Providing College-Bound Students with an Alternative Lens Through Which to Examine Their Own Writing Abilities*. Third Annual Voices In the Village Conference; Southern Arizona Writing Project, April 25, 2009. Tuscon, AZ.
  - \* Ackerman, Patricia E. and Alysia Starkey. *Navigating the High Road of Academic Integrity*, International Writing Center Association Annual Conference, March 2009 Las Vegas, NV.
  - Ackerman, Patricia, Mitch Barnes, Tom Mertz, Mike Wilson. *Our College Role: Preparing Students in the Salina Market for Technology Education in a University Environment*. K-State at Salina Faculty Panel Presentation. November 2008.
  - \* Ackerman, Patricia E. and Alysia Starkey. *Navigating the High Road of Academic Integrity*, Conference on College Composition and Communication, October 2008. San Francisco, CA.

- \* Ackerman, Patricia and Alysia Starkey. *Navigating the High Road of Academic Integrity*, Kansas Association of Teachers of English, October 2008. Wichita, KS.
- \* Ackerman, Patricia. *YA Book Reviews*. *The ALAN Review*, 35:3:A1-A8. Assembly on Literature for Adolescents of the National Council of Teachers of English. Summer 2008.
- \* Ackerman, Patricia E. *Influencing and Assessing Tutor Perspective Through Reflective Thinking*, European Writing Center Association Conference, June 2008, Frieburg, Germany.
- \* Ackerman, Patricia, *Influencing and Assessing Tutor Perspective Through Reflective Thinking* Conference on College Composition and Communication, April 2008. New Orleans, LA.
- \* Ackerman, Patricia, *Thinking Aloud about Tutor Literacies*, Kansas Association of Teachers of English Annual Conf., October 2007. Wichita, KS.
- \* Ackerman, Patricia, *Think-Aloud Protocols as Tutor Training & Assessment Methodology* Midwest Writing Center Association Annual Conf., October 2007. Kansas City, MO.
- Ackerman, Patricia, *The Application of Think-Aloud Protocols to Assess Higher Order Learning Strategies Employed During Tutorial Discourse Over College Student Writing*. Diss. Kansas State University, 2007, Manhattan, KS.
- \* Ackerman, Patricia, *Think-Aloud Protocols as Tutor Training & Assessment Methodology*, International Writing Center Association Annual Conference, April 2007. Houston, TX.
- Ackerman, Patricia. *Socratic Dialogue as a Tool for Student Engagement*. KSU Salina Teach On Workshop, August 15, 2006. Salina, KS.
- \* Ackerman, Patricia, Brockway, Kathy, Spliechal, Jimmy, Leite, Pedro. *Tapping into the Power of Community Classrooms*. Kansas State University at Salina Professional Day. January 6, 2005, Salina, KS.
- Ackerman, Patricia, *Service Learning in Writing Curriculum*s. Flint Hills Writing Project Summer Institute, June 2005. Manhattan, KS.
- Ackerman, Patricia, *Service Learning in College Writing Classrooms*, Wakonse Conference on College Teaching, 2005, Muskegon, MI.
- \* Ackerman, Patricia, Brockway, Kathy, Dandu, Raju, Leite, Pedro, and Spliechal, Jimmy. *Tapping into the Power of Community Classrooms*. ASEE Midwest Section Conference, September 31, 2004. Pittsburg, KS
- \* Ackerman, Patricia, Beasley, Ginny, and Greumbacher, Elaine. *Building Community Writing Classrooms Through the National Writing Project*. Kansas Association of Teachers of English Annual Conference. October 2003 and October 2004. Wichita, KS
- Ackerman, Patricia. *Service Learning in Writing Curriculum*s. Kansas Service Learning Symposium. February 28, 2003. Barton County Community College. Great Bend, KS
- Ackerman, Patricia. *Service Learning in Writing Curriculum*s. Fall English Teachers Workshop, Fort Hays State University. September 2001. Hays, KS.

\* *Peer Reviewed Invitations*



# R. Kurt Barnhart, Ph.D.

## Curriculum Vitae

10536 E. Magnolia Rd.  
Gypsum KS, 67448  
(785) 536-4489 Home (785) 826-2972 Work Email: kurtb@ksu.edu  
Professor and Aviation Department Head, Kansas State University

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### EDUCATION

**Ph.D. in Educational Administration**, December, 2002  
Indiana State University, Terre Haute, IN

**Master of Business Administration in Aviation**, December 1994,  
Embry-Riddle Aeronautical University, Daytona Beach FL (Resident course)

**Bachelor of Science, Aviation Administration** (emphasis in flight and maintenance mgmt.), May 1991, Purdue University, West Lafayette, IN

**Associate of Science, Aviation Maintenance Technology**, Cum Laude,  
May 1989, Vincennes University, Vincennes, IN

### I. Recent Teaching

#### A. Scheduled and arranged classes taught\*

Course Name	Prefix and Number	Credit Hours	Semester or Session	Number of Students
General Aviation Operations (Covers: the GA industry and role in the transportation system as well as business principles of FBO management).	AST 205	3.0	FALL 2006	36
Beechcraft King Air 200/B200 Flight (Flight Simulation Course, leading to the High Altitude Endorsement)	AST 315	3.0	FALL 2006	6
Aviation Risk Analysis (Aviation Safety course covering accident investigation/prevention)	AST 425	3.0	FALL 2006	28
General Aviation Operations	AST 205	3.0	SPRING 2006	42
General Aviation Operations	AST 205-301	3.0	SPRING 2006	2
Beechcraft King Air 200/B200 Flight	AST 315	3.0	SPRING 2006	20
Aviation Risk Analysis	AST 425	3.0	SPRING 2006	34

\*Other courses taught include: Cessna Citation Ground School (CE 550/1), Aircraft Systems I, Instrument/Commercial Theory, Private Pilot Theory (Aviation Fundamentals), Aviation Topics (undergraduate and graduate), Advanced Navigation, Air Transportation (Airline Operations).

B. Independent study enrollments completed (including course name, prefix, and number; number of students; and date of course completion for each item).

C. Dissertation, professional research project, Educational Specialist, thesis, and master's examination committees served on or chaired (including name of student, name of degree, position on committee, and dates of committee formation and final document approval for each item)

**Ph.D. Dissertation Committee Member, CURRICULUM INSTRUCTN AND MEDIA TECH, Title: *Assessing the need for airport board member training in Indiana*, Proposal. (January 10, 2006 - Present). Advised R. Troy Allen through to completion**

D. Academic Advising

**Advised 50 Undergraduate students during the 2005-2006 academic year.**

**Advised 59 Undergraduate students during the 2004-2005 academic year.**

E. Courses developed (including course name, prefix, and number and date of university approval for each item)

**AST 425- Aviation Risk Analysis, January 1997**

**AST 205- 301, General Aviation Operations- distance education course, May 1999**

**AST 211- Aircraft Systems I- independent study course, June 1997**

## **II. Research, Scholarship, and Other Creative Activity**

A. Articles published (including complete bibliographic information--author(s) in published order, title, journal, volume, issue number, month, year, and pages--and a synopsis of 20 words or less for each item)

**UAS and The GA pilot, Editorial. *General Aviation News*, February 2010.**

**Promoting UAS in general aviation**

**What do you need to know about UAS? *General Aviation News*, January 2010.**

**Article introducing pilots to the future of UAS in the NAS.**

**What does it take to grow the next generation? *GANews and Flyer*, 2004.**

**Published results of survey regarding how to get more young people involved in aviation.**

**Cold Weather Problems. *Flying Magazine*, December 2005**

**Narrative of an incident while flying**

**(2004). Adaption and Innovation in Flight Training- The Benefits of Cognitive Diversity. *Journal of Aviation/Aerospace Engineering Review*, 13.**

**Application of the Kirton Adaption - Innovation Theory of Cognitive Style to the flight instruction environment of higher education**

**(2004). Mind-set of Safety. *NAFI Mentor*, 2004.**

**Results of an interview with bush pilot operators and what lessons can be learned for all operators of light aircraft.**

**Barnhart, R. (2003). Adaption-Innovation Theory of Cognitive Style in Aviation. *International Journal of Applied Aviation Studies*, 3, 105-112.**

**Study applying the KAI theory of Cognitive Style to an Aviation setting**

**Allen, R., & Barnhart, R. Influencing Factors in Degree Selection for Aviation Majors at Indiana State University. *Journal of Aviation/Aerospace Education & Research*.**

**Allen, R., & Barnhart, R. Influencing Factors in Degree Selection for Aviation Majors at Indiana State University. *Journal of Aviation/Aerospace Education & Research*. Vol. 15. No. 3**

**Reporting the results of surveys of ISU students regarding why they chose to major in aviation. published Spring edition, 2006.**

**Barnhart, Richard K., An Exploration into the Benefits and Costs Associated with the Implementation of an In-House Parts Acquisition Facility By the Embry-Riddle Aeronautical University Engine Repair Station.**

**Graduate Research Project (1994) which was implemented by ERAU resulting in over \$50,000 in cost savings to the University each year- over \$500,000 saved to date.**

B. Electronic media materials published (e.g., CD-ROMs, Internet; include author(s) in published order, URL/URN; title, place of publication, publisher, date of publication, and a description of 20 words or less for each item).

**Gleim Publications, Gainesville FL/Terre Haute, IN. (February 25, 2004 - May 31, 2005).**

***Gleim's Online Inspection Authorization Renewal Course (IARC)*- Developed first ever online renewal option for aircraft mechanics to renew their inspection authorization. This project positively affected thousands of mechanics around the country.**

C. Conference presentations made (not already listed under section III, letter E; including presenter(s) in published order, title of presentation, organization, location, and date for each item)

**Barnhart, R. Kurt "sUAS and Emergency Response- A strategy for Kansas and beyond". Albuquerque NM. (December 2009).**

**A presentation given to the 11<sup>th</sup> annual TAAC UAS conference- the largest conference of it's kind in North America.**

**Barnhart, R. Kurt, "A Strategy for UAS Airspace Access", Wichita KS. (April 2009).**

**A presentation to the 4<sup>th</sup> Kansas UAV Symposium on strategy to integrate Unmanned Aerial Systems into the National Airspace System.**

**Barnhart, R. Kurt, "Kansas Strategy for Small UAS Airspace Access", Grand Forks ND. (May 2009).**

**A presentation to the 2009 Unmanned Aerial Systems Summit on Kansas' UAS NAS integration plan.**

**Barnhart, R. Kurt, "Non-Verbal communication in the cockpit- implications of team transfer research", Wichita KS. (October 2007).**

**Major presentation to 500 corporate pilots where flight departments from 84 of the top fortune 500 companies were represented. Presentation dealt with helping pilots set a positive cockpit**

climate especially when they are faced with an inexperienced copilot in this age of high pilot demand. Other featured speakers included Astronaut Gene Cernan (the last man on the moon), other internationally renown speakers- Bob Hoover was in attendance.

Barnhart, R., & Allen, R., "*Influencing Factors in Degree Selection for Aviation Majors at Indiana State University*", Champaign IL. (September 30, 2005).

Results of survey research into what the influencing factors were in students who chose to major in aviation at Indiana State University

Barnhart, R., "*Aiding Classroom Delivery with Guest Speakers at a Distance*", Champaign IL. (September 29, 2005).

