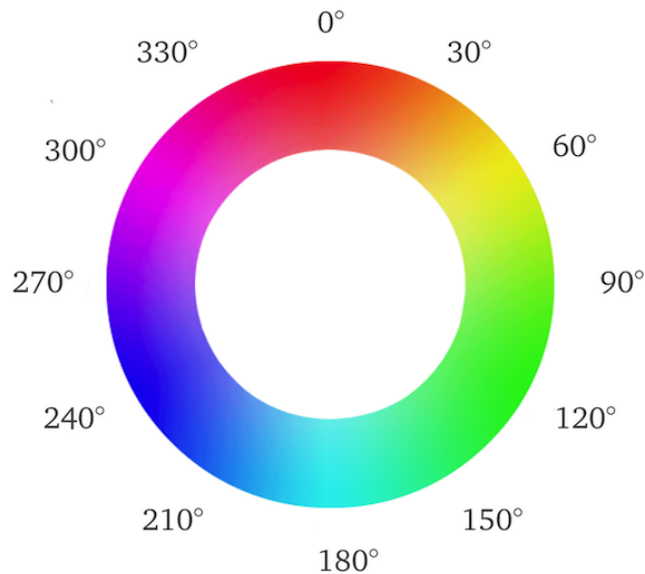


ENGR 3410: Miniproject 1

due September 22, 2025

In this miniproject, you will use the OSS CAD suite to design a digital circuit to drive the RGB LED on your iceBlinkPico board so that it cycles through the colors at 60° intervals around the hue, saturation, value (HSV) color wheel (shown below) once per second.



The HSV color wheel.

This miniproject is an *individual* one. You can discuss design approaches and help each other with learning SystemVerilog and how to use the OSS CAD suite, but each of you must complete all aspects of this assignment in order to learn how to use the tools. In the process, you should learn several aspects of the processes and software tools that you will be using later in the semester to design more complex digital circuits.

Requirements. Your design must meet the following requirements:

1. Your circuit must repeatedly drive the RGB LED on your iceBlinkPico board to cycle through the colors RED, YELLOW, GREEN, CYAN, BLUE, and MAGENTA in that order starting with RED once per second (i.e., the entire cycle repeats once per second).
2. Your circuit must be specified in one or more SystemVerilog source files.

Deliverables. By the start of class on September 22, you must submit the following items to the course Canvas site:

1. Copies of all of the source files specifying your circuit. You may provide the URL of a Github repo or a shared folder containing your source files.
2. A video demo of your circuit working on your iceBlinkPico board.