

**Note:** Nomination packets from the previous year's award recipients are posted only to provide nominees with an example of a successful portfolio.

Nomination guidelines may vary slightly from year to year. Please refer to the Presidential Awards website for current guidelines.

<http://utsa.edu/facultyawards/awards/pres.html>

2011 PRESIDENT'S DISTINGUISHED ACHIEVEMENT AWARD NOMINATION

Date: Feb 7, 2011

NOMINEE INFORMATION					
Last name: SAYGIN	First: CAN	Middle I:	<input checked="" type="checkbox"/> Dr.	<input type="checkbox"/> Ms.	<input type="checkbox"/> Mr.
Title / Rank: Associate Professor (tenured)			Department: Mechanical Engineering		
Campus address: Engineering Bldg (EB) 3.04.56					
Phone: (210) 458-7614		can.saygin@utsa.edu			

I endorse this person for the following President's Distinguished Achievement Award (check one):

- Teaching Excellence** (tenured)  
 **Teaching Excellence** (tenure-track faculty)  
 **Teaching Excellence** (non-tenure-track faculty)

These awards are to recognize, encourage, and reward accomplished faculty whose command of their respective disciplines, teaching methodologies, communication skills, and commitment to learning translate into a superior learning experience for students. These awards are aimed at faculty who maintain high expectations and standards for their students, ensuring academic rigor, while meeting the challenges of motivating students and helping them develop into educated, ethical, and responsible citizens.

- Research Achievement** (tenured faculty)  
 **Research Achievement** (tenure-track faculty)

TENURED: This award is to recognize, encourage, and reward faculty who have conducted a sustained program of high quality, high impact research that has translated into national and international recognition and has made a substantial contribution to the faculty member's field.

TENURE-TRACK: This award is to recognize, encourage, and reward faculty who have conducted high quality, high impact research that shows distinct promise for national and international recognition and substantial contribution to the faculty member's field.

- Performance, Creative Production, or Other Scholarly Achievement** (tenured and tenure-track faculty)

This award is to recognize, encourage, and reward those individuals whose performance, creative production, or other scholarly achievement in the arts or other appropriate disciplines has manifested unusual excellence and merit. Further, this production has directly or indirectly benefited students and the University as well as the artistic or scholarly domain of the faculty member.

- Excellence in University Service** (tenured and tenure-track faculty)  
 **Excellence in University Service** (non-tenure-track faculty)

This award is to recognize, encourage, and reward those tenured and tenure-track faculty who are exemplary in their commitment to service within the University whose service has had major impact on the opportunities, lives, and future of UTSA students by providing leadership in critical areas such as advising students; student, department, college and university committee service; and/or creating new student programs and opportunities.

**\_\_\_\_\_ Excellence in Community Service (tenured and tenure-track faculty)**

This award is to recognize, encourage, and reward those tenured and tenure-track faculty who are exemplary in their service outside of the university, providing leadership and making significant contributions in external civic organizations and settings. Serving on civic boards and committees, and leading critical and valuable community initiatives, are some examples of desired involvement. This award recognizes the importance of sustained contributions to the external community that create connections with the university.

**\_\_\_\_\_ Advancing Globalization (tenured and tenure-track faculty)**

This award is to recognize, encourage and reward either an individual or a team of faculty who have significantly expanded UTSA's involvement in the global arena. The distinguished faculty should have made contributions in one or more of the following areas: the development and implementation of international components into the curriculum, study abroad programs, collaborations with foreign institutions.

*Please submit separate supporting materials for this nomination. Specific guidelines and a listing of prior award recipients are available online at <http://www.utsa.edu/facultyawards/> (click on Presidential Awards).*

*Electronic nominations are due no later than **Thursday, February 17, 2011.***

Signed: \_\_\_\_\_

Dean, College of ENGINEERING

## TEACHING PHILOSOPHY

### **1. START WITH THE END IN MIND**

My ultimate goal in my educational endeavor is to instill a sense of need in the hearts and brains of my students for lifelong learning. After all, *learning to learn* is the ultimate skill they are expected to have as *knowledge workers* in the *information economy*.

After attending the National Teaching Effectiveness Institute's "Teaching Effectiveness" workshop in 2004, my whole perception about teaching/learning has changed. As an educator, I see myself as a facilitator, whose primary responsibility is to create a stimulating atmosphere in which *learning*, rather than *teaching*, takes place naturally, and students grow and mature intellectually. I am passionate about my role as a facilitator who thrives to make learning a natural process for his students. However, I know that I am not always the primary source of information; my role is to guide my students by providing them with access to information wherever it might be.

As an educator, I am very much aware that we all learn in different ways and learning is about knowledge construction in which concepts are mapped and connected to each other. From sensing to intuitive learners, from visual to verbal learners, from active to reflective learners, and from sequential to global learners, all students are different. Therefore, my teaching style must have a balance to match these different learners in my class using a variety of active learning exercises. Knowledge construction occurs through interaction. I see interaction at three levels. First, I interact with my class; every 10-15 minutes, I raise a question and make them talk, participate, and share thoughts. Second, I occasionally raise an open-ended question, ask them to turn to their neighbors, discuss the issue for a few minutes, and report back to the class, which leads to a discussion among students. Third, I give group-based homework assignments and semester projects, which facilitate a longer interaction among the group members after class.

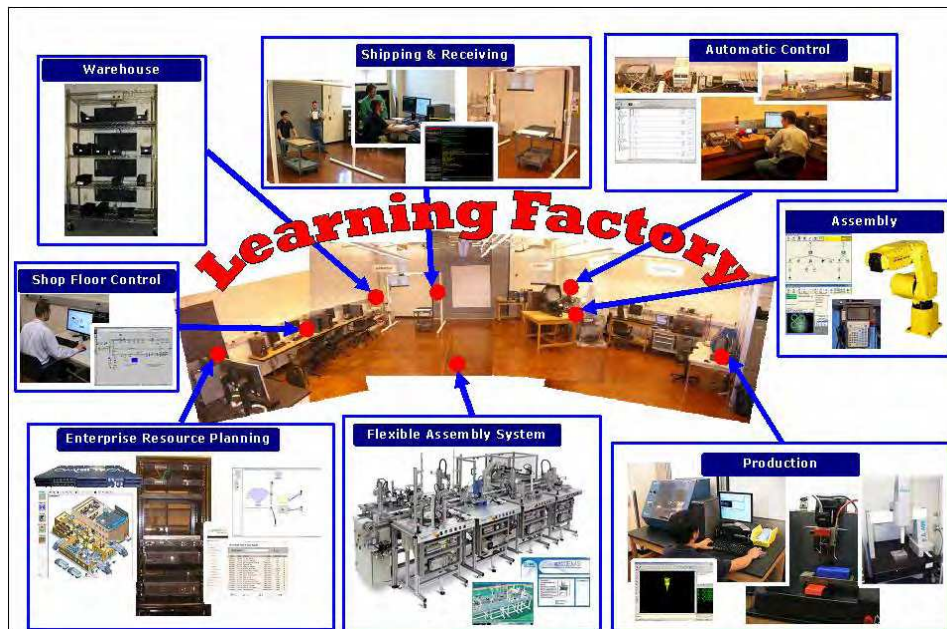
In this day and age, it is important to effectively relate concepts to real life. Students expect to see a seamless flow of concepts and their real-life relevance, similar to using a computer to search for concepts or having the world at their fingertips on their cell phones. Therefore, I bring my research and industry experience to class in the form of case studies, videos, or my own articles and technical papers. Every research proposal, project, or industry contact is an opportunity to not only advance my research boundaries but also bring the experience to my class and share with them. Such active learning exercises lead to authentic learning and create spontaneity in class, which goes a long way in keeping the students involved in the learning process compared to a long, monolog-style lecture.