Using conference telephone technology to bring experts into the classroom

Barnhart, R., "*Theory of Adaption-Innovation in flight training*", UAA, Dayton OH. (October 24, 2003). Presentation demonstrating the KAI theory of cognitive style in the aviation flight instruction environment. First-ever known aviation application for this theory.

Barnhart, R., & O'Connor, T., "*Considering Cognitive Diversity as You Design Learning*", ISU, HMSU. (February 2003).

Concepts of designing the measurement of cognitive style in learning

Barnhart, R., Bitzegaio, B., & Fauber, B., "*Measuring Impact of Using KAI for Student development*", ISU, HMSU. (February 2003).

How the COT plans to Use Kirton-Adaptive- Innovative Theory (KAI)

#### D. Books and journals edited and/or reviewed

Barnhart, R. Kurt (2009). *Aviation in Developing Countries: The Role of the Collegiate Aviation Community*. For the International Journal of Applied Aviation Studies.

Reviewer

Barnhart, R. Kurt (2005). *Astronauts as Audiences: Characteristics of the First Space Communities*. (pp. 14). Oklahoma City: FAA, International Journal of Applied Aviation Studies.

Reviewer

Barnhart, R. Kurt (2006). *A Case-Based Understanding of Critical Incidents in General Aviation*. To be published

Reviewer

Barnhart, R. Kurt (2006). *The Council on Aviation Accreditation, Part One: Historical Foundation & Part Two: Contemporary Issues*. To be published.

Reviewer

E. Reviews published (including complete bibliographic information--author(s) in published order, title, journal, volume, issue number, date, and pages--and title(s) or description of work(s) reviewed for each item)

Barnhart, R. (2003). *The Field Guide to Human Error Investigations*. (Vol. 8, pp. 4). Omaha Nebraska: Journal of Air Transportation.

**Summarized a book relating a new concept in the mindset of aviation safety**

F. Other contributions to published works (including complete bibliographic information as indicated above and a brief description of the contribution for each item)

**Barnhart, R. (2002). *A threat to Integrity*. (Vol. Summer 02, pp. 1). Auburn AL: University Aviation Association.**

**A call to more closely examine cheating in term papers for undergraduate courses**

**Barnhart, R. (2002). *Training and Education*. (Vol. 2002 Encyclopedia of Aviation, pp. 2). Pasadena CA: Salem Press, Encyclopedia of Aviation.**

**Summary of Aviation training and education**

**Barnhart, R. (2002). *Emergency Procedures*. (Vol. Summer 2002, pp. 2). Pasadena CA: Salem Press, Encyclopedia of Aviation.**

**Summary of Emergency Procedures in Aviation**

**Barnhart, R. (2002). *Flight Plans*. (Vol. Summer 2002, pp. 1). Pasadena CA: Salem Press Encyclopedia of Aviation.**

**Summary of what flight plans are and what they are used for**

**Barnhart, R. (2000). *Ascend to Flight Training*. (Vol. April 2000, pp. 3). Ann Arbor MI: Tech Directions.**

**Article on ISU's new King Air Simulator**

G. Research, scholarship, or creativity awards received (including title of award, sponsor, and date for each item).

**Dr. Bill Melvin Award for Scholarship Excellence in Educational Administration, ISU, 2001**

**J. Fred Swalls Award in Educational Administration, ISU, 2001**

H. Extramural grants and contracts awarded (including project director(s), other project participants, project title, amount of award, sponsoring agency, date of award, and a statement of purpose of project in 20 words or less for each item)

**Principal Investigator- Wolf Aviation Fund, Spring 2006- Grant to investigate establishing an Indiana Youth Aviation Association- \$1,500.00**

**Principal Investigator- SEDIC Grant for Establishing UAS Program Office, Salina KS, May 2008- \$100,000**

**Principal Investigator- Flint Hills Solutions Grant to Begin Phase one of UAS Program- \$50,000**

**Principal Investigator- Air Force Office of Scientific Research, 2008- Federal Grant to begin Unmanned Aerial Systems Laboratory- \$400,000**

**Principal Investigator- DOD Appropriation for UAS TEC at Salina KS- \$800,000**

I. Extramural grant and contract proposals submitted (including project director(s), project title, receiving agency, and date of submission for each item)

**Flight Instructor Institute- March 1998, Proposal before the U.S. House Committee on Transportation & Infrastructure- not funded.**

J. Intramural grants awarded (including project director(s), project title, amount of award, and sponsor for each item)

**Barnhart, R. Kurt, "ISU Distinctive Programs Grant" Grant resulted in a \$100,000 award and in the department being named as one of 2 programs in the College as "Regionally Distinctive"**

**Barnhart, R., \$500 CTL development grant for AST 425, ISU.  
Date Awarded: January 2003**

K. Research in progress (indicate start date, nature of research, purpose/goal (e.g., publication, departmental improvements); targeted completion date)

**Barnhart, R. Kurt, Fall 2008, working on a project to launch an *Unmanned Aerial Systems Journal*.  
At K-State.**

### III. Professional Service

On Campus:

A. Organizational offices held (including title of office, professional organization, and dates of service for each item)

**Indiana State University, Officer, College of Technology Faculty Council. (September 01, 2005 - May 01, 2006).**

**Responsibilities: Secretary 2005/2006**

**Indiana State University, College of Technology Promotion & Tenure Committee. (Sept. 01, 2006 – Present).**

**Responsibilities: Committee Chair**

B. Committee memberships and offices held (including name of committee, professional organization, office, and dates of service for each item)

**Indiana State University, Officer, College of Technology Faculty Affairs Committee. (September 01, 2004 - May 01, 2006).**

**Indiana State University, Member, University Graduate Student Appeals Committee. (Fall 2005 – present).**

**Indiana State University, Member, College of Technology Promotion & Tenure Committee (School year 2006 -7)**

C. Special organizational responsibilities performed, such as contributing, managing, or section editorships or juror duties in a competition (including nature of responsibility, professional organization, and dates of service for each item)

**College of Technology "Discover ISU" Department coordinator, Program to introduce Middle School Students to Careers in Technology. Fall 2006.**

**Department coordinator for “Tech Trek,” program to introduce High School Students to Indiana State University. Coordinator from 1996 - 2003**

D. Professional service awards received (including title of award, sponsor, date, and a brief explanation of the basis of the award for each item)

**National Association of Flight Instructors- Master Instructor Award, 2003 - Present**

Off Campus:

E. Governing body memberships and offices held (including name of body, office, and dates of service for each item)

**National: Board of Trustee Member- University Aviation Association- Elected to three year term beginning fall of 2008.**

**Regional: Kansas UAS Consortium Chair- Panel made up of members from Kansas industry, academia, and the military to promote Unmanned Aerial Systems in Kansas and beyond.**

**Regional: President/Elect/Past, Sullivan County Board of Aviation Commissioners. (August 01, 2002 - Present).**

**Responsibilities: Chair public meetings, assist with grant administration and oversight of airport. Provided oversight of \$1.1 million runway/taxiway/ramp rehabilitation project during 2005. Oversee operating budget.**

**Comments: appointee**

**National: Officer, University Aviation Association Distance Learning Committee Chair. (October 01, 2005 - October 01, 2006).**

**Responsibilities: Organize and oversee the activities of the UAA Distance Learning Committee**

**Comments: Committee Chair**

F. Special responsibilities performed, such as administrative assignments (including title or nature of responsibility and dates of service for each item)

**Fall 2006, Department Assignment- assisted with investigation of department acquiring its own flight school.**

**Fall 2006, Department Assignment- Administered the change of department’s name from “Department of Aerospace Technology” to “Department of Aviation Technology”.**

G. Student organizations sponsored (including name of organization and dates of service for each item)

**Indiana State University, Flying Sycamores. (December 05, 2004 - May 01, 2005).**

**Comments: Advisor for Flying Sycamores until May 2005**

H. Other Professional Service

**Consulting Editor for the Journal of Air Transportation, and the International Journal of Applied Aviation Studies**

**Indiana State University, Member, College of Graduate Studies appeals Committee. (October 01, 2005 - Present).**

**Responsibilities: meet to review appeals from graduate students**

**Comments: current term expires May 2007**

**Indiana State University, Member, College of Technology Library Committee. (January 31, 2005 - May 01, 2006).**

**Indiana State University, Member, Speaker Series Committee. (September 01, 2004 - December 01, 2004).**

**Comments: Apollo 13 Astronaut Jim Lovell**

I. Consulting

**Dolphin Express Airlines. Consultant to Start-Up Airline, Spring 1994- provided airline maintenance recommendations.**

#### **IV. Professional Development**

A. For-credit courses and degree programs completed (including course or degree name, credit hours, institution, and date of completion for each item)

**Flight Safety International. (June 11, 2003).**

**Cessna Citation Co-pilot training**

**King Air B200 PIC training Spring of 1998, Flight Safety International**

**Certified Flight Instructor Rating (CFII-MEI), Glider/Seaplane Pilot- Certificates continually maintained since the spring of 1990**

B. Seminars, workshops, and teleconferences attended (including title, sponsor, location, and dates for each item)

**Seeking Funding, Finding Success, Office of Sponsored Programs, ISU. (January 05, 2004 - January 07, 2004).**

**Initial grant-writing workshop**

C. Conferences attended but not mentioned elsewhere in this report (including organization, location, and dates for each item)

**Aerospace Industry Advisory Board, Department of Aerospace Technology, College of Technology ATC. (April 30, 2004 - Present).**

**Re-convened the AST advisory board with good results**

**Inspection Authorization Renewal, Federal Aviation Administration, Springfield IL. (February 25, 1999 - Present).**

**Review of Federal Aviation Regulations**

**FAA Flight Instructor (CFII-MEI)- Continuous Renewal from 1990 to present.**



## Oh, Jung Ran

Department of Arts, Sciences, and Business  
 Kansas State University at Salina  
 2310 Centennial Road, Salina Kansas 67401-8196

Tel: 785.826.2815  
 Fax: 785.826.2627  
 e-mail: [jroh@sal.ksu.edu](mailto:jroh@sal.ksu.edu)

### Education

Ph.D.	October 1989	University of California, Los Angeles
B.S.	February 1981	Sogang University, Seoul, Korea, <i>Cum Laude</i>

### Professional Experience

#### Professor of Chemistry: Kansas State University at Salina, Salina, KS (1998-present)

1998-2004, Assistant Prof.; 2004-09, Associate Prof.; 2009-Present; Professor, Graduate Faculty  
 Teach introductory chemistry, general chemistry, and general organic chemistry courses with associated laboratories; work on interdisciplinary teaching/learning projects including collaborations with library and writing center (e.g. "Peer Review of Teaching", "Information Fluency", "Writing across Curriculum"); and serve on various professional society, university, and community committees

#### Visiting Assistant Professor: Claremont McKenna, Pitzer, Scripps Colleges, CA (1997-1998)

Teach general chemistry courses and serve as a senior thesis reader for the B.A. degree

#### Fixed Term Assistant Professor: Minnesota State University at Mankato, MN (1994-1997)

Teach introductory chemistry, general chemistry, chemistry in society, organic chemistry, and graduate level inorganic preparations courses with associated lab; directed undergraduate research and serve as panelist for "introduction to research" course; served on University cultural diversity liaison

#### American Society for Engineering Education Postdoctoral Research Fellow

#### Naval Air Warfare Weapons Center, China Lake, CA (1992-1994)

Research in organometallic/materials science chemistry focusing on synthesis of precursors for chemical vapor deposition of semiconductors

