

IE 462
Probabilistic Reliability and Maintenance
Spring 2022

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Outline

Probability review (1 week)
Basics of reliability (1 week)
Lifetime distributions (2 week)
Systems with several components (2 weeks)
Cost considerations, redundancy, warranty (2 weeks)
Network reliability (2 week)
Markov decision processes (2 weeks)
Replacement and maintenance problems of aging equipment (2 weeks)

References

Barlow, R. E. and F. Prochan, 1965, Mathematical Theory of Reliability
Ushakov, I., 2012, Probabilistic Reliability Models

Grading

Homework: 15%
Midterm exam: 25%
Term project: 15%
Final exam: 35%
Classroom participation (paper reviews and participation): 10%