Beyond the fundamental content of the courses I teach, I want to make sure that I work persistently towards the ultimate goal: Foster critical thinking, facilitate the acquisition of life-long learning skills, and encourage them to become effective learners.

### **2. COURSE AND LABORATORY DEVELOPMENT**

I joined UTSA in August 2006 as a tenured associate professor of mechanical engineering. Since then, I have been involved in various educational activities from K-12 to undergraduate level to graduate level. I have been serving as Center Director for the Interactive Technology Experience Center (iTEC, <http://itec.utsa.edu>) since September 2008. I interact very closely with the K-12 community by giving lectures and seminars to teachers, parents, and K-12 students. At the undergraduate level, I have developed four (4) new courses and have taught these courses several times. At the graduate level, I have taught two of the four undergraduate level courses with additional class work and semester projects. I have been serving as Graduate Advisor of Record (GAR) since September 2007. My area of

responsibilities currently includes three graduate programs. First, it was the MS program in Mechanical Engineering. Then I led the effort to develop a new MS program in Advanced Manufacturing and Enterprise Engineering (AMEE) in 2008-2009; the program started in Fall 2009. Recently, PhD in Mechanical Engineering has been approved and will start in Fall 2011.



**Figure 1.** Manufacturing Systems and Automation Lab for Integrated Teaching, Research, and Outreach

I have been very active in laboratory development. All the four (4) courses I have developed in UTSA rely on substantial laboratory applications. Starting in Fall 2006, I established a laboratory, namely Manufacturing Systems and Automation (MSA), which supports both undergraduate and graduate level courses. The MSA Lab is configured to mimic a manufacturing facility that has all integrated functions that demonstrate not only the concept embedded in that function, but also the interconnection among the concepts, which is far more complicated to demonstrate without a laboratory environment. I see my laboratory as a learning factory, as shown in Figure 1.

As Director of the College of Engineering Machine Shop, I established an educational machine shop to support hands-on manufacturing courses, including ME 3263 Manufacturing Engineering, ME 4812 Senior Design I, and ME 4813 Senior Design II. Similarly, I established a computer-aided design and manufacturing laboratory in the machine shop to support design and manufacturing courses that utilize software, including ME 4563 Computer Integrated Manufacturing and ME 4573 Facilities Planning and Design. With my initiative, an industry-grade CNC (computer numerical controlled) machine tool was purchased for the machine shop in 2009 to support these courses at a higher level. In order to facilitate hands-on learning in the laboratory and semester project part of the aforementioned courses, I hired a second technician first as a part timer (2009-2010) and recently (Fall 2010 – present) as a full time employee in the machine shop. Student work closely with the experienced technicians and see the “manufacturing processes in action”.

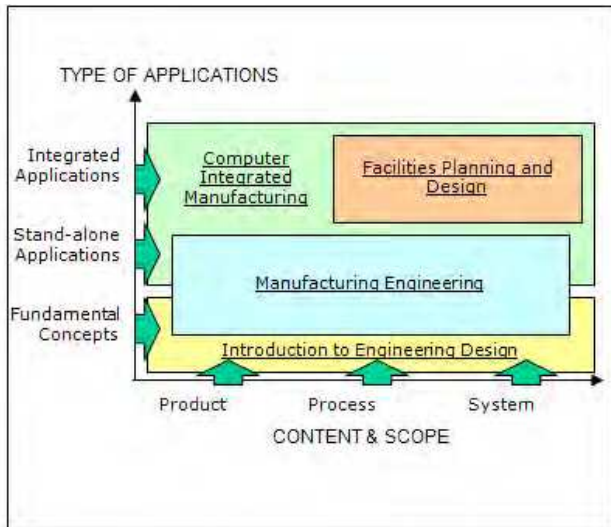
The aforementioned educational activities and programs I have developed along the educational pipeline (K-20) have always been founded on those principles I have delineated in Section 1: *Facilitator rather than instructor, learning rather than teaching, active learning, hands-on learning, projects-based learning, and learning to learn.*

