EHELD Summer Start 2012

First Year Students Curriculum

Course available at: http://open.umich.edu/education/engin/eheld/summer-start/.

English

Objectives: Specify Purpose
Question
Classify Main Ideas and Details
Locate Topic Sentences
State the Main Idea of a Sentence, Paragraph, or Passage
Infer the Main Idea using Patterns and Other Clues
Scan
Skim
Paraphrase
Summarize
Draw Conclusions
Identify Writing Patterns
Identify Author's tone
Increase Speed of Reading

Description: The focus of this course is to introduce and enhance academic reading skills for university-level students in Liberia. Students will employ various reading strategies to increase comprehension when reading academic texts. Students will paraphrase, summarize, and synthesize readings. Students will respond, both orally and in writing, to written academic texts. Student will also employ strategies to build their academic vocabulary. Students will have ample opportunity to speak and write. Grammar and pronunciation issues will be addressed as necessary.

Important concepts: As stated in the Objectives section above, with the addition of *plagiarism* and *collaboration.*

Lesson Titles and Objectives:

L1: Introduction To Course
Overview, Expectations, Introductions

L2: Collaborating, Learning Styles, and Pre-Reading Strategies
- Reading Title and Headings
- Activating Background Knowledge of Topic
- Looking at Pictures and other Graphics

L3: Pre-Reading Strategies Cont'd.
- Predicting Purpose
- Asking Questions
- Vocabulary Strategy: Guessing Meaning from Context.

L4: Pre-Reading Strategies Contd.
- Reading First Paragraph
- Reading First Sentence of Each Paragraph,
- Reading Last Paragraph
- Reading Section Headings
- Vocabulary Strategy: Synonyms

L5: Determining the Topic and Stated Main Idea
- Quiz on Pre-Reading and Vocabulary Strategies

L6: Looking for Information and Increasing Reading Speed
- Scanning
- Skimming
- Timed Reading
- Vocabulary Strategy: Restatement/Definition

L7: Monitoring Comprehension
- Asking Questions
- Looking for Answers

L8: Formulating Implied Main Ideas and Identifying Supporting Details
- Inferences
- Major and Minor Supporting Details
- Outlining

L9: Plagiarism, Summarizing, and Paraphrasing
- Definitions and Differences
- Quiz on Reading Strategies

L10: Authors' Writing Patterns
- List Pattern, Sequence Pattern, and Definition Pattern

L11: Authors' Writing Patterns cont'd.
- Cause-Effect Pattern, Comparison-Contrast Pattern
- Timed Reading

L12: Reading Critically
- Author's Purpose, Intended Audience, and Point of View/Bias

L13: Reading Critically Cont'd.
- Author's Tone and Intended Meaning

L14: Thinking Critically
- Definition
- Problems: Stereotypes, Either-Or, Ethnocentricity, Accepting Information on Authority

Quiz on Writing Patterns

L15: Thinking Critically Cont'd.
- Facts vs. Opinions
- Propaganda Devices
- Well-Supported Argument

L16: Thinking Critically Cont'd.
- Inferences (again)
- Drawing Conclusions

L17: Thinking Critically Cont'd.
- Evaluating an Author's Argument

L18: Review
- Summary
- Questions

L19: Final Exam

Applications Lab - Engineering

Objective:
The hands on lab will allow students to investigate the concepts learned during their lectures by applying them to real life design while developing practical skills in prototype construction. In this process the students will learn to use their creativity in solving problems that do not have step-by-step instructions but a simple objective.

A series of short simple labs will be conducted for students to obtain key skills when working on hands on design. Additionally, three main projects will be performed through out the term: a statics lab, a dynamics lab and an energy lab.

Learning Objectives:

- Learn proper approaches for design
- Obtain key best practices for hands on work and design including: appropriate safety when working with tools, measurements, estimation, project planning and design criteria
- Utilize power and hand tools to create prototypes
- Follow drawings to create prototypes
- Apply the concepts of forces and force balances
- Apply the concepts of projectile motion
- Introduce energy harnessing and possible uses

Expectations:

1. Students are expected to behave professionally during the sessions and place safety first
2. No misbehavior will be tolerated around the tools
3. Students will work on teams of 5 people
4. Each team will conduct the labs in a collaborative manner
5. Each individual in the team is expected to know what the lab requirements and skills are
6. and demonstrate that knowledge
7. Reports will be expected for some of the labs
8. The reports should be a team effort and should follow the formatting guidelines provided
9. in the sample report

Applications Lab - Agriculture

Objective:
The hands on lab will allow students to investigate the concepts learned during their Botany lectures by applying them to real life design while developing practical skills in prototype construction. In this process the students will learn to use their creativity in solving problems that do not have step-by-step instructions but a simple objective.

