

Spring 2024

IE 355-102: Human Factors in IE

Prakash Kothari

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New Jersey Institute of Technology
Department of Mechanical and Industrial Engineering

IE 355-102 Human Factors in Industrial Engineering, Spring 2024

Class Schedule: Thursday 6:00 – 9:00 pm -- Location: Central King Building 303

Instructor: Prakash Kothari, CIH, CSP, SMS, MS-OSHE

(973) 602-7172 pak24@njit.edu Office hours: 30 min after each class TBD

| Lecture | Date | Topic | Readings |
|---------|--------|--|---|
| 1 | Jan 18 | Introduction, History, & Systems | Ch. 1 Ch. 3: pp. 54-58 & 65-68 |
| 2 | Jan 25 | Human Information Processing Assignment: Quiz 1 | Ch. 4 |
| 3 | Feb 01 | Methods Assignment: Quiz 2 | Ch. 2 Ch. 3: Box 3.1 pp. 69-70 |
| 4 | Feb 08 | Visual & Auditory Perception Assignment: Quiz 3 | Ch. 5 Ch. 7 |
| 5 | Feb 15 | Memory, Attention, & Mental Workload Assignment: Quiz 4 | Ch. 9 Ch. 10 |
| 6 | Feb 22 | Decision Making Assignment: Quiz 5 | Ch. 11 Ch. 12: pp. 327-328 Ch. 12: Box 12.1 pp. 331-333 |
| | Mar 07 | Midterm Exam | |
| 7 | Mar 21 | Static, Dynamic, & Auditory Displays Assignment: Quiz 6 | Ch. 8 |
| 8 | Mar 28 | Controls & Tracking Assignment: Quiz 7 | Ch. 15 Ch. 16: Box 16.1 pp. 443-444 |
| 9 | Apr 4 | Compatibility Assignment: Quiz 8 | Ch. 13 |
| 10 | Apr 11 | Cognitive & Motor Skills Assignment: Quiz 9 | Ch. 14 Ch. 12: pp. 316-327 |
| 11 | Apr 18 | Hand Tools, RSI, & Anthropometry Assignment: Quiz 10 | Ch. 16 |
| 12 | Apr 25 | Human Error, Accidents, & Warnings Assignment: Prepare your presentations | Ch. 3 Ch. 19: pp. 549-551 |
| | May 02 | Project Presentations | |
| | May 09 | Project Papers Due | |
| | | Final Exam (Grades posted on May 10) | |

Textbook: Robert W. Proctor & Trisha Van Zandt (2017) *Human Factors in Simple and Complex Systems*, Third Edition. CRC Press ISBN 978-1482229561

- All required readings are in the textbook
- Yes, you need a copy of the textbook
- The text can be purchased or rented, also can be purchased or rented as a Kindle e-book

Evaluation:

- Midterm Exam – 25%
 - Lectures and reading up to exam day
 - Closed book and closed notes, in-class exam
 - Multiple choice and/or short written answer questions
 - No make-ups
- Weekly quizzes – in total: 25%
 - All quizzes are taken in class, No make-ups unless excused absence
- Final Exam – 25%
 - Second half of course
 - Closed book and closed notes, during final exam period
 - Multiple choice and/or short written answer questions
- Attendance and participation - 10%
- Project – 15%
 - Group project: groups of approximately 5 students
 - Topics reviewed via 1-paragraph written proposal (Print and Moodle/email)
 - Proposals due after midterm (proposals are not graded)
 - Presentations on last day of regular class (one per group)
 - Each group must also submit a single combined paper
 - Grade is combination of your paper and group presentation

I expect all students to follow the NJIT Student Honor Code (i.e. no cheating on exams); this is enforced.

Class Website: Canvas will be used for this class: <http://canvas.njit.edu/>

Canvas will be used for content distribution, distribution of homework, and general announcements. I do *not* plan to make much use of Moodle's interactive and chat features. Also I do not use Canvas for your semester grade, only for quizzes; *ignore* Canvas's overall grade reports.

Lecture slides will be available on Canvas in PDF format *on the morning of each lecture day*. Class announcements and study guides will also be made available on Canvas and through email.

“Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at:

<http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>.

Please note that it is my professional obligation and responsibility to report any academic misconduct to

*the Dean of Students Office. **Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university.** If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu*

Spring 2024 Academic Calendar

| | | | |
|---------|----|----------|--|
| January | 15 | Monday | Martin Luther King, Jr. Day |
| January | 16 | Tuesday | First Day of Classes |
| January | 20 | Saturday | Saturday Classes Begin |
| January | 22 | Monday | Last Day to Add/Drop a Class |
| January | 22 | Monday | Last Day for 100% Refund, Full or Partial Withdrawal |
| January | 23 | Tuesday | W Grades Posted for Course Withdrawals |
| January | 29 | Monday | Last Day for 90% Refund, Full or Partial Withdrawal, No Refund |

for Partial Withdrawal after this date

| | | | |
|----------|-----------|---|--|
| February | 12 | Monday | Last Day for 50% Refund, Full Withdrawal |
| March 4 | Monday | | Last Day for 25% Refund, Full Withdrawal |
| March 10 | Sunday | Spring Recess Begins - No Classes Scheduled - University Open | |
| March 16 | Saturday | Spring Recess Ends | |
| March 29 | Friday | Good Friday - No Classes Scheduled - University Closed | |
| March 31 | Sunday | Easter Sunday - No Classes Scheduled - University Closed | |
| April 1 | Monday | Last Day to Withdraw | |
| April 30 | Tuesday | Friday Classes Meet | |
| April 30 | Tuesday | Last Day of Classes | |
| May 1 | Wednesday | Reading Day 1 | |
| May 2 | Thursday | Reading Day 2 | |
| May 3 | Friday | Final Exams Begin | |
| May 9 | Thursday | Final Exams End | |
| May 11 | Saturday | Final Grades Due | |