

Below is an outline of the “weekly” schedule of the course. There will be some adjustments to this based upon pace of the course, field activities and laboratories.

Detailed Course Schedule:

<u>Week</u>	<u>Topic</u>	<u>Assignment</u>
1/ January 30	Course Outline Distribution Journaling <i>Research Project Development</i> Field Safety Use of Excel Review of Past Research Projects <i>Choosing a topic for research</i> Journaling Maintenance and use of journal books for daily recording including: <ul style="list-style-type: none">- maintaining a daily log- conducting drawings- keeping information- descriptive entries- observational skills	Reading by Gibbons and Congdon TBD
2/ February 6	Topic: Water Continued use of Excel for data and graphing Organization of Data and Intro to Field Statistics (Excel) Field Data collection <i>Writing of a Journal Research Report*</i> Major areas of research Determining Questions Gathering of Sources Narrowing Questions Presentation Protocols: oral, posters, and written projects with students from the past sharing their experiences	Research Questions

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<u>Week</u>	<u>Topic</u>		<u>Assignments</u>
3/ February 13	Experimental Design Preparing a timeline and plan Introduction of Technology and Use of Data Loggers and Thermocouples Use and care of field meters (YSI, pH, etc...) Building of thermocouple connectors Work on Research Project		TBD
	<u>Research Evaluation #1 (technology based) Wed.</u>		
4/February 20	<u>Presentations start on February 20</u> Data Collection and Results Exercises on Organization of Data Sets Data Manipulation Use of Student T-test and alpha (P=0.05) Calibration of Field Instruments Including YSI, pH and Conductivity Work on Research Project		
5/ February 27	Data Analysis Continued Determine the use of the Null Hypothesis for prediction of research outcomes Determine the correct graph and correlate data tables with graph types Field Collection Activity for Simpson's Index <i>Use of ANOVA(Analysis of Variance)</i> Components of a Good Poster		Manipulation Excel Activity
	<u>Evaluation 2 (use of data and manipulation)</u>		
	<u>Journal Book Check One</u>		
6/ March 5	Topic: Soils Field Guide Roles Introduction of Team Project Team Project Design Evaluation of a Project Work on Research Project Poster <u>Possible Rutgers Field Station Visit</u>		Papers TBD Start Soils

Week Topic Assignments

7/ March 12 Soil Overview
 Soil Testing Activity
 Evaluation of Soils for Particle Size
 Use of Sieves and Dry Weight Comparisons

First Major Laboratory Write-up Due on March 13 on Water

Jersey Shore Science Fair on Saturday March 17, 2012 @ Stockton College

8/ March 19 Field Research: Design and Implementation Field
 Collection of Data for Field Project Write Up
 Use of Field Technology Readings

9/ March 26 GIS Overview
 Collection of Data for Field Project
 Synthesis of Data Field
 Maintenance of Field Equipment Activity
 Use of Biological Assessments for Water Quality
Field Prep for Lighthouse Center Project
Evaluation 3 on Field Techniques - Soils

10/April 2 Special Topics: Pine Barrens
 Experimental Design and Field Activities Readings TBD
 Overview of Pine Barrens
 Work on Electronic Field Guide Additions
 Possible Guest Speaker on Pine Barrens

School Closed on Friday April 6 through April 15 for Spring Break

11/ April 16 Special Topics: Research on Barnegat Bay
 Experimental Design and Field Activities Field Write-up
 Field Equipment
 Introduction to Terrapin Research Methods
 Boat Safety and Use
 (Possible activity aboard the R/V Sirenia depart
 at beginning of lunch)

***On April 18, we will work on the Freshman Research Expo (i.e., judges registration, set-up and logistics**

Week Topic Assignment

12/ April 23 Special Topics: Barnegat Bay Field Research
Sampling and Data Analysis
Class Project Testing (Equipment and Trapping) Readings as
Introduction to Terrapin Field Research Assigned

Evaluation 4 on Research Design and Statistics April 25

Possible Massachusetts Maritime Trip on April 27 – April 28, 2012

13/ April 30 Special Field Project and Field Work
Sampling Equipment and Use of Electronics Readings as
R/V Sirenia Sampling Work Assigned

Second Major Field Write-up on Soils Due on May 1, 2012

14/ May 7 Local Field Applications and Project Development
Barnegat Bay Ecology: Natural, Physical and Chemical
Determination of Barnegat Bay Seasonal Changes
Studying salt marsh effectiveness and areas of marsh

Distribution of Take Home Evaluation #5 (due in 14 days)

15/May 14 Development of Research Posters and Class Research
Posters (two or three posters for the class)
Field Data Collection TBD

Lighthouse Center Overnight and Collection

16/ May 21 Research Poster Development and Presentation
Work on Project and collection
Barnegat Bay Sampling (R/V Sirenia)

Take Home Evaluation #5 due May 24

17/ May 28 **Memorial Day School Closed**
Field Research Applications TBA TBD

18/ June 4

**Review for Final Evaluation and Presentations of Posters and PowerPoint for the Teams presented to Panel (TBA)
(Presentation for Parents, School Officials and Guest Scientists on Team Projects... at the Lighthouse Center for Natural Resource Education (TBD)**

19/June 11

Final Exam TBD