

INSTRUCTIONAL MODULE DESIGN

PREREQUISITES: PERMISSION OF INSTRUCTOR AND COMPLETION OF AT LEAST 10 PRIOR MODULES.

OUTLINE OF MODULE X1:

What you will learn about in this Module:

You will learn how to select example circuits and exercises to develop educational materials. You will also find out that the best way to learn things yourself is to teach them to others.

What you will build in the lab:

You will design, build, and test a circuit with the objective of providing a learning experience.

INTRODUCTION:

You will find that once you know a bit about electronics that you will be in an excellent position to teach things to others who are interested. In this module, you will first identify a teaching opportunity for electronics, then you will develop the instructional material to address that opportunity. Example opportunities include:

- Significant re-design or expansion of one of the existing modules for this course.
- Design a circuit & laboratory exercise for a different course on campus.
- Develop teaching materials for a specific instructional setting, such as teaching new members of your laboratory or workplace how to design & build an electronic system of general interest. For example, everyone who works with you may need to know something about building a pre-amplifier for a special transducer that interfaces with a data acquisition system that is in common use.
- Develop teaching materials for pre-college students interested in electronics.

READINGS FROM HOROWITZ AND HILL (H&H): *ART OF ELECTRONICS*

Depends on the specific content of this independent module.

ADDITIONAL READINGS & INTERNET RESEARCH:

Identify web-based instructional resources that are relevant for the instructional material that you wish to develop. Familiarize yourself with this material.

SELF QUIZ

- 1: How many individuals are likely to benefit from the instructional material that you are developing in this module?

- 2: How long do you estimate that it will take for them to complete the module?

- 3: Will they be able to complete the materials without supervision?

- 4: What materials, equipment, and supplies do you think will be necessary?

- 5: What would you estimate the cost would be for each individual who works through and completes these instructional materials?

- 6: How many individuals will your available resources support?

- 7: What additional resources can you leverage or bring to bear to provide this instructional opportunity?

- 8: Are there any safety issues you would need to consider?

PLEASE ANSWER THE ABOVE QUESTIONS AND E-MAIL TO THE INSTRUCTOR
“I have neither given nor received aid on this examination, nor have I concealed any violation of the Honor Code”

X _____

LABORATORY PROJECTS

Specific exercises are to be decided in consultation with the Instructor. Once you have discussed the exercises with the instructor, you are to do the following things:

Propose a Design Specification for your project.

Develop a list of required materials for your project, with an estimated budget.

Get approval from the Instructor.

FEEDBACK

Was this Module useful and informative?

Is there a topic that should get more or better coverage?

In what way can this Module be improved:

Content: _____

Depth of Coverage: _____

Style: _____

Any additional comments that will help us to improve this course:

If you prefer, you may e-mail comments directly to Bob Dennis: yoda@umich.edu