A series of short simple labs will be conducted for students to obtain key skills when working on hands on design. Additionally, three main projects will be performed through out the term: a statics lab, a dynamics lab and an energy lab.

Further, students will explore other components of agriculture beyond Botany. Students will carry laboratories exploring biogas, oil pressing, and water.

Expectations:

1. Students are expected to behave professionally during the sessions and place safety first
2. No misbehavior will be tolerated around the tools
3. Students will work on teams of 5 people
4. Each team will conduct the labs in a collaborative manner
5. Each individual in the team is expected to know what the lab requirements and skills are and demonstrate that knowledge
6. Reports will be expected for some of the labs
7. The reports should be a team effort and should follow the formatting guidelines provided in the sample report

Life Skills

Description:
In order to succeed in the engineering and agriculture profession, students must develop skills beyond the knowledge taught in engineering/agriculture courses. Furthermore, students must realize the importance of teamwork in their respective technical professions; developing a community amongst each other will not only help students succeed in their coursework, but further, will help the professions of agriculture and engineering work toward reaching their highest potential.

Learning Objectives:

1. Students will learn the value of creating a community amongst each other.
2. Students will develop skills that will allow them to succeed in academic and professional settings.
3. Students will learn about the different disciplines of their majors.
4. Students will learn how to set and achieve long-term goals.

Expectations:

- Students are required to respect each other.
- Teamwork and peer interaction/encouragement are expected.
- Students should participate in class discussion and exercises.
- Journals will be regularly assigned. Students must carry out journal exercises when assigned.
- Students will receive the book, *The Boy Who Harnessed the Wind,* at the beginning of class, and regular reading of the book is required since some class discussions will be based on the content of the book.

Week 1: Building a community
Students will learn the importance of building a community. Students will participate in team building exercises and will be encouraged to develop attitudes that will foster success amongst peers.

Week 2: Academic development
Students will work on developing skills to help them succeed within the classroom. Students will brainstorm various study skills. Further, students will learn how to talk with professors and about the various campus resources available at their university.

Week 3: Professional development
Students will learn how to create a resume and develop interviewing skills. Students will learn specifics about the disciplines in engineering and agriculture, and more importantly how engineering and agriculture overlap.

Week 4: Long-term goal setting
Students will develop long-term goals and explore methods of working toward those goals. Further, students will also learn how to improve intrapersonal relationships.

Computer Lab

Course Description: Students will follow the instructor on exercises to help them learn various computer programs. Students will be introduced to programs to help them improve their ability to use a mouse and keyboard. They will be introduced to OpenOffice programs that will allow them to communicate and present their ideas more efficiently and effectively. Then students will learn a drafting program to assist when developing engineering and agriculture designs. Finally, students will begin to learn the basics of programming and using the Internet

Learning Objective: To learn how to the use of computers and computer's ability to simplify tasks of importance to engineers and agriculturalists.

Important concepts: Computer, Internet, hardware, software, word processor, spreadsheet, network, typing, programming

Expectations

- Students are expected to show up on time. The instructors will not wait or help students catch up who show up late for computer labs.
- All students should keep up with their files and ensure they do not lose the data as the work will build on previous labs.
- Students are expected to ask for help during class from the instructor and the assistant. Do not ask from help from your fellow students, this slows down the whole class and disturbs others.
- Students should take advantage of help time after lectures.

Week 1 – Introduction to computers and office programs.

Students will learn the basics of the computers and the history. Further, students will practice with the mouse using MS Paint. Finally, students will be introduced to the basic office programs using OpenOffice.

Week 2 – Introduction to drafting and further practice with office programs.

Students will begin to learn Google Sketchup. Further students will practice typing and practice with the office programs.

Week 3 - Computer practice

Students will refine their computer skills and further practice using the office programs as well as Google Skethup.

Week 4 - Internet and introduction to programming.

The final week students will learn the basics of the internet and basic programming. Further, the final week will be devoted to helping the students write their final lab reports and develop their final presentations.

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