#### Postdoctoral Research Associate: Ohio State University, Columbus, OH (1989-1992)

Research in metal cluster and metallocene chemistry

### Honors, Awards, and Certificates (selected)

2010	Department of Defense (DoD), Science, Mathematics, And Research for Transformation (SMART) Scholarship for Service program, Review Panelist, Washington D.C. January 29-30
2009	Research Site for Educators in Chemistry (RSEC), visiting faculty fellowship Summer fellowship sponsored by NSF and hosted by Wichita State University
2009	Rex and Jean McArthur Family Faculty Fellow Award at Kansas State University at Salina
2008	Certificate of Kansas State University James Coffman Leadership Institute participation
2006	Peer Review of Teaching Faculty Fellow at Kansas State University
2005	Big XII Fellowship Award: University at Kansas as host institution
2005-2007	4 <sup>th</sup> , 5 <sup>th</sup> , 6 <sup>th</sup> Global Colloquium on Engineering Education presentations, invited by American Society for Engineering Education, ASEE, to present ASEE national conference presentations
2004	Wakonse Teaching Fellow, selected as one of six Kansas State University contingent
2003	NSF funded Chemical Science Workshop, "Environmental Chemistry" Atlanta, GA June 1-6
1999, 2000	Certificates for Faculty participants in Plains Academy Co-Op FIPSE projects for curriculum revision and technology enhancement

### Scholarship and Creative Endeavors

#### Selected publications

- McCarthy, D. A.; Bauer, J.; Hong, F.; Oh, J.; Deng, H.; Lie, J.; Shore, S. "Formation of  $H_2Ru_6(CO)_{17}$  from  $H_2Ru_6(CO)_{18}$  an improved synthesis of  $HRu_6(CO)_{17}B$ ", *J. of Organometallic Chemistry* 1998, 550, 309-314
- Oh, J.; Kissick, B.; Starkey, A.; Knopp, K. "New Literacies in Collaboration: How K-State at Salina University faculty and librarians are traveling parallel paths with languages, research, and information literacy skills: a model for your school," Kansas Association of Teachers of English (KATE) Updates, 2007, Vol. 25, No. 2 P4-5 (contributing paper)

#### Invited presentations (some with proceeding publications)

- Oh, J.; Kissick, B.; Starkey, A. "Fostering Students to be Lifelong Learners with Science Literacy, Information Literacy, and Communication Skills," GC 2007-248, 6<sup>th</sup> Global Colloquium on Engineering Education, Istanbul, Turkey, October 1-4, 2007 (presentation with proceeding)

- Oh, J.; Collins, J.; Kissick, B.; Starkey, A. "Faculty Librarian Partnership for Information Fluency Instruction: Planning and Preliminary Assessment," GC 2006-316 P73, 5<sup>th</sup> Global Colloquium on Engineering Education, Rio de Janeiro, Brazil, October 9-12, 2006 (presentation with proceeding)
- Oh, J. "Connecting Learning with Students' Interest and Daily Lives with Project Assignment," GC 2005-253 cluster E3-learning, 4<sup>th</sup> Global Colloquium on Engineering Education, Sydney, Australia, September 28-30, 2005 (presentation with proceeding)
- Oh, J.; Collins, J.; Kissick, B.; Starkey, A. (2006) "Collaborative Integration of Information Literacy: A Progress Report from General Chemistry Course," Presentation-P251, Biennial Conference on Chemical Education (BCCE), Purdue University, July 30-August 3, 2006 (web publication at American Chemical Society, Division of Chemical Information site: <http://acscinf.org/dbx/mtgs/BCCE/2006/index.asp>)

#### Selected Presentations (some with proceeding publications)

- Oh, J.; Mitchell, K.; Dain, R.; Van Stipdonk, M. (2010) "Generation and Investigation of Alkali Metal Halate Clusters with the Formula,  $[M(MXO_3)_n]^+$  (M=Na and K; X=Cl, Br, and I) Using Electrospray Ionization Mass Spectrometry" INOR-804, 239<sup>th</sup> American Chemical Society (ACS) national meeting, San Francisco, CA, March 21-25
- Oh, J. (2008) "Retrospective Professional Development Reflection as the only Chemistry Instructor in a College for Collaborative Teaching and Learning Environment" CHED-0415, 236<sup>th</sup> American Chemical Society national meeting, Philadelphia, August 17-21
- Oh, J.; Kissick, B. (2008) "The journey to build a 21st century faculty-librarian relationship: A retrospective case study reflected with Criteria 2E and J", Presentation and Proceeding AC 2008-081 (ETD), American Society for Engineering Education (ASEE) National conference, Pittsburgh, PA, June 22-25
- Oh, J.; Collins, J. (2008) "Using Virtual Teams to Improve Information Literacy and Distributed Cognition in a Collaborated Writing and General Chemistry Assignment", Presentation and Proceeding AC 2008-1334 (ERM), American Society for Engineering Education National conf., Pittsburgh, PA, June 22-25
- Oh, J. (2006) "Collaborative Integration of Information Literacy: Lessons from Faculty, Librarian, and Students", 6B, 18<sup>th</sup> Lilly Conference on College/University Teaching, Pomona, CA, March 17-19
- Oh, J.; Kissick, B.; Collins, J.; Starkey, A. (2005) "The Knowledge Workers of the Future and Today's Information-Literate Students: Models for Improving Your Students' Use of Discipline-Specific Databases," Presentation and Proceeding AC 2005-1813 (LED), 2005 American Society for Engineering Education National conference, Portland, OR, June 12-15
- Guzek, F.; Barnard, K.; Leite, P.; Oh, J.; Collins, J.; Simmonds, G. (2005) "The Use of Virtual Teams as an Instructional Tool: Learning Enhancement and Technological Skill-Building" L'Ecole Superior D'Commerce, Clermont-Ferrand, France. March 21
- Oh, J.; Collins, J.; Kissick, B.; Starkey, A. (2005) "Collaborative Integration of Information Literacy into the 21<sup>st</sup> Century Chemistry Course," CHED-0290, 230<sup>th</sup> American Chemical Society national meeting, Washington D.C., August 28-September 1
- Barnard, K.; Leite, P.; Oh, J.; Collins, J.; Simmonds, G. (2004) "Online Hybrid Courses Using University Developed Software: Impetus for Cross-Curricular Collaboration" Session A-05, College Composition and Communication Conference, San Antonio, TX, March 24-27, 2004

#### Grant related activities

- Big XII Faculty Fellowship, hosted by University of Kansas, "The Courage to Collaborate Defining and Implementing Information Literacy Across Curriculum" \$2,043 funded. (2005-6): submitted DVD report
- Served as transferred Co-PI for institution grant for NSF ILI (CILJ), "Development of a Spectroscopy Laboratory" \$56,000 funded for originally for 1997-1999 (1998-2000)

#### Professional Services (selected)

- **Professional Society and Community Services:**  
ACS Wichita Section elected chair (2006), secretary/treasurer (2010) and executive committee, ACS/ASEE regional meeting/conference paper reviewer/session moderator (2004, 2007), Board of Directors for Girl Scouts of Central KS (2002-08), Salina Community Women of Achievement selection committee (2005-09)
- **Kansas State University and College Committees, Task Forces, Public Outreach Services:**  
President's Commission on the Status of Women, Provost Advisory Committee for the Presidential Awards for Excellence in Undergraduate Teaching, Grievance Board, Honor/Integrity Council, Early Adopters of Assessment, Environmental Stewardship, ELITE scholarship (NSF S-STEM grant) review committee; Assessment Review Committee, Environmental Health/Safety Committee (chair), Task Force for Professional Master in Technology Graduate Program, Committee for Teen Women in Science and Technology (TWIST), Judge for annual Western Kansas Regional Science Olympiad

**Professional Society:** American Chemical Society; American Society for Engineering Education

**CURRICULUM VITAE:**

**Dr. Saeed M. Khan**  
429 Warner Park Road  
Manhattan, KS 66503  
W 785-776-1859 [saeed@sal.ksu.edu](mailto:saeed@sal.ksu.edu)

**EDUCATION:** **Ph. D. Electrical Engineering**, University of Connecticut,  
December 1994  
Dissertation Title: *The propagation and scattering of EM waves in electrically large ducts*

**M.S. Electrical Engineering**, University of Connecticut, May  
1989  
Dissertation Title: *Techniques for the determination of transfer function in extruded dielectric power cables*

**B.S. Electrical and Electronic Engineering**,  
Bangladesh University of Engineering and Technology, December  
1984

**TEACHING EXPERIENCE:**

1997-present **Associate Professor**, Electronic and Computer Engineering  
Technology, **Kansas State University-Salina**, KS  
*Telecommunication Systems, Digital Logic, Digital Systems,  
Microprocessor Fundamentals, Data Communication, Digital Systems  
and Computer Architecture, Communication Circuits Design,  
Electronic Communication systems, and Industrial Electronics.*

1994-1997 **Adjunct Faculty** Electrical Engineering and Lecturer  
Mathematics, **Kansas State University**, Manhattan, KS  
*Taught Electromagnetics and Calculus.*

**RESEARCH EXPERIENCE:**

- Antenna Design (1998-present): Have **designed** various **GPS and commercial wireless Antennas** while in industry and this is an **active area of research**.
- **Electromagnetic Scattering** (1989-present): Have performed **scattering studies on electrically large complex objects using analytical and numerical techniques**. Developed a hybrid technique combining **finite difference, and modal techniques** to study **large cavity backscatter**. Worked on a novel ray-tracing scheme that uses fuzzy factors to enhance a conventional geometrical optics aperture integration (GO-AI) ray-tracing scheme.
- Novel Materials (1995-2002): Collaborated with team developing **polymer materials** for microwave applications by providing expertise on desirable material properties for a given application.

**INDUSTRY EXPERIENCE:**

Summers **Consultant/Senior Design Engineer, Aeroantenna**  
1998-2005 **Technology Inc.**, Chatsworth, CA

- Designed various patches, quadrifilars, dipoles and blade antennas for GPS and wireless applications.
- Performed research related to issues involving phase center variations and multipath effects on high precision GPS antennas.
- Played key role in establishing the use 3D EM solvers for antenna design purposes at Aeroantenna.

**INDUSTRY EXPERIENCE (Contd.):**

1985-1987 **Research Associate, Insititute of Materials Science(IMS),**  
**University of Connecticut, Storrs, CT 06268**

- Developed a high frequency transfer function for the propagation of partial discharges in underground power cables.
- Developed scheme for locating discharge sites using high frequency transfer function

#### **SYNERGISTIC ACTIVITIES:**

- Chairing Task Force for establishing a Master's of Science in Technology for Kansas State University's College of Aviation and Technology
- Serving as co-chair for technical session on "Mobile Antennas, RF and Wireless Communication" at the 2008 Progress in Electromagnetic Research Symposium to be held in Cambridge, Ma
- Helped establish articulation agreements with several community colleges in the State of Kansas.
- Developed assessment scheme for electronic and computer engineering program for ABET accreditation purposes.
- Participated in Task Force that created new university-wide criteria for the Honor's Program.

