Taylor Larrechea

Dr. Gustafson

MATH 365

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Homework 1

1. Identify a vague scenario you would like to study.

The idea that I am choosing for this homework problem is number 14 from the sheet. This problem pertains to how does someone sign up for the right classes each semester.

1. From this scenario, identify a specific and measurable problem statement.

Problem Statement

How does someone arrange their schedule so they are graduating in the least amount of semesters possible?

1. List the variables that affect the behavior you have identified.

Some variables for this specific problem statement are;

* What time of year the class is offered. This means if it is offered in the fall, spring, summer, all, or a combination of semesters.
* The prerequisites for each class.
* The time of the day that the class is offered.
* The days of the week that the class is offered.
* The expected work load of each class.
* The option to take the class online.
* How many credit hours each class is.
* If the student can afford to take more credit hours in one semester if needed.

1. Which variables would be neglected completely? Which might be considered constants initially?

The first variable that can be neglected is the expected workload of each class. Although this is a good thing to take into account when signing up for classes, no one can tell off the top of their head how much the workload is going to be for that said class. That being said, there is a maximum amount of credit hours that a student is allowed to take before they have to ask for permission to take more, this is where the, “How many credit hours each class is” variable comes into play. The variables that can be considered constants initially are the prerequisites for each class and what time of year the class is offered. Some universities, like our own, only offer classes during a certain semester each year. In the foreseeable future, it does not seem likely that Calculus 1 and Calculus 2 are going to be dropped from the prerequisites for Calculus 3. Although this variable of, “What the prerequisites are” is an important variable for planning courses throughout ones academic career. This variable should also be considered constant.

1. Identify any sub models you would want to study in detail and any data you would want collected.

The sub models that I would like to study are the time of day that classes are offered. I believe this is an important sub model for this model of scheduling classes because some times of the day for classes may be worse for certain students than others. When classes have options to where they can be chosen by the time of the day it can be a big deciding factor for students scheduling their classes. The data that I would want to be collected would be the preferred professors for each course by students at the university and the preferred time of day for students to go to class. These two data collections are important because they show the most desired courses for specific reasons from students who have previously taken them. If someone can schedule the classes that they need to take in order effectively then the only thing left to do is to design an effective schedule based on prior experiences.