**Table 1.** Courses Developed (2006-present)  
(Number of classes taught is shown in parenthesis)

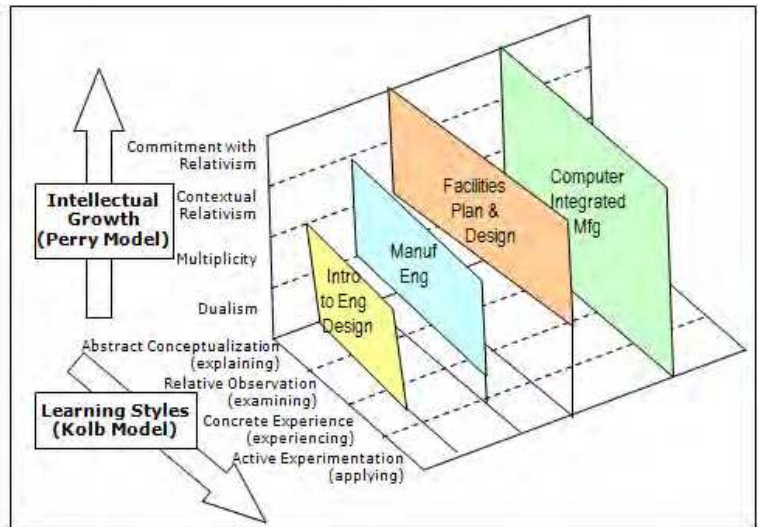
<b>Course Number, Name</b>	<b>Course Description</b>
<b>ME 1301</b> <b>Introduction to Engineering Design (1)</b>	This purpose of this course is to introduce the concept of engineering design. Engineering Design is an iterative decision-making process used for devising a component, product, process, or system and its form to meet the needs and functions desired by the customer. As an introduction course to engineering design at freshman level, this course focuses on the design process itself and highlights its iterative nature through a series of lectures and group-based, active learning exercises. In addition, the course also presents an overview on material and manufacturing process selection, engineering economics, and project management.
<b>ME 3263</b> <b>Manufacturing Engineering (5)</b>	An integrated coverage of mechanical properties of materials, tolerances, measurement and quality assurance, manufacturing processes, and manufacturing systems; fundamental definitions, design for manufacturing, and mathematical models; hands-on applications related to measurement and manufacturing processes.
<b>ME 4573/5573</b> <b>Facilities Planning and Design (3)</b>	This course presents basic concepts and fundamentals essential to understand, analyze, and solve problems related to manufacturing plant layout and material handling system selection. Topics include Product, Process, and Schedule Design; Flow, Space, and Activity Relationships; Material Handling; Layout Planning Models and Design Algorithms; and Warehouse Operations. The subjects included in this course are organized around integrated product, process, and manufacturing system design principles.
<b>ME 4563/5563</b> <b>Computer Integrated Manufacturing (2)</b>	Fundamental concepts and models related to computer aided design, computer aided process planning, computer-aided manufacturing, production planning and scheduling, and manufacturing execution systems. Laboratory work includes computer-aided applications and programming of automated production equipment.

All four courses, as described in Table 1, consist of laboratory applications and/or semester projects to facilitate hands-on learning. As shown in Figure 2, they have been designed to cover a certain depth and breadth that integrates product, process, and system development from the standpoint of manufacturing engineering. The content of the courses described above have been determined by considering the Perry Model and the Kolb Learning Style Model to encourage life-long learning within the scope of integrated manufacturing concept, as shown in Figure 3.

In the Perry Model, the first level is Dualism, where the students view teachers as absolute authorities. At this level they expect the teacher to give them the facts, and they believe that there are only right or wrong solutions to problems. As students mature to the next level, Multiplicity, they still heavily rely on authorities, but they acknowledge legitimate uncertainty. At this level, they become aware of the fact that for certain problems there is no just a single solution and for such cases one answer can be as good as the other. The third level is Contextual Relativism. At this level, learners accept that they are legitimate sources of knowledge. They realize that authorities help but learners themselves are the active decision makers. The fourth level is Commitment with Relativism. At this level, students synthesize solutions to the consequences of making the commitment, and they realize that the perfect or ultimate solution does not exist but they are committed to struggle with the process and to continually improve.



**Figure 2.** Mapping of Courses



**Figure 3.** Curriculum Development Philosophy: Perry and Kolb Models\*

(\* Perry, W.G., Intellectual and Ethical Development in the College Years: A Scheme, New York: Holt, Rinehart and Wiston, 1970.  
 Kolb, D.A., Experimental Learning: Experience as the Source of Learning and Development, Englewood Cliffs: Prentice Hall, 1984.)

In the Kolb Learning Style Model, four learning modes exist: (1) Abstract Conceptualization (learning based on explaining concepts), (2) Reflective Observation (based on examining the events, operations, etc. rather than actively participating), (3) Concrete Experience (based on actively experiencing with an event, operation, etc.), and (4) Active Experimentation (learning by getting involved in an event, interacting with it, and affecting the outcomes).

### 3. LEARNING OUTCOMES AND ASSESSMENT

It is very importance to effectively communicate to the class the educational objectives and outcomes in a course in the beginning of the semester. In my syllabi, I always have the educational objectives mapped onto the levels of Bloom’s taxonomy of cognitive domain, which represents connected levels of intellectual maturity. I use the first lecture of every semester to introduce the syllabus and describe the objectives and outcomes in order to set the right expectations and reach a mutual agreement with the students in terms of what the course will and will not lead to.

After defining the objectives and outcomes, I dissect the course content into modules, similar to chapters, each module is further divided into lesson plans. A balanced use of PowerPoint slides, the whiteboard in the classroom, pdf files of hand-written supplements or solutions to problems, videos, and technical articles is very important to break the possible monotony and to create a stimulating environment. The content of each lesson plan is further examined to determine what type of tests, homework assignments, class discussion topics, and quizzes should be developed with sub-goals all meaningfully contributing to the overall objectives and outcomes.

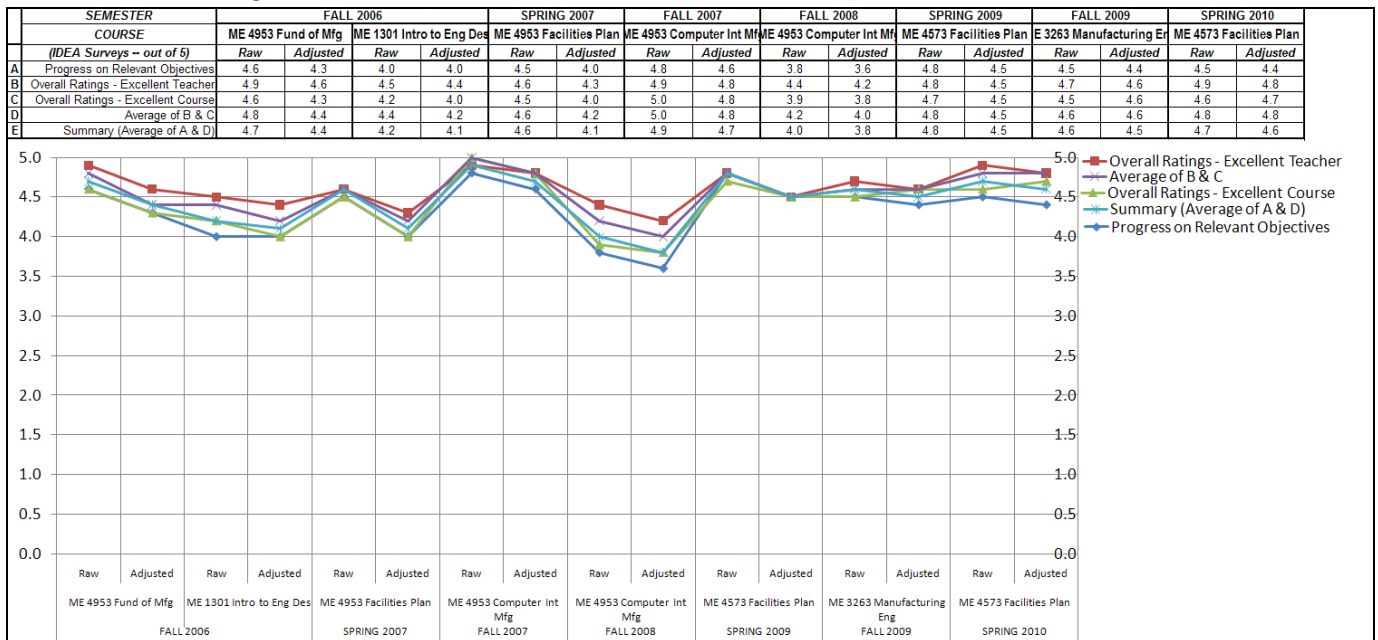
I find it very effective to give 2-part tests. Part-1 is 15 minutes and multiple-choice with closed books/notes and Part-2 is an open book/note exam for about 75 minutes. Part-1 represents the basic knowledge they need to have acquired as a “professional engineer”. While Part-2 is more like real-life, where an engineer faces a problem and uses the information sources (open books/notes) to solve it.