#### **AWARDS:**

- 1st Place Paper Award, Conference Proceedings of 42<sup>nd</sup> American Society for Engineering Education (ASEE) Midwest Section Annual Conference, Wichita Kansas, September 19-21, 2007
- 2<sup>nd</sup> Place Paper Award, Conference Proceedings of 41<sup>st</sup> American Society for Engineering Education (ASEE) Midwest Section Annual Conference, Kansas City, Missouri, September 13-15, 2006

#### **PUBLICATIONS/PAPERS:**

1. Paper accepted in the *Progress In Electromagnetic Research Symposium 2010 (PIERS 2010)* in Cambridge Massachusetts. Paper titled, "Analysis and Simulation of Different Bent Dipole Circularly Polarized Antenna Array Situated Close to Ground Plane."
2. Saeed M. Khan and John DeLeón, "Articulating Need Sensitive Vertically Integrated Programs for Electronic Technology," *Conference Proceedings of American Society of Engineering Education (ASEE) 2008 Annual Conference and Exposition*, Pittsburg, PA, June 22-25, 2008, 11 pages
3. Saeed M. Khan and Beverlee Kissick, "Beating the Competition Down with the Stick of Education: A Winning Strategy for a Global World," *Conference Proceedings of American Society of Engineering Education (ASEE) 2008 Annual Conference and Exposition*, Pittsburg, PA, June 22-25, 2008, 9 pages
4. Saeed Khan, "Numerical and Experimental Investigation of the Characteristics of a High Gain Antenna," *Progress in Electromagnetic Research Symposium (RF and Wireless Communication, Multipath Section)*, July 2-6, 2008

#### **PUBLICATIONS/PAPERS (Continued):**

5. Saeed Khan, Md. Abdul Matin, Abdul Matin Patwari, Satya Prasad Majumdar, Rummana Matin, and Saeed M. Khan, "Ray-Optics of Wave Propagation through a Hollow Waveguide," *Progress in Electromagnetic Research Symposium (Electromagnetic Theory)*, July 2-6, 2008
6. Saeed M. Khan, Gregory Spaulding, Deanna Livengood, Paul Benjamin, Justin Schemm, Kenton Dreilling, Chase Maxton and Fred Kreiman, "Building the Largest Cantenna in Kansas: An Interdisciplinary Collaboration between Engineering Technology Programs," **Conference Proceedings of 42<sup>nd</sup> American Society for Engineering Education (ASEE) Midwest Section Annual Conference**, Wichita Kansas, September 19-21, 2007, 11 pages (**1<sup>st</sup> Place Paper Award**)
7. Saeed M. Khan and Beverlee Kissick, "Linking International Competition, Innovation, Cultural Understanding and global thinking: Motivating Technology Students to be Attentive to Cultural Issues," *Conference Proceedings of American Society of Engineering Education (ASEE) 2008 Annual Conference and Exposition*, Honolulu, Hawaii, June 24-27, 2007, 10 pages

8. Saeed M. Khan and Beverlee Kissick, "Linking Innovation, Cultural Understanding and global thinking: Motivating Technology Students to be Attentive to Cultural Issues," *Conference Proceedings of 41<sup>st</sup> American Society for Engineering Education (ASEE) Midwest Section Annual Conference*, Kansas City, Missouri, September 13-15, 2006, 8 pages (**2<sup>nd</sup> Place Paper Award**)
9. Saeed M. Khan, "Reducing the Numbers of Ray Tubes Used in Cavity Backscatter Studies," *2006 IEEE AP-S International Symposium on Antennas and Propagation and USNC/URSI National Radio Science Meeting* Albuquerque, New Mexico, USA on July 9 - 15, 2006
10. Beverlee Kissick and Saeed Khan, "Expanding the use of Emerson Circles to model personal growth in science and technology," *Conference Proceedings ASEE Annual Conference*, Chicago IL, June 2006, 6 pages
11. Beverlee Kissick and Saeed Khan, "Using Emerson Circles to Model Personal Growth of Students in Science and Technology." *Proceedings of the 2005 Midwest Section Conference of the American Society for Engineering Education*, September, 2005
12. Saeed Khan and Beverlee Kissick, "A Novel Scheme for Teaching Diversity Skills to Students in the Technological Sector," *Conference Proceedings of American Society of Engineering Education (ASEE) 2005 Annual Conference and Exposition*, Portland, OR, June 12-15, 2005, 7 pages
13. Saeed Khan and Beverlee Kissick, "Design of a knowledge based survey scheme for quantifying and propagating diversity skills in science and technology," *Proceedings of the 2004 American Society of Engineering Education Midwest Section Conference*, Pittsburg, Kansas, October 2004, 5 pages
14. Beverlee Kissick and Saeed Khan, "Expectations, Leadership, Dialogue and a continuing commitment to Diversity Promotion," *Conference Proceedings ASEE 2004 Annual Conference*, Salt Lake City UT, June 2004, 9 pages

#### **PUBLICATIONS/PAPERS:**

15. Saeed Khan, "Teaching Diversity at the College of Aviation and Technology," *Conference Proceeding of the 33<sup>rd</sup> ASEE/IEEE Frontiers in Education Conference*, November 5-8, 2003, Boulder, CO, pages F3D-24 to F3D-28
16. Beverlee Kissick and Saeed Khan, "Expectations: Leadership, Dialogue and a Long-Term Commitment to diversity promotion," *Conference Proceeding of the 38<sup>th</sup> ASEE Midwest Section Meeting*, Sept. 10-12, Rolla, MO, 9 pages
17. Saeed M. Khan, "Enhancing a Geometrical Optics Aperture Integration Scheme for Arbitrarily Shaped Cavities Using Fuzzy Logic ," *Progress in Electromagnetic Research Symposium (PIERS) Boston, MA, July 1-5, 2002*
18. Saeed M. Khan and Ishrat M. Khan, "Polymers for Microwave Applications," *Recent Research and Developments in Polymer Science*, Vol. 5, 2001, pages 29-42
19. Saeed M. Khan, "A comparative analysis of Different Microstrip Antenna Structures Designed to Function as a Single frequency technology," *IEEE APS/URSI Symposium*, Boston, July 7-14, 2001, page 411
20. Saeed M. Khan, "The Design of single frequency ice gauge using a microstrip patch antenna," *High Performance Electron Devices for Microwave and Optoelectronic Applications, EDMO 2000*, 13-14 Nov. 2000, Pages 140-145
21. Saeed M. Khan, "Teaching the Time Frequency Relationship to Electronic Engineering Students." *Conference Proceedings of Mid-West Regional Conference of the ASEE*, Omaha, Nebraska, April, 2000

22. Shailendra Negi, Keith Gordon, Saeed M. Khan, and Ishrat M. Khan, "High Dielectric Constant (Microwave Frequencies) Polymer Composites," book chapter from *Field Responsive Polymers*, ACS Symposium Series 726, American Chemical Society, 1999
23. Saeed M. Khan, Shailendra Negi and Ishrat M. Khan, "Microwave Active Smart Polymers," cover feature article, *POLYMER NEWS*, Vol. 22 No. 12, December 1997

Richard Andrew Zajac, Ph.D.

Department of Arts, Sciences and Business

Kansas State University at Salina

#### EMPLOYMENT HISTORY

August 1996 - Present

Assistant / Associate Professor

Department of Arts, Sciences and Business

Kansas State University at Salina

Taught college level physics to over 2000 students, average of 13 credit hours per semester. Successfully managed the development and integration of computer-based physics lab and more than \$80 000 of experimental equipment. Developed computer methods of data acquisition simulation and visualization, using technology tools in an interactive learning environment.

\* Developed innovative pedagogical materials that led to the publication of textbook / lab curriculum nationwide, as well as several papers presented to national audiences.

\* Taught following classes, and wrote supporting materials for:

- o General Physics I, algebra-trigonometry based lecture and lab
- o General Physics II, algebra-trigonometry based lecture and lab

(Salina campus and Manhattan campus)

- o PHYS 101: Conceptual-based physics

(Salina campus and Manhattan campus)

- o PHYS 103: Concept-based physics lab

- o Adapted JAVA applets for online animations. Received tenure in May 2002.

August 1992 - August 1996

Graduate Teaching / Research Assistant

Department of Physics

Kansas State University

Developed and programmed original simulations of complex fluids of polymers, copolymers, polyelectrolytes and protein models, using dynamical Monte Carlo lattice models, molecular dynamics and self-consistent field iterative algorithms. Developed and programmed original FORTRAN and BASIC simulations of complex fluids of polymers, copolymers, polyelectrolytes and protein models, using dynamical Monte Carlo lattice models, molecular dynamics and self-consistent field iterative algorithms.

- \* First study to directly reveal existence of self-similar adsorbance structures;
- \* Detailed bimodal population of molecular exchange at adsorbing surfaces;
- \* Unprecedented results of analysis of the structure and dynamics of layer adsorption resulted in 7 major publications in prominent journals, with impacts to pharmaceuticals, petroleum applications, and the biocompatibility of implants;
- \* Taught undergraduate physics laboratories.

#### CAREER OVERVIEW:

Over 15 years experience teaching college level physics. An experienced teacher and researcher with proven hands-on skills to develop, manage and maintain a state-of-the-art computer-based physics lab, and design quality research-based pedagogical materials. Proven research experience in designing, programming, coordinating and analyzing innovative computer simulations of complex physical systems.

#### EDUCATION

Ph.D. in Physics conferred May 1997,  
Kansas State University, Manhattan, Kansas

B.Sc. in Physics conferred June 1992,  
McGill University, Montreal, Quebec, Canada.



## SKILLS

Programming: Fortran, Basic, Some experience in Java

Platforms and Apps: Unix, Windows, Excel, Word, Power Point, Science Workshop,

Data Studio, Interactive Physics, PEARLS, VideoPoint, Physlets.

Expertise: Teaching w/ Interactive Technology lab, Curricular Development and Analysis.

Physical & Chemical Modeling, Simulation Design & Programming. Physical Analysis of Emergent Properties, Project Management

## AFFILIATIONS

American Physical Society, American Association of Physics Teachers.

## SELECTED SCHOLARLY PUBLICATIONS & PRESENTATIONS

"Kinetics and Thermodynamics of End-Functionalized Polymer Adsorption and Desorption Processes," Phys. Rev. E. 49, 3069 (1994), with A. Chakrabarti

"Adsorption and Desorption of Polymers from Solution", presented at Twenty-Third Midwest Solid State Theory Symposium in Manhattan, Kansas. October 14, 1995.

"Statics and Dynamics of Homopolymer Adsorption and Desorption: A Monte Carlo Study," J. Chem. Phys. 104, 2418 (1996), with A. Chakrabarti.

"Statics and Dynamics of Homopolymer Adsorption and Desorption" presented at the 1996 March Meeting of the American Physical Society in Saint-Louis, MO. March 21, 1996.

"Conformational Properties of Polyelectrolyte Brushes: A Monte Carlo and Self-Consistent Field Study," J. Chem. Phys. 104, 1579 (1996), with H. Chen and A. Chakrabarti.

"Irreversible Polymer Adsorption from Semidilute and Moderately Dense Solutions," Phys. Rev. E. 49, 1579 (1996)., with A. Chakrabarti.

"Effects of Chemical Impurities on the Adsorption of Polymer Chains from a Semidilute Solution," J. Chem. Phys. 107 8637 (1997), with A. Chakrabarti.

"Impurity Effects on Polymer Adsorption and Desorption" presented at the 1997 March Meeting of the American Physical Society in Kansas City, MO. March 18, 1997.

SCHOLARLY PUBLICATIONS & PRESENTATIONS (continued)

"Monte Carlo Study of Layer Formation and Exchange Kinetics in Polymer Adsorption", Progress in Colloid and Polymer Science, 110, 291 (1998), with A Chakrabarti.

