<table>
<thead>
<tr>
<th>Class session number</th>
<th>Topics/Activities</th>
<th>Learning Objectives</th>
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</table>
| 1                    | Introduction to course            | • List the major course objectives  
|                      |                                   | • Describe on a rudimentary level the major course work to be completed during the semester |
| 2                    | Analysis vs Decision Making       | • Define the term Analysis as it relates to sustainability  
|                      |                                   | • Define the term Decision as it relates to sustainability  
|                      |                                   | • Explain the reason why the decision should come after analysis                   |
| 3                    | Measurement                       | • Measure instantaneous power use with a Kill-o-watt  
|                      |                                   | • Measure total energy use with a Kill-o-watt  
|                      |                                   | • Compute total energy used from duration of service and power draw  
|                      |                                   | • Discuss the importance of the "Power Factor"  
|                      |                                   | • Interpret measurements made with a Kill-o-watt                                   |
| 4                    | Impact Categories                | • Describe the necessary first step to making a decision – enumerate the guiding principles or rules  
|                      |                                   | • List and explain important objectives to consider to make decisions that result in greater sustainability  
|                      |                                   | • Explain the general characteristics of processes that lead to decisions          |
| 5                    | Carbon Footprint Calculation      | • Define what is meant by “carbon foot print”  
|                      |                                   | • List processes which contribute to carbon foot prints  
|                      |                                   | • Recognize that different fossil fuels have different CO2 emission rates  
|                      |                                   | • Recognize that fossil fuels have different “heating values”  
|                      |                                   | • Calculate a carbon footprint of a process which burns fossil fuels  
|                      |                                   | • Describe other (non-fossil fuel combustion) components to carbon footprints  
|                      |                                   | • Examples of how results are used                                                |
| 6                    | Introduction to Campus Carbon Calculator | • Explain the basic layout of the calculator  
|                      |                                   | • Describe the use of the calculator  
|                      |                                   | • Understand selected entries in the calculator                                    |
| 7                    | Tour of a Campus Building         | • Recognize devices in the Commons that use the major amount of electricity in the building  
|                      |                                   | • Recognize the devices in the Commons that use Natural Gas  
|                      |                                   | • Recognize devices in the Commons that use Refrigerant  
|                      |                                   | • Recognize the system that handles wastewater in the Commons                    |
| 8                    | CCC: Greenhouse gas Accounting Concepts | • Know which portion of the CCC you are responsible for  
|                      |                                   | • Define the terms: organizational boundary, operational boundary, temporal boundary, Offsets, Scopes 1, 2 and 3 emissions |
| 9                    | CCC: Inventory Module - I         | • Describe best practices in collecting data for the CCC  
|                      |                                   | • Understand the requirements of the CCC project                                  |
| 10                   | RWU CF Work time                 |                                                                                     |
| 11                   | CCC: Summary Module              | • Define CO2 equivalent emission  
|                      |                                   | • Describe how the CCC presents summarizes information  
|                      |                                   | • Extract plots and summary data from the CCC  
|                      |                                   | • Discuss what "normalized" results are                                           |
| 12 | CCC: Projection Module | • Describe the types of projection available in the CCC  
• Use linear projection to predict a future value of a quantity  
• Explain in a general sense how the CCC carries out linear projection |
| 13 | CCC: Solutions Module | TBD |
| 14 | Review for Exam I | |
| 15 | Exam I | |
| 16 | Guest Lecture: how we make decisions | • Define Automatic cognition  
• Define Controlled cognition  
• Describe the process used when making decisions  
• Discuss the idea of “optimal number of choices” |
| 18 | Engineering Decisions | • Describe the terms Technical Analysis, Cost-Effectiveness Analysis  
• Perform a simple Technical Analysis |
| 19 | Cost/Benefit Analysis | • Describe the term Cost/Benefit Analysis  
• Discuss the scope and limitations of B/C analysis  
• Become familiar with the terms annual cost, present worth and sunk costs |
| 20 | LCA - I | • Define LCA  
• Discuss the differences between three different types of LCA: Comprehensive, Streamlined, and EIO-LCA  
• Describe the various standards that exist for completing LCA’s  
• Understand the requirements of the LCA Case Study Project. |
| 21 | Risk Assessment | • Recognize the modes of intake of chemicals into the body  
• Calculate the quantities such as CDI  
• Characterize risk from known CDI’s |
| 22 | Decision Trees | • Describe the conditions under which it is useful to use a Decision Tree  
• Read a decision Tree  
• Define and Calculate the expected value of a decision |
| 23 | AHP - I | • Define AHP  
• Recognize when it is useful to use AHP  
• Describe an example of when AHP was used to make a decision |
| 24 | AHP - II | • Describe in detail the AHP application to a case study (the one presented in class) |
| 25 | LCA - II | Recognize some of the steps on an LCA as portrayed in "Addicted to Plastic" |
| 26 | LCA - III | • Cite specific examples from "Addicted to Plastic" which describe aspects of Scope, LCI, Impact Assessment, and interpretation  
• Understand the utility of a flow diagram in LCA  
• Draw a basic flow diagram for a process  
• Define functional unit in the context of LCA  
• Select or be aware of the complexities involved in selecting a functional unit for an LCA  
• Define “LCA” Specificity  
• Define Scope  
• Recognize and critique the scope and goal phase in an LCA study |
| 27 | Review for Exam II | |
| 28 | Exam II | |
| 29 | LCA IV | • Define LCI  
• List and describe the key steps in the LCI phase of and LCA  
• Draw a general system diagram complete with inputs and outputs  
• Identify inputs and outputs  
• Recognize and critique the LCI phase in an LCA study |
|-----|--------|---------------------------------------------------------------|
| 30 | LCA V  | • Define Life Cycle Impact Assessment (LCIA)  
• List and describe steps used in the standard LCIA  
• Define and list several impact categories  
• Recognize and critique the LCIA phase in an LCA study |
| 31 | LCA VI | • Describe the steps in the interpretation phase of an LCA  
• Explain why the interpretation phase is required  
• List the steps in the standard method of interpretation  
• Define completeness, sensitivity, and consistency as they relate to LCA  
• Recognize and critique the Interpretation phase in an LCA study |
| 32 | Introduction to the EIS | TBD |
| 33 | Sakonnet Bridge Tour | TBD |
| 34 | Sakonnet Bridge EIS - I | TBD |
| 35 | Sakonnet Bridge EIS - II | TBD |
| 36-40 | Student presentations | TBD |