I give group-based homework assignments. I encourage them to work out the problem individually, meet as a group, discuss individual solutions, and turn in one sheet after they agree on the solution. Beyond technical skills, this approach helps build communication skills and help them become team players. I grade the answer sheet and put my comments if the answer is not correct, but do not provide them with the answer. Each group is supposed to go back and rework the problem.

Timely feedback to students on their performance and showing each student how they rank in the class with respect to others is very important. I monitor students’ performance in an Excel sheet that shows their grades throughout the semester. I assign each student a 4-digit list number (each student knows his/her number only) and I share this file with the students every time I grade a homework assignment, a lab report, or a test. Each student receives feedback from me almost every week and they can see how well they are doing with respect to the class. Last but not least, I give anonymous surveys in the middle of the semester to the students about my teaching style. Such two-way communication methods help both me and the students understand, before it is too late, what the areas of improvement are so that corrective actions can be taken immediately.

In Sections 1 through 3, I have tried to delineate my teaching philosophy, how I see my role in the classroom and outside the classroom, my approach to course and laboratory development, and how I interact with my students. My teaching evaluations are shown in Table 2.

**Table 2. Teaching Evaluations**



I received the 2009 College of Engineering Excellence in Teaching Award. However, there is nothing more rewarding than reading a comment in the student surveys, such as the following from ME 3263 Manufacturing Engineering in Fall 2010:

***“Great professor and class! Just keep up that good work. Extremely well prepared for class and made me as a student, who is not that interested in this class material, eager to learn.”***



## **APPENDIX**

- Syllabi
- Course Evaluations
- Student Support Letters

**ME 3263 – Manufacturing Engineering**  
**Spring 2011**

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ME 3243.

An integrated coverage of mechanical properties of materials, tolerances, measurement and quality assurance, manufacturing processes, and manufacturing systems; fundamental definitions, design for manufacturing, and mathematical models; hands-on applications related to measurement and manufacturing processes. (Formerly titled Materials Processing.)

**Instructor:** Dr. Can (John) Saygin **E-mail:** [can.saygin@utsa.edu](mailto:can.saygin@utsa.edu)  
**Phone:** 210-458-7614 **Fax:** 210-456-6504  
**URL:** <http://engineering.utsa.edu/~saygin/> **Office:** EB 3.04.56

**Class Hour:** 9:30-10:45 am Tuesdays and Thursdays **Classroom:** BB 3.02.28  
**Lab Hour:** To be determined in class **Laboratory:** Machine Shop (PDSL Bldg on West Campus)  
**Office Hour:** 8:30-9:30 am & 11:00-11:30 am Tuesdays and Thursdays  
**Textbook:** “Fundamentals of Modern Manufacturing: Materials, Processes, and Systems,” M.P. Groover, publisher: Wiley -- ISBN: 978-0470-467002, 4th Edition, 2010 or ISBN: 0-471-74485-9, 3rd Edition, 2006.

**Reference Books:**

1. “Manufacturing Processes and Materials,” G.F. Schrader and A.K. Elshennawy, Society of Manufacturing Engineers, ISBN:0-87263-517-1, 2000.
2. “Materials and Processes in Manufacturing,” E.P. DeGarmo, J.T. Black, and R.A. Kohser, Prentice Hall, ISBN:0-02-328-621-0, 1997.
3. “Fundamentals of Manufacturing,” Society of Manufacturing Engineers, 1993.
4. “Automation, Production Systems, and Computer-Integrated Manufacturing,” M.P. Groover, Prentice Hall, ISBN: 0-13-054652-6, 1987.

**Course Description:** The purpose of this course is to introduce the “language of manufacturing” by providing an integrated coverage of *manufacturing processes* and *manufacturing systems*. The course presents a blend of basic definitions and mathematical models with the objective of building intuition about basic manufacturing engineering concepts. Topics include Mechanical Properties of Materials; Tolerances; Measurement and Quality Assurance; Manufacturing Processes; Manufacturing Systems. Within the technical capabilities of the College of Engineering Machine Shop, there will be several hands-on laboratory applications.

**Educational Objectives:** By the end of this course, the students will be able to

1. **Explain** the basic concepts related to materials, tolerances, manufacturing processes, and manufacturing systems (L2\*).
2. **Apply** stress/strain equations to a variety of applications (L3\*).
3. **Calculate** manufacturing parameters for a given product description and a process (L3\*).
4. **Determine** performance measures of a manufacturing system for a given set of shop floor conditions (L3\*).

\* L: Levels in Bloom’s Taxonomy of Educational Objectives (L2: Comprehension, L3: Application)

**TOPICS****Chp 1. Mechanical Properties of Materials**

*Materials* are a basic element of the engineering enterprise. The effective application of materials is critical to the success of the manufacturing of a product and its ultimate use. This chapter reviews the basic characteristics of *materials* and their application.

**Chp 2. Tolerances**

Exact sizes of parts are impossible to produce. For practical reasons, parts are made to varying degrees of accuracy depending on their functional requirements. A *tolerance* refers to the degree of accuracy that is required in a dimension. This chapter presents the types of tolerances, development of manufacturing specifications, and interchangeability concept.

**Chp 3. Measurement and Quality Assurance**

The purpose of inspection in quality assurance is to determine, by means of a measurement process, whether or not manufactured materials and products conform to specifications. This chapter describes the standards, instruments, and the use of coordinate measuring machine for quality control and assurance.

**Chp 4. Manufacturing Processes**

This objective of this chapter is to present the basic manufacturing processes. The topics have been categorized under three headings: Bulk Deformation (forging, rolling, extrusion, drawing), sheet-metal forming (shearing, bending), and metal cutting (turning, milling, drilling).