"Trends in the Adsorption of Mono-End Capped Polystyrenes onto Polar Substrates: Theoretical Predictions and Experimental Observations", J. Appl. Polym. Sci. 76 1422 (2000). (with Zhang Jian, Amit Chakrabarti, Tania Dyakonov, Xiaoyen Guo, Chris Sorensen, Dennis Burns, and William Stevenson).

"Physical Science: What the Technology Professional Needs to Know: Lab Manual," INTELECOM, John Wiley & Sons (2001). ISBN-13: 978-0471360193

Textbook Effectiveness: \$100 Paperweights, or How to Read a Book", National Meeting of the American Association of Physics Teachers, Session BM03, Salt Lake City, Utah, August 8th, 2005.

While this paper was still under development, preliminary results were presented at:

"A Use for the 100\$ Paperweight, or How to Read a Book", K-State at Salina 1st Annual Professional Day, January 5th, 2005.

"Undergraduate Lab Computers as a Resource for Simulational Research", K-State at Salina 1st Annual Professional Day, January 5th, 2005.

"The Physical World" lab manual, by Richard Zajac, (2006).

"Sudoku as a Paradigm for Physics Problem Solving", National Meeting of the American Association of Physics Teachers, Session EJ07-21, Syracuse, New York, July 26th, 2006.

"Sudoku as a Paradigm for Physics Problem Solving", by Richard Zajac, K-State at Salina 3rd Annual Professional Day (peer reviewed), January 5th (2007).

"Students' Awareness of Mathematical Deficiencies and How They Address Them: What Makes You Think You Can Take Physics Anyway?" National Meeting of the American Association of Physics Teachers, EC01, Greensboro, North Carolina, August 1st, 2007.

"GP1: Mechanics, Heat & Waves" lab manual, by Richard Zajac, 2.1ed (2002 - 2007).

"GP2: Electromagnetics, Optics and Modern Physics", lab manual, by Richard Zajac, 1.8 ed. (2002 - 2006).

**DON VON BERGEN**  
Arts, Sciences, and Business Department  
dvv@sal.ksu.edu, 785-826-2696

**Education:**

B.S.	1977	Wheaton College, Geology
M.S.	1985	University of Illinois, Geology
Ph.D.	1988	University of Illinois, Geology

**Professional experience:**

Current:	2001 - present	Department Head, Arts, Sciences, and Business Department, Kansas State University, Salina
Previous:	1994 - 1997	Instructor, Physics/Geology, Arts, Sciences, and Business Department, Kansas State University, Salina
	1988 - 1992	Geologist/Geophysicist, Chevron U.S.A. Inc., New Orleans/Lafayette, Louisiana
	1981 - 1988	Teaching/Research Assistant, University of Illinois, Urbana, Illinois

**Selected Refereed Journal Articles/Publications/Significant Works of Scholarly Activity:**

Von Bergen, D. and M. Johnston, Fall 2006. "Hard Knocks – What You Don't Know Can Hurt": The Department Chair, vol. 17, No. 2

Von Bergen, D. and M. Johnston, February, 2006. "Hard Knocks – What You Don't Know Can Hurt": Presentation & Proceedings, 23<sup>rd</sup> Annual Academic Chairpersons Conference

Von Bergen, D. and A. V. Carozzi, April, 1990. Experimentally simulated stylolitic porosity in carbonate rocks: Journal of Petroleum Geology.

Von Bergen, D. and A. V. Carozzi. Deep burial stylolitic porosity experimentally developed in Atokan limestones, Northern Delaware Basin, Chapman Deep Field, Reeves County, Texas: 1987 SEPM Annual Midyear Meeting, Austin, Texas.

Carozzi, A. V. and D. Von Bergen, July, 1987. Depositional environments, diagenesis, and stylolitic porosity of Atokan (Pennsylvanian) carbonate gas reservoirs, Chapman Deep Field, Delaware Basin, Reeves County, Texas: Journal of Petroleum Geology.

March 3, 2010

**Kenneth W. Barnard, EdD**

962 300 Ave  
Hope, KS 67451  
(785) 949-2857

Professor, College of Technology & Aviation  
Kansas State University-Salina  
2310 Centennial, Salina, KS 67401  
(785) 826-2681 Fax 826-2934

**EMPLOYMENT:**

2010

**Kansas State University-Salina**

- Co-PI \$3,147 Tilford grant; Infusing and Assessing the Tilford Multicultural Competencies in the Academic Curricula at Kansas State University
- Awarded \$1,900 grant University Distinguished Lecture, Dennis M. Bushnell, Chief Scientist, NASA Langley Research Center, "Eight Major Societal Trends in Our Future".
- Paper submitted to ASEE National; "Who Needs Another Applied Mathematics Course?" Co-authored with John Heublein AS&B professor
- Lead writer for CARE grant Phase I on water conservation adopted for Phase II grant proposal

2009

- Principal Investigator \$125,510 subcontract of \$1,510,255 NASA EPSCoR grant (3 years); Aeroelastic Modeling Effects and Flight Test Demonstration of Resilient Adaptive Flight Controls on a General Aviation, Testbed: Dynamic Inverse and Adaptive Critic Methods (2009)
- Invited presenter at the Ethical Reasoning Workshop at KSU.
- Invited to present and help organize the Coronado Area Council Boy Scouts of America 2009 Eco-Camp Adventure Days.
- Meteorology consultant for Symphony in the Flint Hills event

2008

- Awarded a \$3835 DCE grant to develop and offer PPIL342 Aviation Meteorology as an online delivered course.
- Graduate Council approved membership to Graduate Faculty at KSU. (2008)
- Graduate Committee member to establish a Masters in Technology at K-State at Salina.
- Mentor to Aviation Faculty for tenure and promotion process.
- Invited by faculty to peer review their classroom teaching.
- Invited leader in the Take Charge Challenge project; a Salina energy savings public service project.
- Involved in the U.S. Environmental Protection Agency Awards CARE Grant to Investigate Environmental Health Issues in Salina, Kansas.
- Invited speaker to present: *WSI what You should Know* (workshop on how to use the satellite weather service international live feed for pilot weather briefings and forecasts) at the EAA sponsored regional meeting. (2008)
- Received the 2008 *Academic Advisor of the Year* award from K-State Salina (advise 77 students with a full teaching load)
- Accepted presentation *Trials & Tribulations using 5 Technologies* at the Colleague to Colleague (C2C), Summer Institute on Distance Learning and Instructional

Technology (SIDLIT) held at Johnson County Community College July 31, 2008.

- Experimental Aircraft Association 2008 awarded the certificate of *Flight Advisor*, one of only a few hundred holding this distinction world wide, six in Kansas.
- Nominated University Aviation Association president by former president (2008).
- Accepted for publication and presentation; Barnard, K., Stephens, G., and Dandu, R. *Earth Day Teach-In: A Model for Industry, Community, and Education Collaboration*. American Society for Engineering Education (ASEE) Annual Conference and Exposition, June 22-25, 2008, Pittsburgh, PA.
- Elected to the board of directors; Marion County water district #1 (2008)
- Invited reviewer by the International Review Board for *International Association of Journals and Conferences*, accepted April 2008.
- Reviewer for *Collegiate Aviation Review (CAR)*, average three papers each year, two papers reviewed thus far in 2008.
- Invited presenter at the *Ipod and Beyond* collegiate regional forum hosted by University of Kansas April 18, 2008.
- Presented several lectures from Kansas State University's Presidential Lecture Series; *Climate Change are You Ready?, Save R-PLANET, Reduce Carbon Dioxide and Save Money*.
- Submitted the revised paper *Broad-based Student Learning Outcomes: An Assumed Assessment Reality Check Experience in Aviation* for publication in the peer reviewed *Journal of Air Transportation World Wide*, (2008).

2007

- Reviewer for ASEE conference papers; three papers reviewed 2007.
- Principal organizer first College of Technology's Earth Day Teach-In. *Earth Day Teach-In: A Model for Industry, Community, and Education Collaboration* paper was published and collaboratively presented at the regional ASEE conference, Wichita, KS, October 2007.
- Selected as one of the 1,000 trained world wide as a climate change presenter at the Al Gore's Climate Project Center with Intergovernmental Panel on Climate Change scientists participating, January 2007.

- Twenty-five invited presentations across the state on climate change in 2007 to include the regional Wing Conference for the Civil Air Patrol in Kansas; *Climate Change Are You Ready?* Workshop at the *Kansas Association of Teachers of Science* and at the *Kansas Association of Conservation and Environmental Education* Conferences.
- Invited by four campus professors to provide peer teaching feedback evaluations on their classroom teaching (2004, 2007, 2008)
- Principal organizer first Earth Day Teach-In at K-State at Salina (2007)
- Invited presenter EAA chapter 1127, *FAA Airspace Communications* (2007)
- Selected as one of only 1,000 worldwide to receive personal training by Al Gore at The Climate Project Center, Nashville TN, to include three days of training with scientists from the Intergovernmental Panel on Climate Change. (January 2007)

2006

- Received The William Weatley Award for *Teaching Excellence and making outstanding contributions to aviation education for over ten years* by The University Aviation Association, presented at the annual national conference, Anchorage, Alaska October, 2006.

- Published and presented paper, *Broad-based student learning outcomes: An Assumed Assessment Reality Check Experience in Aviation* (KSU and UAA 2006)
- National EAA *Young Eagle* program recognition; 100 plus Young Eagle Flight Award. (2006)

2005 – 2000

Kansas State University-Salina

- Appointed Adjunct Faculty at Tuskegee University, AL (2005)
- Selected for the Peer Review program at K-State with \$1,000 grant.
- Invited panel participant on *WebCT Distance Learning Course Delivery* at the SIDLIT conference hosted by JCCC,KS.(2005)
- Invited presenter EAA chapter 1127, *Weather Forecasting* (2005)
- Nominated for the Coffman Chair for University Distinguished Teaching Scholar (2004)
- Invited presenter, *Human Factors "Situation Awareness"* for the Civil Air Patrol wing in Kansas. (2004)
- One of three PI's submitting a multi-discipline Target of Excellence proposal grant in 2005 involving Aircraft Cabin Air Filtration research, \$624,000 initial awarded (2008) of \$1.2 Million project.
- Paper/presentation collaboratively delivered; (*Online Hybrid Courses Using University-Developed Software: Instructional Technology, Student and Faculty Perspectives Across Disciplines*) accepted at ASEE (2003, 2004), UAA (2003), Madison, WI DL conference (2003), KSU faculty teaching conference, CCCC (2004), SIDLIT (2004)
- Consultant; external reviewer for other university aviation programs (2004)
- Aviation consultant; city of Wichita, KS (2003)
- Nominated for University Aviation Association president by current president (2003), I had full department head support but the Dean emphatically did not support this national position so I withdrew my nomination.
- Invited presenter EAA chapter 1127, *Weather Forecasting* (2003)
- Retired U.S. Army Jan 2003, 35 years service Lieutenant Colonel (see mil bio)
- Selected as the first KSU Wakonse fellow recognized for *Innovative Teaching*, national conference held in Michigan (2002).
- Elected to the University Aviation Association Board of Trustee (2002)
- Received the Marchbanks Memorial *Award for Teaching Excellence* (2001)
- Awarded a University Small Research Grant for Spring 2001
- Participant in the 2001 Plains Academy grant project using digital learning
- Co-authored, *Web Enhanced Courses and Online Assessment: Students Perspectives*, presented at the 2001 Conference on Information Technology

