

**IE 5310 Summer 2016**  
**MWTR 10:30AM-12:30PM, Room 402, 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. 3<sup>rd</sup> 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:**

06/21	Midterm Exam
07/07	Final Exam (10:30AM – 12:30PM)

Copyright © 2016 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://wwwb.uta.edu/aao/fao/>).

**Americans with Disabilities Act:** The University of Texas at 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)*. 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 that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability) or by calling the Office for Students with Disabilities at (817) 272-3364.

**Title IX:** *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](http://uta.edu/eos). For information regarding Title IX, visit [www.uta.edu/titleIX](http://www.uta.edu/titleIX).*

**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.

**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](mailto:resources@uta.edu), or view the information at [www.uta.edu/resources](http://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](http://www.uta.edu/owl) for detailed information.

**Librarian to Contact:** Martin Wallace [martin.wallace@uta.edu](mailto: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 Industrial & Manufacturing Systems Engineering Department offers most graduate IE courses on-line through streaming-video and Blackboard. This allows graduate students in the IE Program who are enrolled off-campus or part-time to access their classes at their convenience. 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/current-students/distance-learning.php#distance\\_policy](http://www.uta.edu/ie/current-students/distance-learning.php#distance_policy) 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. Recall page 1 of this syllabus: 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	06/06	Ch0 and Ch1 Mfg in America + Review from IE5329 Ch4, Ch5
	T	06/07	Ch1 HW, Ch4 HW, 5 HW
	W	06/08	Ch6 Objectives, Measures, & Controls
	R	06/09	Ch7 Basic Factory Dynamics
Week 2	M	06/13	Ch6 &7 HW (Play chip & die game with HW#6-1)
	T	06/14	Ch8 Variability Basics
	W	06/15	Ch9 The Corrupting Influence of Variability
	R	06/16	Ch8 HW + Ch9 HW + Intuition Example
Week 3	M	06/20	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	06/21	<b>Midterm Exam</b>
	W	06/22	Review Exam & Ch10 Push and Pull Production Systems
	R	06/23	Ch10 HW
Week 4	M	06/27	No class - catch up (IE 5333 work on projects)
	T	06/28	Ch11 The Human Element + Ch12
	W	06/29	Ch11 HW + Ch12 HW
	R	07/01	Ch17 Supply Chain Mgt & Ch18 Capacity Mgt
Week 5	M	07/04	Independence Day Holiday – No class
	T	07/05	Ch17, 18 HW + discuss Appendix 18A
	W	07/06	Ch19 Synthesis – Putting It All Together + Lego game <b>Mandatory attendance</b>
	R	07/07	<b>Final exam</b> [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.