**Chp 5. Manufacturing Systems: An Overview on Basics**

The objective of this chapter is to present the basic concepts related to production systems. In this chapter, the relationship between the machining conditions and cost; interaction between design and manufacturing from the standpoint of concurrent engineering; types of production systems based on the materials flow and part volume & variety; basic mathematical models for analysis are presented.

**GRADING**

Midterm Exam 1	25 %
Midterm Exam 2	25 %
Midterm Exam 3	25 %
Homework	10 %
Laboratory Work	5 %
Laboratory Test*	5 %
Laboratory Attendance	5 %
<b>Total</b>	<b>100 %</b>
	(No final exam)

\* Laboratory Test will be given at the end of the semester and will include topics covered in the Machine Shop throughout the semester.

**COURSE POLICIES**

**Lecture Notes:** Students are expected to **have the textbook throughout the semester**. The exams will have open books & notes sections; therefore **book sharing among students is not feasible** since there is no exchange of book during the exams. **Lecture notes**, which include Powerpoint slides and photocopies from reference books, will be handed out in class and/or made available on-line. The Powerpoint slides have gaps that need to be filled out by the students during lectures. In-class discussions will be encouraged through various **active learning exercises**; therefore attendance is a key to success.

**Exams:** **Three midterm exams will be given**. They will consist of two parts: Part 1 Multiple Choice (Closed Books & Notes) and Part 2 Problems (Open Books and Notes). The exams will **not be comprehensive**. Students will be responsible for all lecture and laboratory material that have been covered for the examinations regardless if an absence was or was not excused. **Make-up exam** is only given in case of a medical emergency. Contacting the instructor, if possible, before missing the exam will definitely help in working out a solution for the student. The format of the make-up exams could completely be different than the regular tests.

**Exam-Scoring Scheme (for open books-open notes exams)**

Method correct, no errors: 100%

Method correct, but contains arithmetic errors: -10% per error

Solution contains a minor theoretical error: -20%

Solution contains a more serious theoretical error: -30%

Solution contains a major theoretical error: -50%

Solution contains more than one theoretical error of any kind: -70%

I have no idea what you are trying to do: -100%

**Students are expected to write their solutions in a logical order starting from top of their answer sheet; "jumbled" solutions, even if the solution is correct, can only receive 95%.**

**Laboratory Applications:** There will be 10 weeks of labs during the semester. They will be held in the Educational Machine Shop in the College of Engineering Machine Shop on West Campus. **Lab hours will be determined based on the weekly schedule of the students**. Students will be working in teams of four in the machine shop. **Students are not allowed to work in the lab unsupervised**. See last page of the syllabus for directions.

**Homework:** **Several homework assignments** will be given. Some homework questions will be by **teams** of students and some may be done **individually**. There will be a **10% reduction** per day for late submissions.

**Evaluations:** In order to facilitate an effective learning environment, you may be asked to anonymously **evaluate the course content and my teaching style** during the semester. In addition, since some activities will require team work, students may also be asked to **evaluate each other** (i.e., peer evaluation) in their teams in order for me to give fair grades to individuals.

**Attendance:** Each student is expected to attend the lectures and lab hours unless he/she has a valid excuse that has been communicated to the instructor in a timely manner. Students are expected to be in the **classroom on time**. **Tardiness beyond the first 5 minutes of the class will not be tolerated**. Students who are late to class should not disturb their classmates by coming in late; they will miss the class. **Leaving the class/lab early is also not acceptable**. Students need to talk with the instructor prior to class if they have a valid excuse. During class please turn off your cell phones, PDAs, and/or any other device that is not related to the subject matter. **If a student misses a lab without informing Dr. Saygin at least 24 hours prior to the scheduled lab session, this will be reflected on that day's lab attendance (5% of the overall grade)**. Any missed lab, with or without an excuse communicated to Dr. Saygin, **must be compensated within a week in a make-up lab**. Otherwise, the student will lose points on that particular lab application **(10% of the overall grade)**.

**Grading: A:**(90-100), **B:**(80-89), **C:**(70-79), **D:**(60-69), **F:**(below 59)

**Academic Dishonesty (Visit <http://www.utsa.edu/osia/> for more info):**

**"Unauthorized" Collaboration:** Although teamwork is encouraged for studying the course material and for some assignments, each student is required to do his/her own original thinking during **exams**. Do not tempt your neighbor into cheating.

**Plagiarism:** Copying or using someone else's work without giving credit (citation) intentionally or unintentionally is a violation of UTSA's Student Code of Conduct.

**Academic dishonesty will be dealt with following the University regulations.**

**UTSA Disability Services** office (Phone: 210-458-4157) provides accommodations and equipment that enable students to participate in class activities. If you need assistance, please contact the office.

**UTSA Tomas Rivera Center** (Phone: 210-458-4694) provides learning assistance, academic coaching, and tutoring. If you need assistance, please contact the office.