1999 - 1992

Kansas State University-Salina

- Developed four courses using KSU Online (distance learning) Internet format
- Point of Contact (POC) for distance learning in the Kansas Army National Guard
- Ed.D in Higher Education with applied studies in Aviation and Space (1998)
- Sabbatical leave from KSU to Oklahoma State University (1997)
- Tenured Professor and Department Head for Aeronautical Technology
- Principal Investigator for a 7.7 million dollar DOD equipment grant

- Developed a new Bachelor of Science degree program; Airway Science in Professional Pilot and Aviation Management
- In 1995 additional contracts were signed to support NASA atmosphere research (U2 aircraft/team used the hangar facilities and classroom space)
- Contracts were signed with McDonnell Douglas Training Systems to provide international pilot and A&P mechanic training (FAA and DCA) and with British Aerospace Prestwick Flying College to provide UK Civil Aviation Authority pilot training.
- Aviation Simulation Technology agreement; E-prom development and flight simulator use
- Development of a new FAA Aviation Maintenance Technician Transport Category certificate (AMTT) curriculum in partnership with American Eagle Airline
- Established a training agreement with McDonnell Douglas and Malaysia to provide instructor training, curriculum and subject matter expertise for a \$70 M aeronautical training center in Malaysia (was cancelled by exiting Dean)
- Received the Kansas Governor's Aviation Honor Award from Governor Bill Graves
- Directly supervised 31 faculty and staff, fleet of 60 aircraft

1991 - 1990

Program Manager-Salina: Air Service Training (UK-CAA airline pilot training company)

- Professor, Program Manager, Air Service Training Contract
- Responsible for managing an international pilot training contract providing Civil Aviation Authority and Federal Aviation Administration Training
- The duties were all encompassing to include all hiring (staff of ten), budgeting, accounting, purchasing, and liaison with AST, KCT, the CAA and FAA. Operations, safety, standardization, ground and flight curriculums were under my direct control
- Managing auxiliary contacts in the areas of aircraft fleet use, student housing, transportation, and food service were also my responsibility.

1989 - 1986

Kansas College of Technology

- Professor, Director of Aviation. Responsible for managing two departments: Aviation Maintenance and Professional Flight
- Responsible for curriculum design, degree proposals, new programs (Professional Flight was designed, proposed, and implemented in 1986-87)
- Budgets, purchasing, evaluations, providing guidance and direction for the programs, hiring of new instructors, implementing special projects, i.e. A & P review classes, Boeing 737 course, Avionics Repair Station, etc.
- Rewrote the FAA Part 147 document. Help write a new FAA FAR Part 141 Pilot training document. Taught in both the FAA approved Part 147 (A & P) and Part 141 (Pilot) curriculums
- Assistant Chief Flying Instructor for the FAR 141 approved flight school.

1977 – 1985

Kansas Technical Institute

- Assist/Associate Professor, Aviation Maintenance Department Head. Responsible for the A & P certificate and Associate degree programs in Aviation maintenance. Taught most of the twenty-four classes in the A & P curriculum. Responsible for budgets, purchasing, new hiring, and curriculums.



Kansas Technical Institute

- Instructor in the A & P curriculum

Self employed

- A & P mechanic, helicopter pilot, CFI Airplanes in Kansas while obtaining BS degree from KSU.

Student

- Student at KTI (A & P cert, AT degree), Pilot in KSARNG, CFI airplane.

Rocky Mountain Helicopter

- Helicopter pilot for Rocky Mountain Helicopters. Flew in Montana plus five states on US Forestry Fire contract.

US Army

- Helicopter pilot, Aviation Battalion Commander (see military biography)

DN: (See military biography for additional military schools.)

Doctor of Education, Applied Studies in Aviation and Space from Oklahoma State University.

Master of Science in Technical Teacher Education from Pittsburgh State University.

Bachelor of Science in Adult and Higher Education from Kansas State University

A & P Certificate, Associate of Technology, Aviation Maintenance from KTI.

Associate Arts degree in Liberal Arts from Riverside City College in California.

**COURSES TAUGHT:**

1. AVM 112 Aircraft Welding
2. AVM 121 Aircraft Drawings
3. AVM 131 Aircraft Standards
4. AVM 132 Aircraft Fluid Power
5. AVM 141 Aircraft Science
6. AVM 142 Airframe Systems
7. AVM 151 Aviation Maintenance Fundamentals, was MATH 100 Elementary Functions
8. AVM 242 Navigational Aids and Communication Systems
9. AVM 290 Problems in Aviation
10. AVM 312 Aircraft Propellers
11. AVM 332 Gas Turbine Powerplant
12. AVM 342 Powerplant Induction and Fuel Systems
13. AVM 351 Powerplant Ignition and Electrical Systems
14. PPIL 111 Private Pilot
15. PPIL 112 Professional Instrument Pilot
16. PPIL 221 Preventive Maintenance
17. PPIL 271 Helicopter Pilot
18. PPIL 305 Aviation Safety Management
19. PPIL 342 Aviation Meteorology/ PHYS 342 Aviation Meteorology
20. PPIL 362 Multi-Engine Ground School
21. PPIL 389 Problems in Aviation
22. PPIL 415 Human Factors
23. PPIL 420 Advanced Aerodynamics
24. PPIL 425 Advanced Aircraft Systems
25. PPIL 440 FAR Part 135 Operations
26. All PPIL Flight Labs.
27. POLSC 355 Contemporary Issues
28. PPIL 216 Altitude Chamber
29. PPIL 416 Crew Resource Management

Developed under University General Education (UGE) requirement:

1. PPIL 142 Introduction to Meteorology

Distance Learning video course developed and taught to Tuskegee students

1. Aviation Weather

Developed PPIL 342 Aviation Weather taught asynchronous using KSOL and Camtasia video capture (2008), added NASA data written assignment to this course for the "Honors" program.

Kansas State Online courses:

1. PPIL 342 Aviation Meteorology
2. PPIL 415 Human Factors
3. Tegrity courses: PPIL 342 Aviation Meteorology

Curriculums developed:

1. Revised the complete Federal Aviation Administration (FAA) Federal Aviation Regulation (FAR) Part 147 approved 2100 hour curriculum document for Aircraft Maintenance: Airframe and Powerplant Technician Certificate
2. University offered PPIL curriculum FAA endorsed Airway Science (AWS) AT/BS certified FAA FAR Part 141 professional pilot curriculum document
3. University offered AVM curriculum AWS AT/BS certified FAA FAR Part 147 curriculum document
4. Two-plus-two aviation program curriculum agreement with High Schools having aviation course options and Wichita Technical College
5. Kansas National Guard POC (project manager) for a distance delivered Military Occupational Skill -20 level training curriculum for UH-60 Blackhawk helicopter maintenance technician. First in the U.S. Army system; and it became the successful model adopted MOS technical training delivered via synchronous distance learning using newly established DL classrooms Army and now worldwide.

Developed PPIL 416 Crew Resource Management in 2005 using video captured scenario driven simulator flights with crew critique format that has become a capstone course for the department, has been adopted as a prerequisite before students can fly C-90 or C-525 transportation trips, and part of the airline bridge program.

1. Revised the complete FAA FAR Part 147 approved curriculum document for Aircraft Maintenance

2. University offered PPIL curriculum AWS AT/BS certified FAA FAR Part 141 curriculum document
3. University offered AVM curriculum AWS AT/BS certified FAA FAR Part 147 curriculum document

Rewrote:

1. PPIL 420 Advanced Aerodynamics
2. PPIL 415 Human Factors

Several Laboratory Manuals developed in the Aviation Maintenance curriculum

### **FEDERAL AVIATION ADMINISTRATION CERTIFICATES:**

Airline Transport Pilot  
Airplane Single & Multiengine Land  
Commercial Privileges  
Rotorcraft- Helicopter  
Instrument Helicopter  
Flight Instructor:  
Airplane Single & Multiengine  
Instrument Airplane  
Rotorcraft-Helicopter  
Mechanic:  
Airframe & Powerplant

### **COLLEGE COMMITTEES:**

Past positions:

Chair Academic Standards  
Chair Course and Curriculum  
Chair Re-Instatement  
Faculty Salaries and Benefits  
Distance Learning  
Faculty Senate President (KCT)

Present positions:

Dean's Tenure and Promotion Advisory Committee  
Graduate Task Force  
Disaster Relief Committee  
State Aviation Advisory Committee  
Historical  
Sustainability  
General Grievance Board

### **REFERENCES:**

COL Dennis Parry, Chief of Staff, KSARNG (retired 31 March 2003)

Marlon Johnston, Aviation Dept. Head, Kansas State  
University  
Chuck Reagan, Executive Vice-President, Kansas  
State University  
COL (ret) Charles Rayl, Attorney at Law,  
Cottonwood Falls, KS  
Mike Renk, VP Business Affairs, North Dakota  
Technical College, ND

**Fred Guzek, Ph.D.**

Department of Arts, Sciences, and Business

**Education:**

B.S.	1977	Lake Superior State University, Earth Science
MPPM	1995	Yale University, Masters in Public and Private Management
Ph.D.	2003	University of Kansas, Business Administration - Marketing

**Professional experience: (List current and three most recent positions)**

Current:	2003 - present	Associate Professor, Department of A. S. & B., Kansas State University, Salina (promotion & tenure July, 2008)
Previous:	2000 - 2001	Visiting Assistant Professor of Marketing, Groupe ESC Graduate School of Management, Clermont-Ferrand, France
	1994 - 1999	Research Associate, Kansas Electric Utilities Research Program, Topeka, KS
	1983 - 1993	Sales Representative/Branch Manager/Sales Trainer, Berry Material Handling Division of Berry Companies, Wichita/Topeka, KS

**Selected Publications/Significant Works of Scholarly Activity:**

Guzek, F. 2009. Teaching SPIN Through Practical Application. Presentation and published electronically by the Global Sales Science Institute. <http://www.gssi2009.org/pdf/Guzek.pdf>

Guzek, F., K. Barnard, J. Collins, P. Leite, J. Oh, and G. Simmonds. 2006. The Use of Virtual Teams as an Instructional Tool: Learning Enhancement and Technological Skill Building. Presentation to College of Technology and Aviation Professional Day, Kansas State University - Salina.

Guzek, F., K. Barnard, J. Collins, P. Leite, J. Oh, and G. Simmonds. 2005. The Use of Virtual Teams as an Instructional Tool: Learning Enhancement and Technological Skill Building. Presentation and Proceedings of the Semaine Internationale Research Seminar, Clermont-Ferrand, France.

Barnard, K., F. Guzek, G. Simmonds, J. Collins, P. Leite, and J. Oh. 2004. Collaborative Scholarship – A Success Story. Presented by co-author Jung Oh and published in the Proceedings of the ASEE Midwest.

Guzek, F. 2004. The Role and Value of Marketing Communications in the U.S. Electric Utility Industry. Presentation and Proceedings of the Annual International Week Research Workshop – Groupe ESC Clermont.

Guzek, F. 2003. Understanding the Role and Value of Marketing Communications by a Regulated, Monopoly Firm. Doctoral Dissertation, University of Kansas.

Dr. Judith Collins  
Associate Professor of English, Kansas State University-Salina  
[jcollins@sal.ksu.edu](mailto:jcollins@sal.ksu.edu)

**Education:**

**Ph.D., English: Rhetoric/Composition-Linguistics.**

Arizona State University, Tempe, AZ, August 2000.

