

## Applied Sustainability - SUS 4000 Syllabus

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**Time:** Wed., 6:00-8:20 PM

**Classroom:** Acad. Quad, Bldg 402, Rm 111

**Instructor:** Dr. K. Lindeman, Shepard Bldg. Rm 103 **Email:** [lindeman@fit.edu](mailto:lindeman@fit.edu)

**Office Hours:** Tue: 1400-1600, Wed: 1400-1700, Thu: 1400-1630 or by appointment.

**Prerequisites:** SUS 1500, SUS 3999

**Course Description:** This 3-credit course is a project-focused class for advanced undergraduates seeking to apply sustainability practices within their specific areas of interest. This is the capstone course for the undergraduate Major and Minor Programs in Sustainability. Students from any college are eligible - whether minoring in Sustainability or not.

**Projects:** Readings, lectures, and breakout groups on science, engineering, and business tools for project management assist building of specific projects. The catalog description states: *Requires the design, production and presentation of an individual or group project on improving the sustainable operation of some aspect of the Florida Tech main campus, Florida Tech satellite location, or another approved location.* In certain circumstances, projects can be report-based: e.g., a detailed triple bottom line accounting analyses or a greenhouse gas inventory of a local organization or business.

**Textbook and Reference Materials:** As a project course on student-specific interests from all five colleges, we use diverse readings that include technical journal articles, and corporate, government, and NGO reports. Examples include:

- Maltzman, R. and Shirley, D., 2010. *Green Project Management*. CRC Press.
- Clark, W.W. ed., 2017. *Sustainable Cities and Communities Design Handbook: Green Engineering, Architecture, and Technology*. Butterworth-Heinemann.
- Peterson's. 2018. *Green Jobs for a New Economy: The Career Guide*.
- Dykstra, A., 2016. *Green Construction*. Kirshner Books
- Gevorkian, P., 2012. *Large-scale Solar Power Systems: Construction and Economics*. Cambridge University Press.
- Sheffi, Y., 2018. *Balancing Green: When to Embrace Sustainability in a Business (and When Not To)*. MIT Press Books,
- USGBC. 2009. *LEED Reference Guide for Green Building Design and Construction*.
- Boxwell, M. 2010. *Solar Electricity Handbook, 3rd Ed: Designing and Installing Photovoltaic Solar Electric Systems*.

Websites specific to sustainability projects exist for many fields and these will also assist student projects.

Selected references will be posted on the class website and/or made available on reserve in the Evans Library. Another useful resource is the **FIT Sustainability Research Guide** at: <http://libguides.lib.fit.edu/sustainability> This resource has pdfs and web links for important sustainability resources - collated by topic.

**Student Learning Outcomes:** By course completion, students should have the ability to:

- explain project management in theory and practice specific to sustainability
- detail applications of current sustainability principles in one's field
- quantify sustainability project practices utilizing measureable indicators
- explain and critically review incentive categories from major certification programs
- analyze sustainability projects from multi-disciplinary perspectives
- complete design and final production of an applied sustainability project

**Grading:**

30% Homework and Project Assignments

30% Midterm and Final

30% Final Project Evaluation

10% Classroom Participation & Attendance\*

\* Since there are only 16 class meetings, attendance is very important and will significantly impact the final grade if problematic. *Contact the instructor early if attendance is an issue.*

**Class Schedule – Applied Sustainability**

\* = Northrop Grumman Showcase preparation. NGS posters mandatory for SUS majors, optional for SUS minors (approx. 2/3rds of students do NGS projects).

Wk 1 Sustainability Concepts; Systems/Scales; Learning Organizations; Project Management

Wk 2 Project Management; Scoping; BMPs and Adaptive Management; PMI \*

Wk 3 Project Scoping & Ideation; University Sustainability PM; NGO PM\*

Wk 4 Project Breakouts; Breakout groups; Business PM; Government PM \*

Wk 5 Demand-Side Sustainability Incentives; Certification Processes; Breakout groups \*

Wk 6 Off-Campus Sustainability: Business, Community, Government; Breakout groups \*

Wk 7 Class Project Design Forum – Within Projects; Team breakout groups \*

Wk 8 Midterm Assessment; Breakout groups \*

Wk 9 Spring Break \*

Wk 10 NGS due; Indicator Evaluations; Breakout groups \*

Wk 11 Project Design Updates; Real-world Adaptive Management; Breakout groups \*

Wk 12 Communicating Sust. Advances; Merging Education & Inspiration; Breakout groups \*

Wk 13 Class Project Design Updates; Breakout groups \*

Wk 14 Project Evals and Real-world Adaptive Management; Final Project Summaries

Wk 15 Systems Principles and Project Re-evaluations

Wk 16 Final Project Summaries

Wk 17 Finals Week Project turn-in

This schedule may change according to adaptive course management during the semester.