**WEEKLY SCHEDULE**

ME 3263 Manufacturing Engineering -- SPRING 2011 -- CRN 26475					
Time: 9:30-10:45 am -- Classroom: BB 3.02.28					
Week	Tuesday	Thursday	Lab Schedule		
1	Tuesday, January 11, 2011 <i>Welcome; Syllabus; Learning Styles</i>	Thursday, January 13, 2011 Chp 1. Mechanical Properties of Materials	FORM LAB GROUPS AND ASSIGN TIME SLOTS		
2	Tuesday, January 18, 2011 Chp 1. Mechanical Properties of Materials	Thursday, January 20, 2011 Chp 1. Mechanical Properties of Materials			
3	Tuesday, January 25, 2011 Chp 2. Tolerances	Thursday, January 27, 2011 Chp 2. Tolerances	LAB	Jan 24-28	1
4	Tuesday, February 01, 2011 Chp 2. Tolerances	Thursday, February 03, 2011 Chp 3. Measurement and Quality Assurance	LAB	Jan 31-Feb4	2
5	Tuesday, February 08, 2011 Chp 3. Measurement and Quality Assurance	Thursday, February 10, 2011 Chp 3. Measurement and Quality Assurance	LAB	Feb 7-11	3
6	Tuesday, February 15, 2011 <b>MIDTERM TEST #1 -- part 1</b>	Thursday, February 17, 2011 <b>MIDTERM TEST #1 -- part 2</b>	<b>NO LAB DUE TO TEST#1</b>		
7	Tuesday, February 22, 2011 Chp 4. Mfg Processes: Bulk Deformation (rolling, forging, extrusion)	Thursday, February 24, 2011 Chp 4. Mfg Processes: Bulk Deformation (rolling, forging, extrusion)	LAB	Feb 21-25	4
8	Tuesday, March 01, 2011 Chp 4. Mfg Processes: Bulk Deformation (rolling, forging, extrusion)	Thursday, March 03, 2011 Chp 4. Mfg Processes: Bulk Deformation (drawing) and Sheet Metal Forming	LAB	Feb 28-Mar4	5
9	Tuesday, March 08, 2011 Chp 4. Mfg Processes: Bulk Deformation (drawing) and Sheet Metal Forming	Thursday, March 10, 2011 Chp 4. Mfg Processes: Metal Cutting	LAB	Mar 7-11	6
10	Tuesday, March 15, 2011 Spring break - NO CLASS	Thursday, March 17, 2011 Spring break - NO CLASS	<b>NO LAB DUE TO SPRINGBREAK</b>		
11	Tuesday, March 22, 2011 Chp 4. Mfg Processes: Metal Cutting	Thursday, March 24, 2011 Chp 4. Mfg Processes: Metal Cutting	LAB	Mar 21-25	7
12	Tuesday, March 29, 2011 <b>MIDTERM TEST #2 -- part 1</b>	Thursday, March 31, 2011 <b>MIDTERM TEST #2 -- part 2</b>	<b>NO LAB DUE TO TEST#2</b>		
13	Tuesday, April 05, 2011 Chp 5. Mfg Systems: Materials flow, production volume & part variety	Thursday, April 07, 2011 Chp 5. Mfg Systems: Materials flow, production volume & part variety	LAB	Apr 4-8	8
14	Tuesday, April 12, 2011 Chp 5. Mfg Systems: Analysis of automated lines	Thursday, April 14, 2011 Chp 5. Mfg Systems: concepts & math models	LAB	Apr 11-15	9
15	Tuesday, April 19, 2011 Chp 5. Mfg Systems: Analysis of automated lines	Thursday, April 21, 2011 Chp 5. Mfg Systems: concepts & math models	LAB	Apr 18-22	10
16	Tuesday, April 26, 2011 Chp 5. Mfg Systems: Analysis of automated lines AND <b>Lab Test</b>	Thursday, April 28, 2011 Student Study Day - NO CLASS	<b>NO LAB</b>		
<b>MIDTERM EXAM #3 DURING FINALS - DATE/TIME TO BE DETERMINED BY UTSA</b>					

Lab groups and lab hours will be determined during the first three lecture hours. There will be a total of ten (10) 2-hour lab sessions in the Machine Shop during the semester. The Machine Shop is the building number 31 on the map at <http://utsa.edu/maps/1604/>



ME 3263 Manufacturing Engineering -- CRN: 26475  
Spring 2011 – Dr. Saygin – Room: BB 3.02.28

**UNDERSTANDING OF COURSE POLICIES  
ME3263 Manufacturing Engineering (Sp2011)**

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

UTSA E-Mail Address: .....@my.utsa.edu

Make Up a 4-Digit Number for List Number in Grades Sheet  
(The first digit must be non-zero): \_\_\_\_\_

I HAVE A COPY OF THE **COURSE SYLLABUS**. \_\_\_\_\_  
**Initials**

I HAVE BEEN INFORMED ABOUT THE COURSE POLICIES AS DEFINED IN THE SYLLABUS UNDER THE FOLLOWING HEADINGS:

- Lecture Notes**
- Exams**
- Exam-Scoring Scheme**
- Laboratory Applications**
- Homework**
- Evaluations**
- Attendance**
- Grading**
- Unauthorized Collaboration**
- Plagiarism**
- UTSA Disability Services**
- UTSA Tomas Rivera Center**

-----  
**SIGN**

-----  
**DATE**

**ANY COMMENTS**

**PLEASE RETURN TO Dr. SAYGIN AFTER YOU FILL OUT AND SIGN THE FORM**

**Where is the Machine Shop?**  
<http://www.utsa.edu/maps/1604/>



**There is limited parking... And some days, no parking close by due to the on-going construction ... See <http://www.utsa.edu/maps/ParkingMap.pdf>**

**Lab Technicians:**

Mr. David Kuentler, [david.kuentler@utsa.edu](mailto:david.kuentler@utsa.edu)

Mr. Paul Krueger, [paul.krueger@utsa.edu](mailto:paul.krueger@utsa.edu)

Phone: 458-5583

**ME 4573 (CRN:26352) -- 5573 (CRN:26238)**  
**Facilities Planning and Design**  
**Spring 2010**

**Instructor:** Dr. Can (John) Saygin **E-mail:** [can.saygin@utsa.edu](mailto:can.saygin@utsa.edu)  
**Phone:** 210-458-7614 **Fax:** 210-456-6504  
**URL:** <http://engineering.utsa.edu/~saygin/> **Office:** EB 3.04.56

**Class Hour:** 9:30 – 10:45 am Tuesday and Thursday

**Office Hours:** 10:45-11:45 am Tuesday and Thursday

**Classroom:** HSS 3.02.24

**Textbook:** "Facilities Planning," J.A. Tompkins, J.A. White, Y.A. Bozer, and J.M.A. Tanchoco, 2003, John Wiley and Sons, Inc., 3<sup>rd</sup> Edition, ISBN: 0-471-41389-5.

**Course Description/Objectives:**

Facilities Planning determines how an activity's tangible fixed assets best support achieving the activity's objective; thus, it is a design activity. This course presents basic concepts and fundamental knowledge essential to understand, analyze, design, plan, and solve problems related to facilities, manufacturing plant layouts, and material handling systems. The subjects included in this course are organized around integrated product, process, and manufacturing system design principles.

**Educational Objectives:** By the end of this course, the students will be able to

1. **List** the basic factors that affect material flow in a manufacturing facility (L1\*).
2. **Explain** the major types of manufacturing plant layouts and the characteristics of fundamental material handling equipment (L2).
3. **Determine** the most efficient layout and **calculate** performance measures for a given product portfolio and demand pattern (L3).
4. **Apply** the concepts to solve a manufacturing plant layout problem in a detailed semester-long project.(L3).