Dissertation, Dr. Duane Roen, Chair; Dr. Maureen Goggin, Dr. John Ramage, committee .

**M.A. English, Writing Concentration (Poetry)**

Western Washington University, Bellingham, WA, June 1993.

Thesis: *Fever Creek*, a collection of original poems. Director: Dr. Knute Skinner.

**B.A. English, Writing Concentration (Poetry)**

Western Washington University, Bellingham, WA, June 1991.

**Professional Experience:**

**January 2007 to present-- Associate Professor of English**, Department of Arts, Sciences, and Business, Kansas State University at Salina.

**August 2001 to December 2006—Assistant Professor of English**, Department of Arts, Sciences, and Business, Kansas State University at Salina.

**Publications (Regional professional journal):**

2006: Collins, J. “Why Google Isn’t Good Enough: A Story of Integrated Information Literacy Instruction in Upper-Level Technical Writing.” *Kansas English: The Journal of The Kansas Association of Teachers of English*. KATE Spring 2006. Argues for improved information literacy instruction at all levels of the academy.

**Publications (Conferences/ Proceedings):**

Selected, Peer-Reviewed, Competitive, National

2008: Collins, J. “Coldwar rhetoric and writing lessons: Fifth graders correspond with Edward L. Beach, captain of the Triton, fifth U.S. nuclear powered submarine.” *American Culture Association 2008 National Conference*, San Francisco, March 2008.

2008: Collins, J., and Oh, J. “Using Virtual Team activities to improve information literacy and distributed cognition with a linked writing/general chemistry assignment.” *Proceedings, American Society of Engineering Educators National Conference*, Pittsburg, Pennsylvania, 2008.

2007: Collins, J. and Oh, J. “Information fluency, distributed cognition, and virtual teaming in a linked writing/science assignment”. *Proceedings, ASEE Midwest Section Conference and Workshops: Educating the 21<sup>st</sup> Century Engineer*, Wichita, Kansas, 2007.

2006: Collins, J., Kissick, B., Oh, J. and Starkey, A. “Faculty/Librarian Partnerships for Information Fluency Instruction: Planning and Preliminary Assessment.” *Proceedings, American Society of Engineering Educators National Conference*, Chicago, 2006.

2006: Collins, J. “TAC of ABET Criterion 2, faculty/librarian partnerships, and information literacy: Results of a Big 12 Fellowship inter-institutional workshop.” *American Society of Engineering Educators Annual Conference and Exposition*, Chicago, June 2006.

2006: Collins, J. “Crossing the Library/Classroom Border: Narratives of Truth and Consequences in Information Literacy Instruction.” *57<sup>th</sup> Annual Conference of College Composition and Communications*, Chicago, March, 2006.

2005: Collins, J. Kissick, B., Oh, J. and Starkey, A. “Knowledge Workers of the Future and Today’s Information-Literate Students: Models for Improving Students’ Use of Discipline-Specific Databases.” *American Society of Engineering Educators National Conference*, Portland, Oregon, June 12-15 2005.

# APPENDIX C

## Industry letters of Support



418 E. Ave B  
PO BOX 3674  
SALINA, KS 67402-3674

[www.ksolutionscorp.com](http://www.ksolutionscorp.com)

(785) 309-0352

Dean Carol Shanklin  
Graduate School  
Kansas State University  
Fairchild Hall, KS 66502

Dear Dean Shanklin:

I would like to express my support of the proposed Professional Master of Technology Program being planned by K-State at Salina. As a summa cum laude graduate from the Engineering Technology program in 1990, there was no direct avenue to further my degree at that time within the Kansas State University family. Looking back on my career, although successful by many standards, I believe that I would have had more opportunities to advance my career with a master's degree. I truly believe that this opportunity will help with recruiting of students into the program, knowing that they have a direct avenue for a master's degree, allowing them to move up in the ranks of corporate America.

As a representative of a company that can see the benefit of this type of program from both a business and a community point of view, I would like to express my excitement and support for this endeavor.

Sincerely,

Doug Oliphant  
Vice President, KSolutions

PAGE 1

October 26, 2009



Dean Carol W. Shanklin  
Dean of Graduate Schools  
Kansas State University  
103 Fairchild Hall  
Manhattan, KS 66502

Dear Dean Shanklin:

I am writing in support of the Professional Master of Technology Program being proposed by K-State at Salina.

From the briefing I have received, I see this degree as a great asset to the business community. As outlined, I believe it would allow students to focus on the leadership and management aspects of their careers in addition to the technical knowledge they gain. Quality companies appreciate the need for a well-rounded work force, and the attention paid to non-technical aspects of professional development sets this program apart and makes it unique. As an employer of a large number of technically trained people, I see graduates of this program being in high demand in the job market. I also believe many companies, like Cessna, will encourage existing employees to enhance their skill level by earning this degree. K-State Salina already has a reputation for turning out graduates with excellent technical expertise. The addition of a Master's degree that will teach many of the tools needed for technical program management, in addition to technical skills, will make the K-State-Salina program that much more competitive.

Thank you in advance for your consideration of my perspective.

Sincerely,

Michael J. Pierce  
Manager, Product Marketing  
CESSNA AIRCRAFT COMPANY



DUNCAN  
AVIATION




Dean Carol Shanklin  
Graduate School  
Kansas State University  
Fairchild Hall, KS 66502

Dear Dean Shanklin:

I am writing in support of the proposed Professional Master of Technology Program being planned by K-State at Salina. This is yet another example of the campus at Salina pushing the envelope to provide the best quality applicants for industry.

At Duncan Aviation we interview applicants from several different institutions for many different types of jobs. Over the past few years we have recognized the need to focus more on soft skills that an applicant brings to the table as they bring a new level of professionalism to our teams and have the ability to excel faster in their career. For your institute to recognize this need and incorporate it into a program says something in itself. I would believe students taking advantage of this program would not only see a different aspect of their future career, but would also be highly sought out by the business community. As our company promotes from within, this may also present opportunities for leadership training for our existing employees looking for advancement. K-State Salina already has a reputation for turning out graduates with excellent technical expertise. The addition of a Master's degree that teaches "soft" as well as hard skills will make the K-State-Salina program that much more competitive.

Thank you in advance for your consideration of my perspective.

Sincerely,  
  
Kevin Miesbach  
Avionics/Instrument Shop Manager  
Duncan Aviation  
Lincoln, Nebraska

Lincoln Airport  
P.O. Box 81887  
Lincoln, Nebraska  
68501

402 475 2611  
Fax 402 475 5531  
[www.duncanaviation.com](http://www.duncanaviation.com)

November 9, 2009

Dean Carol Shanklin  
Graduate School  
Kansas State University  
103 Fairchild Hall  
Manhattan, KS 66506-1103  
Dear Dean Shanklin:

This correspondence is in support of the Professional Master of Technology (PMT) program being submitted for consideration by Kansas State University, Salina campus. Although today's students enter the workforce with well formed technical skills which are desired by industry, the organizational, leadership, and communication skills required to progress in a professional career tend to be in limited supply. Today, many of these skills are either self-taught or cultivated by employers.

The PMT program would provide a means for students and professionals to build these skills in a focused and respected environment. For those companies that value these skills, but do not have the resources to provide in-house education, the PMT program would allow a means for them to further develop their professionals.

Considering the number of small to medium companies in central and western Kansas, K-State Salina has an opportunity to serve a population that does not currently have access to a program like the Professional Master of Technology. Ultimately, the ability to provide the professional skills within the PMT along with the already respected technical skills of their undergraduate programs will allow the Salina campus to offer students the opportunity to fully prepare for their futures.

Sincerely,

A handwritten signature in black ink, appearing to read "Lisa L. Atcheson".

Lisa L. Atcheson  
Learning Solutions & Services Sr. Manager  
Spirit AeroSystems, Inc.  
(316) 523-2004  
(316) 214-6479

cc: Brian Boeding, MET Industrial Advisory Board member, Spirit  
Brian Black, Community Relations, Spirit  
John Harris, University Relations, Spirit



November 4, 2009

Dean Carol Shanklin  
Graduate School  
Kansas State University  
Fairchild Hall  
Manhattan, KS 66502

Dear Dean Shanklin:

I have had the privilege of being on KSU-Salina's Technical Advisory Board for the last 8 years and have seen the quality of that program. Adding to this program with the proposed Master of Technology degree would be a great boon to the Salina area to have well educated folks with technical and people skills.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Sydow".

Tom Sydow  
Westar Energy  
NW Regional Director

TS/ln

1001 Edison Pl / Salina, Kansas 67401-7426

From: "Darian L Bebout" <darian.l.bebout@boeing.com>

To: "Dr. Saeed Khan" <pasurvey@k-state.edu>

Sent: Tuesday, October 20, 2009 11:15:57 AM GMT -06:00 US/Canada Central

Subject: RE: Proposed Graduate Program Survey

Saeed,

I have completed the survey as requested. I think you have a very forward-looking program which allows students to focus on the leadership/management aspects of their career in addition to the technical aspects. Quality companies should definitely appreciate and understand the need for the well-round aspects of you program.

Best of luck to you.

Regards,

Darian

**Darian L. Bebout**

[B-52 EHF Program Manager](#)

[Boeing - Integrated Defense Systems - Wichita](#)

[Office: 316-977-1506](#)

[Cell: 316-253-6876](#)

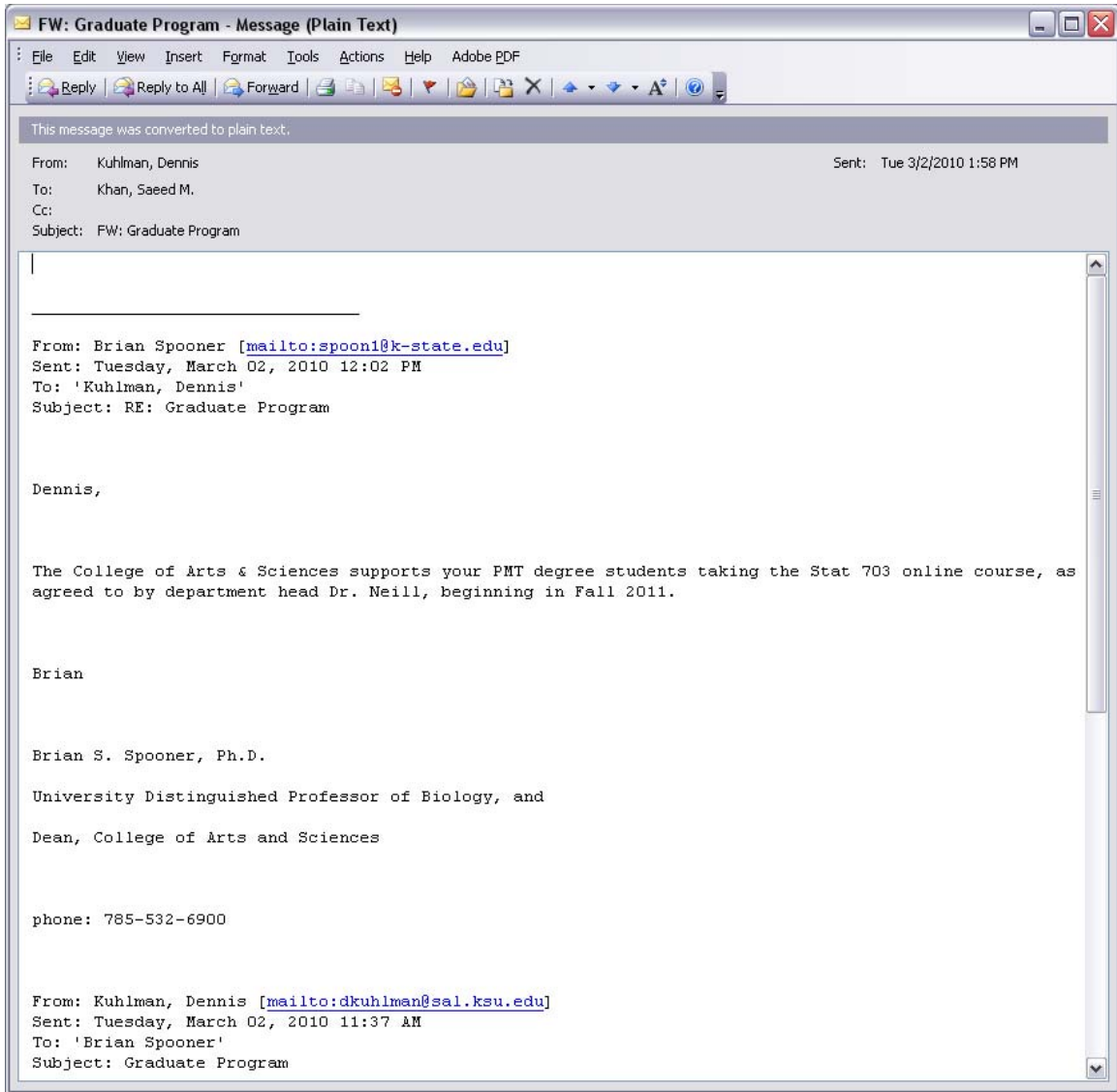
[Fax: 316-977-0774](#)

