

## **Solution 1:**

### **Classes that require studying:**

(We assume that each class session covers 1 topic for simplicity's sake)

#### **Physics 151**

Class sessions: MWF 11:15 AM -12:05 PM | Topics covered per week: ~ **3 topics per week**

#### **Engineering 113**

Class sessions: TTh 11:30 AM - 12:45 PM | Topics covered per week: ~ **2 topics per week**

#### **Mathematics 131**

Class sessions: TTh 8:30 AM - 9:45 AM | Topics covered per week: ~ **2 topics per week**

Total of 7 topics

### **Classes that do not require studying**

**First Year Seminar Engineering 191** | Class sessions: Th 4:00 - 4:50 PM

**ECE 150 Making Better Decisions by Humans and AI** | Class sessions: TTh 5:30 - 6:45 PM

### **Non-Class Activities**

**Art Club** | Th 7:00 - 8:00 PM

**Robotics Club** | W 6:00 - 7:00 PM

**Speech Therapy** | W 3:30 - 4:15 PM

**Therapy** | F 4:00 - 5:00 PM

**Leaving UMass for the weekend** | F 5:00 PM - rest of day

**Sleep/recreational period (8 hours per day)** | MTWThF 11:30 PM - 7:30 AM

**Breakfast-lunch-dinner period (1.5 hours per day)** | Varying, no dinner period on Friday

### **Free Time Calculations**

**M** 8:00 - 11:00AM | 1:00 - 2:30PM | 5:30 - 11:30 PM | Total time: 10.5 hours

**T** 10:00 - 11:30 AM | 1:30 - 5:15 PM | 7:45 - 11:30 PM | Total time: 9 hours

**W** 8:00 - 11:00AM | 12:45 - 3:15PM | 4:30 - 5:30 PM | 8:00 - 11:30 PM | Total time: 10 hours

**Th** 10:00 - 11:30 AM | 1:30 - 3:45 PM | 9:00 - 11:30 PM | Total time: 6.5 hours

**F** 8:00 - 11:00 AM | 1:00 - 2:30 PM | Total time: 4.5 hours

Total: 40.5 hours - 10 HW hours = 30.5 hours ~ 31 hours

## Adjustments To Design Specifications

The schedule may be broken into 15-minute blocks, but a minimum study session is 30 minutes to prevent excessively short study sessions, which would also be shorter than setup time. Reservation of 2 hours per day for homework, to be redistributed if no homework comes up. The most important classes are studied first and last.

## Proportionality Calculations:

**Physics 151** |  $3/7 \times 31 = 13.28$  hours ~ 13.5 | Split into two 6.75-hour periods

**Mathematics 131** |  $2/7 \times 31 = 8.9$  hours ~ 9 | Split into two 4.5-hour periods

**Engineering 113** |  $2/7 \times 31 = 8.9$  hours ~ 9 | Split into two 4.5-hour periods

## Assigning Study Periods:

### **Physics 151 Studying Period 1**

M 8:00 - 11:00 AM | 1:00 - 2:30 PM | 7:30 - 9:45 PM | = 6.75 hours

### **Engineering 113 Studying Period 1**

M 9:45 - 11:30 PM | T 10:00 - 11:30 AM | 1:30 - 2:45 PM | = 4.5 hours

### **Mathematics 131 Studying Period 1**

T 2:45 - 5:15 PM | 9:45 - 11:30 PM | W 8:00 - 8:15 AM | = 4.5 hours

### **Engineering 113 Studying Period 2**

W 8:15 - 11:00 AM | 12:45 - 2:30 PM | = 4.5 hours

### **Mathematics 131 Studying Period 2**

W 2:30 - 3:15PM | 4:30 - 5:30 PM | 10:00 - 11:30 PM | Th 10:00 - 11:15 AM | = 4.5hours

### **Physics 151 Studying Period 2**

Th 11:15 - 11:30 AM | Th 1:30 - 3:45 PM | 10:00 - 11:30 PM | F 8:00 - 10:30AM | = 6 hours