\*L: Levels in Bloom's Taxonomy of Educational Objectives  
(L1: Knowledge, L2: Comprehension, L3: Application)

<b>GRADING*</b>		<b>TOPICS</b>
Midterm Exam 1	20 %	<b>(Chapter number in the textbook shown in parentheses)</b> 1. Introduction to Materials Handling & Plant Layout (Chp. 1) 2. Product, Process, and Schedule Design (Chp. 2) 3. Flow, Space, and Activity Relationships (Chp. 3) 4. Material Handling (Chp. 5) 5. Layout Planning Models and Design Algorithms (Chp. 6) 6. Warehouse Operations (Chp. 7)
Midterm Exam 2	20 %	
Homework Assignments	10 %	
Quizzes	5 %	
Project ( <i>breakdown below</i> )	45%	
Work Package #1:	10%	
Work Package #2:	15%	
Work Package #3:	15%	
Presentation :	5%	
Total	100%	
<i>(No final exam)</i>		

\*Since this is a cross-listed course (undergrads and grads taking this class together), the requirements for the graduate student projects and homework assignments will be different than the ones for undergraduates.



**WEEKLY SCHEDULE**

<b>ME4573/5573 -- Facilities Planning and Design (Room: HSS 3.02.24)</b>	
<b>Tuesday (9:30 - 10:45 am)</b>	<b>Thursday (9:30 - 10:45 am)</b>
Tuesday, January 12, 2010 Welcome to Facilities Planning and Design - Syllabus and learning objectives/styles	Thursday, January 14, 2010 1. Introduction to Facilities Planning and Design
Tuesday, January 19, 2010 <i>Project Topic Selection and Team Formation</i>	Thursday, January 21, 2010 2. Product, Process, and Schedule Design
Tuesday, January 26, 2010 2. Product, Process, and Schedule Design	Thursday, January 28, 2010 2. Product, Process, and Schedule Design
Tuesday, February 02, 2010 <i>Discussion on WP#1 progress</i>	Thursday, February 04, 2010 2. Product, Process, and Schedule Design
Tuesday, February 09, 2010 2. Product, Process, and Schedule Design	Thursday, February 11, 2010 2. Product, Process, and Schedule Design
	<b>WORK PACKAGE #1 Due 9:30 am Feb 11.</b>
Tuesday, February 16, 2010 3. Flow, Space, & Activity Relationships	Thursday, February 18, 2010 3. Flow, Space, & Activity Relationships
Tuesday, February 23, 2010 3. Flow, Space, & Activity Relationships	Thursday, February 25, 2010 3. Flow, Space, & Activity Relationships
Tuesday, March 02, 2010 <b>Midterm Examination #1 - Part 1</b>	Thursday, March 04, 2010 <b>Midterm Examination #1 - Part 2</b>
Tuesday, March 09, 2010 <i>Discussion on WP#2 progress</i> Material Handling	Thursday, March 11, 2010 4. Material Handling
Tuesday, March 16, 2010 <b>NO CLASS... Spring Break</b>	Thursday, March 18, 2010 <b>NO CLASS... Spring Break</b>
Tuesday, March 23, 2010 4. Material Handling	Thursday, March 25, 2010 4. Material Handling
	<b>WORK PACKAGE #2 Due 9:30 am Mar 25.</b>
Tuesday, March 30, 2010 5. Layout Planning Models & Design Algorithms	Thursday, April 01, 2010 5. Layout Planning Models & Design Algorithms
Tuesday, April 06, 2010 5. Layout Planning Models & Design Algorithms	Thursday, April 08, 2010 5. Layout Planning Models & Design Algorithms
Tuesday, April 13, 2010 <i>Discussion on WP#3 progress</i> 6. Warehouse Operations	Thursday, April 15, 2010 6. Warehouse Operations
Tuesday, April 20, 2010 6. Warehouse Operations	Thursday, April 22, 2010 <i>Project Presentations</i>
	<b>WORK PACKAGE #3 Due 9:30 am Apr 22.</b>
Tuesday, April 27, 2010 <i>Project Presentations</i>	Thursday, April 29, 2010 <b>NO CLASS... Student Study Day</b>
<b>Midterm Examination #2 will be given during the week of the final exams (05/3-7/2010).</b>	

### IMPORTANT DATES

#### Project:

Work Package #1 due 9:30 am Thursday, Feb 11, 2010

Work Package #2 due 9:30 am Thursday, Mar 25, 2010

Work Package #3 due 9:30 am Thursday, Apr 22, 2010

Presentations – 9:30-10:45 am Thursday, Apr 22 and Tuesday, Apr 27, 2010

#### Midterm Examinations:

Test #1 – Part 1: Tuesday, Mar 2, 2010

Test #1 – Part 2: Thursday, Mar 4, 2010

Test #2 – Will be given during the week of the final exams according to UTSA's finals schedule

**Spring Break:** Mar 15-19, 2010

### COURSE POLICIES

**Lecture Notes:** Students are expected to **have the textbook throughout the semester**. In addition to closed books and notes part, the exams may have open books & notes section; therefore **book sharing among students is not feasible** since there is no exchange of books during the exams. Although **lecture notes**, which include Powerpoint slides and photocopies from other books, will be handed out in class, students are expected to take notes during lectures and study the textbook. The Powerpoint slides will have gaps that need to be filled out by the students during lectures. In-class discussions will be encouraged through various **active learning exercises**; therefore attendance is key to success.

**Attendance:** Each student is expected to attend the lectures unless he/she has a valid excuse that has been communicated to the instructor in a timely manner. Students are expected to be in the **classroom on time**. **Tardiness beyond the first 5 minutes of the class will not be tolerated**. Students, who are late to class, should not disturb their classmates by coming in late; they will simply miss the class. **Leaving the class early is also not acceptable**. Students need to talk with the instructor prior to class if they have a valid excuse. During the lectures, please turn off your cell phones, PDAs, and/or any other device that is not related to the subject matter. If you choose to bring your laptops to class, it should be for the course itself, not for any other activities unrelated to the course.

**Exams:** Two Mid-term Exams will be given. The exams will comprise **two parts**: Multiple Choice Part (Closed Books and Closed Notes) and Problems Part (Open Textbook and Open Notes). Students will be responsible for all lecture material that has been covered regardless if an absence was or was not excused. **Make-up exam** is only given in case of a medical emergency. The format of the make-up exams could completely be different than the regular tests.

#### Exam-Scoring Scheme (for open books-open notes part)

Method correct, no errors: 100%

Method correct, but contains arithmetic errors: –10% per error

Solution contains a minor theoretical error: –20%

Solution contains a more serious theoretical error: –30%

Solution contains a major theoretical error: –50%

Solution contains more than one theoretical error of any kind: –70%

I have no idea what you are trying to do: –100%

*Students are expected to write their solutions in a logical order starting from top of their answer sheet: “jumbled” solutions, even if the solution is correct, can only receive 95%.*

**Quizzes:** There will be **unannounced quizzes** during lectures. No make up will be given for missed quizzes so do not miss lectures.