[M/C: K84-41](#)

[darian.l.bebout@boeing.com](mailto:darian.l.bebout@boeing.com)

# APPENDIX D

## K-State Internal Support Letters



RE: Graduate Program - Message (Plain Text)

File Edit View Insert Format Tools Actions Help Adobe PDF

Reply Reply to All Forward

From: Yar M. Ebadi [yebadi@ksu.edu] Sent: Tue 3/2/2010 3:39 PM  
To: 'Kuhlman, Dennis'  
Cc: saeed@sal.ksu.edu; 'Jeff Katz'  
Subject: RE: Graduate Program

Dennis,

I support your proposed Professional Master of Technology(PMT). Additionally I approve the inclusion of our MANGT 810 and MANGT 820 in your proposed PMP Degree program.

Let me know if you need an official letter or this email suffices.

Yar

Yar M. Ebadi  
Dean and Professor  
Robin Hagans Maupin Chair in Business Administration  
College of Business Administration  
Kansas State University  
110 Calvin Hall  
Manhattan, KS 66506  
Phone: 785-532-7227  
Fax: 785-532-7216  
Email: yebadi@ksu.edu

-----Original Message-----  
From: Kuhlman, Dennis [<mailto:dkuhlman@sal.ksu.edu>]  
Sent: Tuesday, March 02, 2010 11:34 AM  
To: Yar Ebadi (ebadi@ksu.edu)  
Subject: Graduate Program

Yar-

Would it be possible for you to send me (or Saeed Khan) a statement of support for our graduate program?

Dennis

March 2, 2010  
Yar M. Ebadi  
Dean- Business Administration  
110 Calvin  
Kansas State University

Sub: Use of online versions of MANGT810 and MANGT820 by proposed



Graduate Studies  
College of Business Administration  
107 Calvin Hall  
Manhattan, KS 66506-0802  
785-532-7190

March 1, 2010

Dr. Frederick J. Guzek, Associate Professor  
Department of Arts, Sciences and Business  
College of Technology and Aviation  
Kansas State University  
Salina, KS 67401

Dear Professor Guzek:

This responds to your February 24, 2010 request for a letter of support regarding the proposed inclusion of Operations Management and Analysis (Mangt810) and Behavioral Management Theory (Mangt820) in the proposed Professional Master of Technology curriculum to be offered by the Department of Arts, Sciences and Business. As you indicated, students in the proposed degree program will take five core courses, including the two management courses as degree requirements providing practical management education. Your request is predicated on approval of the degree proposal by your college, K-State Graduate School, and Kansas Board of Regents.

As you know, Mangt810 and Mangt820 are offered on the Manhattan campus and online. The faculty of the College of Business Administration has requested that students living within 30 miles of K-State's Manhattan campus attend the on-campus course, or obtain approval of the graduate program director before enrolling in the online course. It is our understanding the anticipated enrollment from the Professional Master of Technology in the two courses, either through on-campus and/or online, will be manageable within the current course offerings by the College of Business Administration.

---

We greatly appreciate the opportunity to collaborate with your department and college regarding the graduate programs offered by K-State. We believe the interdisciplinary nature of your proposed degree program will be enhanced through the inclusion of graduate courses in management offered by the College of Business Administration. Please do not hesitate to contact me ([jkatz@ksu.edu](mailto:jkatz@ksu.edu), 532-7190) should you have questions regarding our support for the program.

Sincerely,

*Jeff Katz*  
Jeffrey P. Katz, Ph.D.  
Professor and Associate Dean  
Director of Graduate Programs  
The Edgerley Family Chair in Business

Copy to: Dr. Stacy Kovar, Chair of the CBA Graduate Studies Committee





Industrial and Manufacturing  
Systems Engineering  
7037 Durland Hall  
Manhattan, KS 66506-5101  
785-322-3606  
Fax: 785-337-3734  
Email: [ims@ksu.edu](mailto:ims@ksu.edu)  
[www.ims.ksu.edu/](http://www.ims.ksu.edu/)

November 25, 2009

Raju Dandu, Professor  
Engineering Technology Department  
STC 101C  
K-State at Salina  
2310 Centennial Road  
Salina, KS 67401

Dr. Dandu,

The K-State IMSE faculty does not object to your department's plans to introduce the following courses:

COT 720 Application of Lean and Six Sigma Methods (3 credit hours)  
COT 721 Reliability Centered Maintenance of Plant Equipment (3 credit hours)

Sincerely,

Bradley A. Kramer, Ph.D.  
Ike and Leta Evans Engineering Chair  
Professor and Head, Industrial and Manufacturing Systems Engineering  
Director, Advanced Manufacturing Institute



**Kansas State University**

**Department of Electrical  
and Computer Engineering**

261 Rathbone Hall  
Manhattan, KS 66506 -5204  
785-532-5600

July 9, 2009

Dr. Saeed M. Khan  
Associate Professor & Interim Department Head  
Engineering Technology  
Kansas State University at Salina

Dr. Khan,

The Department of Electrical and Computer Engineering supports the new course proposals for COT 632 and COT 731 in Engineering Technology. We believe the content and audience for these courses are significantly different from what we offer in our curriculum. If you have any questions or concerns, please feel free to contact me.

Sincerely,

*Don M. Gruenbacher*

Associate Professor and Head  
Phone: (785) 532-4692  
Email: [grue@ksu.edu](mailto:grue@ksu.edu)

August 18, 2009



Department of Mathematics  
1311 Cardwell Hall  
Manhattan, KS 66506-2600  
785-532-6250  
Fax: 785-537-0546  
Email: math@ksu.ksu.edu

Dr. Saeed Khan  
Associate Professor & Department Head  
Engineering Technology  
Kansas State University at Salina  
2310 Centennial Road  
Salina, KS 67401

Dear Dr. Khan:

The Department of Mathematics has been informed about the proposal for COT 650, Analytical and Computational Tools in Engineering Technology, that you would like to offer at K-State at Salina, and we have no objections to the proposal.

Always,

A handwritten signature in black ink, appearing to read "L. Pigno", written over a faint, larger version of the same signature.

Louis Pigno  
Professor & Department Head

rm



July 9, 2009

Dr. Saeed M. Khan  
Associate Professor & Interim Department Head  
Engineering Technology  
Kansas State University at Salina

Dr. Khan,

The Department of Psychology supports the new course proposal for COT 702 Applied Research Skills and Methods. We believe the content and audience for this course is significantly different from what we offer in our curriculum. If you have any questions or concerns, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script, appearing to read "Jerome F. ...", written over a horizontal line.

Professor and Head  
Phone: (785) 532-6880  
Email: ~~fvickson~~@ksu.edu



Department of Statistics  
and Statistical Laboratory  
101 Dickens Hall  
Manhattan, KS 66506-0802  
785-532-6883  
Fax: 785-532-7736  
E-mail: [statdept@ksu.edu](mailto:statdept@ksu.edu)  
<http://www.ksu.edu/stats>

February 8, 2010

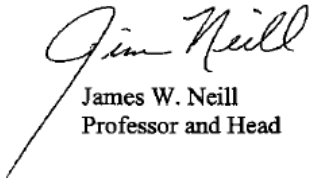
Dr. Saheed M. Khan  
Associate Professor and Department Head  
Department of Engineering Technology  
Kansas State University at Salina  
2310 Centennial Road  
Salina, KS 67401

Dear Dr. Khan,

I am writing in support of the Professional Master of Technology Program at K-State Salina. In particular, the Department of Statistics agrees to hold seats in the online Statistics 703 class for students in the PMT program. Professor James Higgins offers this class and is willing to hold space for five to ten students as requested with an anticipated start date of fall semester 2011.

Best wishes for a successful program. Please let me know if additional course accommodations need to be considered.

Sincerely,



James W. Neill  
Professor and Head

**Khan, Saeed M.**

---

**From:** Karin Westman [westmank@ksu.edu]  
**Sent:** Wednesday, March 10, 2010 11:28 AM  
**To:** Von Bergen, Donald  
**Cc:** Khan, Saeed M.  
**Subject:** Re: FW: English course/COT 701 differences

Hi Don,

Apologies again for the delay, but I write with good news: we've reviewed the proposed Professional Master of Technology and the new course, COT 701 "Advanced Technical Communication," and we support the creation of both. While there is some overlap between the proposed COT 701 and our existing ENGL 759, the differences of purpose and implementation outlined by Dr. Khan warrant the creation of COT 701.

Down the road, we may want to think about how some of our courses (such as ENGL 759) could be used towards the proposed degree.

Best wishes,

Karin

---

Karin E. Westman  
Department Head & Associate Professor  
Department of English, Kansas State University  
108 English / Counseling Services Building  
Manhattan, KS 66506  
westmank@ksu.edu ~ 785.532.2171  
<http://www.ksu.edu/english/westmank>

At 11:45 AM 3/3/2010, Von Bergen, Donald wrote:

>Hi Karin!

>

>Here is some additional information regarding the proposed technical  
>~~communication course for our Professional Master of Technology degree.~~

>

>>Feel free to contact Dr. Saeed Khan directly if you have any questions.

>

>>Thanks for your support!

>

>Don

>

>

>-- --

>

>

>-----Original Message-----

>>From: Khan, Saeed M.

>>Sent: Tuesday, March 02, 2010 12:24 PM

>>To: Von Bergen, Donald

>>Subject: RE: English course/COT 701 differences

>

>Don:

>

>>Please thank Karin for her input on overlap concerns between ENGL 759 and  
>>COT 701. Based on our description for COT 701 I am noting the following  
>>differences and points that I think makes it important for us to have this  
>>course,