

IE 5310 Summer 2017
MWTR 10:30AM-12:30PM, Room 311, Woolf Hall

Instructor: Dr. K.J. Rogers, P.E. Phone: (Woolf Hall) 817-272-2495
Office: 420F, Woolf Hall Email: jrogers@uta.edu Website: <http://ie.uta.edu/>
Office Hours: MW before and after class (other times by appointment as requested)
Required Text: Factory Physics. Wallace Hopp and Mark Spearman, Waveland Press, Inc. 3rd ed. reissued 2011.

Course Description: 5310. PRODUCTION SYSTEMS DESIGN (3-0). Methods for the design and analysis of manufacturing and logistics systems. Emphasis is placed on reducing cycle time, increasing throughput, lowering variation, and improving both quality and customer responsiveness through modeling techniques. Prerequisites: IE 5317 or equivalent, IE 5301 or concurrent and IE 5329 or concurrent or equivalent.

Course Learning Goals/Objectives: This course is designed for the student already knowledgeable of basic queuing theory, inventory control, and probability models. By the end of the course, the student will be able to analyze and evaluate the underlying behavior of manufacturing systems using a systematic approach.

Tentative Lecture Schedule (Course Content):

- Philosophy of Factory Physics, Modeling & Basic Manufacturing Principles
- Manufacturing Systems in America
- JIT and Lessons From History...
- Factory Objectives, Measures, & Controls
- The Basics of Variability & Its Corrupting Influence
- Push & Pull Production Systems, "Lean" Manufacturing
- People – the Human Element
- Principles in Practice: TQM, CONWIP, Supply Chain and Capacity Issues, etc.
- Synthesis – “Putting It All Together”

General Policies/Guidelines:

- ♦ If you require an accommodation based on disability, I would like to meet with you in the privacy of my office, during the first week of the semester, to make sure you are appropriately accommodated.
- ♦ **Exams will be taken on-line through Blackboard and you will need to bring your laptop to class for exams with the lockdown browser installed.** If you miss a test with an approved excuse (e.g. from a doctor stating you are too ill to sit for the test), you may take a comprehensive final as a makeup.
- ♦ **Course Evaluation & Final Grade:** Grades are based on performance. No curves planned.
 - ♦ Course grade will be comprised of performance on exams.

Midterm Exam	50%
Final Exam	50%
 - ♦ Performance standard: $D \geq 60\%$, $C \geq 70\%$, $B \geq 80\%$, $A \geq 90\%$

Key Dates:

06/20	Midterm Exam
07/10	Final Exam (10:30AM – 12:30PM)

Copyright © 2017 K.J. Rogers as to this syllabus and all lectures. Students are prohibited from selling (or being paid for taking) notes during this course to or by any person or commercial firm without the express written permission of the professor teaching this course.

Expectations for Out-of-Class Study: Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional 12 hours per week of their own time in course-related activities, including reading required materials, completing assignments, preparing for exams, etc.

Grade Grievances: Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current University Catalog.

<http://catalog.uta.edu/academicregulations/grades/#undergraduatetext>

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/aao/fao/>).

Disability Accommodations: UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including *The Americans with Disabilities Act (ADA)*, *The Americans with Disabilities Amendments Act (ADAAA)*, and *Section 504 of the Rehabilitation Act*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a **letter certified** by the Office for Students with Disabilities (OSD). Only those students who have officially documented a need for an accommodation will have their request honored. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting: **The Office for Students with Disabilities, (OSD)** www.uta.edu/disability or calling 817-272-3364. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability.

Counseling and Psychological Services, (CAPS) www.uta.edu/caps/ or calling 817-272-3671 is also available to all students to help increase their understanding of personal issues, address mental and behavioral health problems and make positive changes in their lives.

Non-Discrimination Policy: *The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos.*

Title IX Policy: The University of Texas at Arlington ("University") is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. *For information regarding Title IX, visit www.uta.edu/titleIX or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or jmhood@uta.edu.*

Academic Integrity: Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University. Additional information is available at <https://www.uta.edu/conduct/>.

Campus Carry: Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit <http://www.uta.edu/news/info/campus-carry/>

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as "lecture," "seminar," or "laboratory" shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University

College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

The English Writing Center (411LIBR): Hours are 9 am to 8 pm Mondays-Thursdays, 9 am to 3 pm Fridays and Noon to 5 pm Saturdays and Sundays. Walk In **Quick Hits** sessions during all open hours Mon-Thurs. Register and make appointments online at <http://uta.mywconline.com>. Classroom Visits, Workshops, and advanced services for graduate students and faculty are also available. Please see www.uta.edu/owl for detailed information.

Librarian to Contact: Martin Wallace martin.wallace@uta.edu **Subject guide:** <http://libguides.uta.edu/IMSE>

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. **All students are assigned a MavMail account and are responsible for checking the inbox regularly.** There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

Distance Education Policies: The IMSE Dept. offers most graduate IE courses on-line through streaming-video and Blackboard. Log on using your netID and password at <http://elearn.uta.edu> for access to class notes and assignments. A distance student is defined as a student enrolled in the distance section (typically "002" or "003") of an IE course. Please visit the IMSE website http://www.uta.edu/ie/distance_education_policy.html for details. Pay special attention to Policy #2: **Distance students are required to communicate with the faculty before the second class period.** This "first contact" helps insure that the distance student is not left behind at the beginning of the semester. **I look forward to hearing from all distance students via email soon.**

Course Schedule

The following table provides a general description of subjects & an approximate timetable. As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course. – K.J. Rogers

Week 1	M	06/05	Ch0 and Ch1 Mfg in America + Brief review from IE5329 Ch4, Ch5
	T	06/06	Ch1 HW, Ch4 HW, 5 HW
	W	06/07	Ch6 Objectives, Measures, & Controls
	R	06/08	Ch7 Basic Factory Dynamics
Week 2	M	06/12	Ch6 & 7 HW (Play chip & die game with HW #6-1)
	T	06/13	Ch8 Variability Basics
	W	06/14	Ch9 The Corrupting Influence of Variability
	R	06/15	Ch8 HW + Ch9 HW + Intuition Example
Week 3	M	06/19	Q&A – Sample exam just to be sure that you understand how to use the technology required for the Tuesday exam. Bring your laptop with the lockdown browser installed.
	T	06/20	Midterm Exam
	W	06/21	Ch10 Push and Pull Production Systems
	R	06/22	Ch10 HW
Week 4	M	06/26	"Lean 101 Basics"
	T	06/27	Ch11 The Human Element + Ch12
	W	06/28	Ch11 HW + Ch12 HW
	R	06/29	Ch17 Supply Chain Mgt & Ch18 Capacity Mgt
Week 5	M	07/03	No class - catch up (IE 5333 work on projects)
	T	07/04	Independence Day Holiday – No class
	W	07/05	Ch17, 18 HW + discuss Appendix 18A
	R	07/06	Ch19 Synthesis – Putting It All Together + Lego game Mandatory attendance
	M	07/10	Final exam [10:30AM-12:30PM]

Emergency Phone Numbers: In case of an on-campus emergency, call UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911.