### COURSE POLICIES (cont'd)

**Project:** A Semester Project will be conducted in teams of 4-5 students per project team. The starting point will be a product definition and a demand pattern, which will be the same for all groups. Then each project team will develop their own strategy to design and establish a facility to produce the product. In order to guide the students, three work packages (WP#1, WP#2, and WP#3) will be assigned throughout the semester. Please see the weekly schedule for WP deadlines. Each work package will need to be completed by its deadline; a hard-copy in a binder will be turned in and an electronic copy will be emailed to the instructor. There will be a 10% reduction in grade for the work package per day for late submissions effective 9:31 am of its deadline. Each project team may need to schedule some additional time in order to complete the project in a timely manner.

“Real” projects do require a team effort wherein each member of the team brings complementary skills to solve the problem. You should adopt a similar approach while working on your project and presenting the solutions. Obviously, for effective learning, each student is responsible to understand the complete case, know the solutions, and be ready to explain the solution logic. You cannot depend on other team members to do your work. You should expect to learn a great deal from your experience of working with a team. The contribution and specific responsibilities of each member must be documented on the project report. Your success in your term project will be highly correlated with your progress throughout the semester.

**Homework Assignments:** Several homework assignments will be given. Some homework assignments will be team-based and some will require each student to work individually. Similar to the project, there will be a 10% reduction per day for late submissions effective 9:31 am of its deadline.

**Evaluations:** In order to facilitate an effective learning environment, you may be asked to anonymously evaluate the course content and my teaching style during the semester. In addition, since some assignments and project activities require team work, you will be asked to evaluate each other (i.e., peer evaluation) in your teams in order for me to give fair grades to each individual.

**Grading:** A:(90-100), B:(80-89), C:(70-79), D:(60-69), F:(below 59)

**Academic Dishonesty (Visit <http://www.utsa.edu/osja/> for more info):**

**“Unauthorized” Collaboration:** Although teamwork is encouraged for studying the course material and for homework assignments, each student is required to do his/her own original thinking during exams. Do not tempt your neighbor into cheating.

**Plagiarism:** Copying or using someone else’s work without giving credit (citation) intentionally or unintentionally is a violation of UTSA’s Student Code of Conduct.

**Academic dishonesty will be dealt with following the University regulations.**

**UTSA Disability Services** office (Phone: 210-458-4157) provides accommodations and equipment that enable students to participate in class activities. If you need assistance, please contact the office.

**UTSA Tomas Rivera Center** (Phone: 210-458-4694) provides learning assistance, academic coaching, and tutoring. If you need assistance, please contact the office.

Jan 7, 2010



**UNDERSTANDING OF COURSE POLICIES**  
**ME 4573/5573 Facilities Planning and Design**

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

UTSA E-Mail Address: .....@my.utsa.edu  
(Due to UTSA regulations, I have to use your UTSA e-mail address for correspondence)

Make up a 4-digit for your list-number: \_\_\_\_\_

I HAVE A COPY OF THE **COURSE SYLLABUS**.

\_\_\_\_\_ **Initials**

I HAVE BEEN INFORMED ABOUT THE COURSE POLICIES AS DEFINED IN THE SYLLABUS UNDER THE FOLLOWING HEADINGS:

- Lecture Notes**
- Exams**
- Exam-Scoring Scheme**
- Laboratory Applications**
- Homework**
- Evaluations**
- Attendance**
- Grading**
- Unauthorized Collaboration**
- Plagiarism**
- UTSA Disability Services**
- UTSA Tomas Rivera Center**

\_\_\_\_\_ **SIGN**

\_\_\_\_\_ **DATE**

**ANY COMMENTS**

**PLEASE RETURN TO Dr. SAYGIN AFTER YOU FILL OUT AND SIGN THE FORM**

**Note:** Evaluation survey results have been removed from this online portfolio to protect student confidentiality.

To Whom It May Concern:

RE: Dr. C. Saygin's teaching style and effectiveness

I am very glad and privileged to write this letter of support for Dr.Saygin

The course "Facilities Planning" conducted by Dr.Saygin in spring semester 2010 is one of the best courses that I have ever taken.

Dr.Saygin adopted interactive teaching methods with the help of effective multimedia, which made the course interesting and easy to understand for everybody. I don't even remember anybody missed a class.

Dr.Saygin related the course material with industrial activities a lot, which made it easier for students to pick up what they need to do when they start to work.

Another thing I need to mention is Dr.Saygin's grading style, he intuitively invented a numbering system, which required each student to provide a unique 4-digit number and he put each student's grade in a spread sheet matched to the number. In this case, you can see where you are in the class without compromising privacy. Also, Dr.Saygin usually finished grading the same day, which compared to other professors' weeklong waiting time is very sweet for students.

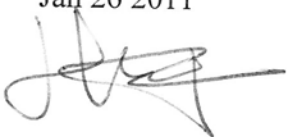
Dr.Saygin encouraged students to use top-notch software to finish the course project, he even bought Delmia software for students to try out and finish the project. I think he was doing his best to help students to learn as much as they could, and that knowledge they gained is useful for their future career either in academia or in industry.

Overall, Dr.Saygin is one of my favorite professors in my life and I am happy to know that he was nominated for President's Award for Teaching Excellence. I think his efforts and the effective teaching results well deserve the recognition and the honor.

Regards!

Yue Huang

Jan 26 2011



Date: February 1, 2011

To: To Whom It May Concern

From: Stephanie Brossman

Subject: Dr. C. Saygin's teaching style and effectiveness

I am writing this letter of recommendation in support of Dr. C. Saygin's nomination for President's Award for Teaching Excellence. His dedication and professionalism in ensuring the advancement of Undergraduate students puts him at the very top of my nomination list.

I have had the honor of taking three classes by Dr. Saygin which included an independent study. After taking several classes with him he has demonstrated that he is a gifted teacher. He is a highly dedicated selfless professional with the gift of being able to make complex engineering subjects understandable. In each class he knows how to motivate and challenge each student to strive for excellence not only with education but as an engineering professional. He is an approachable teacher who enjoys sharing his extensive knowledge and time with the students to ensure they understand the subject.

Dr. Saygin has played a major role in helping me in understanding my career choices in manufacturing. He has motivated me to strive for and achieve exceptional standards in engineering. Each class he has provided me with outstanding mentorship and encouragement to meet challenges that I had never before thought possible.

In closing, I enthusiastically recommend that Dr. C. Saygin be selected as a recipient of the President's Award for Teaching Excellence. I consider him a perfect model for a teacher in the school of engineering at the University of Texas at San Antonio.

Sincerely,

Stephanie Marie Brossman

A handwritten signature in cursive script that reads "Stephanie Marie Brossman".