

IE 5334-001 Spring 2017
TR 11:00AM – 12:20PM Room 203 Nedderman Hall

Instructor: Dr. K.J. Rogers, P.E. Phone: (Woolf Hall) 817-272-2495
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Office Hours: TR before and after class (other times by appointment as requested)

Required Texts: World Class Warehousing and Material Handling, 2nd ed. by Frazelle. McGraw-Hill, 2016
Warehouse & Distribution Science - version 0.97 by John J. Bartholdi, III and Steven T. Hackman, August, 2016.
Reference: Facilities Planning. Tompkins, White, et.al. John Wiley, 4th edition, 2010.

Course Description: 5334. LOGISTICS DISTRIBUTION SYSTEMS DESIGN (3-0). The design and analysis of distribution systems of people, processes and technology. The focus is on distribution, warehousing and material handling. Topics include the role of the warehouse in the extended enterprise, warehouse planning, process design, layout, equipment selection, workforce and workplace issues, and financial performance measures. Prerequisites: IE 5317 or equivalent, IE 5301 or concurrent, and IE 5329 or concurrent, or equivalent.

Course Learning Outcomes: 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 logistics warehouse/distribution systems using a systematic approach.

Tentative Course Outline / Specific Areas of Study Planned:

- Introduction to Logistics & Supply Chain Design Issues / Why Have a Warehouse?
- Distribution Center Material Handling Systems Master Planning and Layout Design and Analysis
- Warehouse/Distribution Center Activity Profiling
- Warehouse Management Systems
- Warehouse Operations Innovation Including Workforce Issues
- Performance Metrics, Benchmarking, Demand Chain Integration, etc.

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.
- ◆ Part of the course grade will be based on a term project (with oral presentation) in a relevant area of mutual interest to instructor and student. We will explore specific topics early in the semester to allow sufficient time for proper research and project preparation.
- ◆ 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, homework, quizzes, and projects.

Exams	80%
Project	20%
 - ◆ Performance standard: D ≥ 60%, C ≥ 70%, B ≥ 80%, A ≥ 90%

Key Dates:

02/28	Project Topic Due (title and 1 paragraph abstract due at beginning of class)
03/02	Midterm Exam
03/13-03/18	<i>Spring Vacation</i>
04/27	Projects Due (written reports & group presentation files due at the beginning of class)
05/09	Final Exam Note Time! [11:00AM-12:30PM]

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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" is important and I look forward to hearing from all distance students via email soon.***

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 9 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.

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>.

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>.

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

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>

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	Dates	Subject, Key Dates &/or Deliverables for Project
01	01/17-19	Ch1 Frazelle Introduction & Bartholdi Ch1,2,3 Rationale, Material Flow & Basic Operations
02	01/24-26	Ch2 Frazelle Activity Profiling & Bartholdi Ch14
03	01/31-02/02	Ch3 Frazelle Warehouse Performance Cost & Value Measures + Bartholdi Ch15
04	02/07-09	Ch4 Receiving and Putaway Principles + Ch5 Pallet Storage/Retrieval Systems & Bartholdi Ch5 & Ch 13 Crossdocking
05	02/14-16	Ch6 Case Picking Systems + Ch7 Broken Case Picking Systems & Bartholdi Ch12
06	02/21-23	National E-Week – Engineering Career Fair 02/21+ Work together in teams on project
07	02/28	Project Topic Due (title and 1 paragraph abstract + copy of signed team contract due at beginning of class)
07	03/02	Midterm Exam
08	03/07-09	Review Midterm Exam results+ Work together in teams on project
08	03/09	Ch8 Order Picking & Shipping + Bartholdi Ch 9,10,11 & Ref Appendix C
09	03/14-16	<i>Spring Vacation</i>
10	03/21	Ethics video & class discussion
10	03/23	Ethics write-up due at 11:00am + Work together in teams on project
11	03/28-30	Ch9 Layout Optimization + Bartholdi Ch 6,7,8 & Ref Appendix B + Facilities Planning text Ch7 (Warehouse Operations)
12	04/04-06	Ch10 Communications Systems + Bartholdi Ch4 (WMS) + Bartholdi Ch16
13	04/11-13	Bartholdi Ch16 Global Warehousing
14	04/18-20	Software tools demonstration (hands-on if license available)
15	04/25	Work together in teams on project
15	04/27	Projects due & Begin oral presentations
16	05/02	Presentations continued
16	05/04	Presentations continued + Q&A for final Exam
Final Exam	05/09	Final Exam Note Time! [11:00AM-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