# **Assignment 01**

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IE 5351: Introduction to Systems Engineering

Dr. Susan Ferreira

Due Date: 08/30/2022

## Book

In this introductory chapter, we first review the science behind the two Association for the Advancement of Artificial Intelligence (AAAI) Symposia that we held in 2020 ("Al welcomes Systems Engineering. Towards the science of inter-dependence for autonomous human-machine teams") (F. Lawless, 2021).

## Journal paper

All science and engineering involve abstraction of the complexity of the world into approaches and models that use simplifying assumptions, which allow generalization from one complex situation to another (Gilbertson, Tanju, & Eveleigh, 2017).

**Conference paper**

Aggressive dynamic markets, products today are becoming more complex as they manage rapid technology advancements, shorter system life cycles, organizational changes, and mounting regulatory pressures (D. Ward, 2018).

## Web page

Systems engineering is an interdisciplinary approach and means to enable the full life cycle of successful product, service, and enterprise systems (Zipursky, 2022).

## References

F. Lawless, W. (2021). System Engineering and Artifical Intelligence. New Jersey: Springer.

R. Gilbertson, B. Tanju and T. J. Eveleigh, "A complexity-based heuristic decision analysis model to recommend systems engineering domain," in IEEE Engineering Management Review, vol. 45, no. 3, pp. 64-81, Third Quarter 2017, <https://doi.org/10.1109/EMR.2017.2734358>

D. Ward, M. Rossi, B. P. Sullivan and H. V. Pichika, "The Metamorphosis of Systems Engineering through the evolution of today’s standards," 2018 IEEE International Systems Engineering Symposium (ISSE), 2018, pp. 1-8, <https://doi.org/10.1109/SysEng.2018.8544426>

Zipursky, B. (2022). Guide to the Systems Engineering Body of Knowledge (SEBoK). New York: SEBoK. Retrieved from <https://www.sebokwiki.org/>.