Our database is designed for making course selection plan. The two most important entity sets in the ER model represents are “**courses**” and “**students**”, including different attributes like “**section**” and “**major**” to make filter and matching. Other relationship sets and entity sets are necessity to make filter and constraints in all aspects.

The “requirements” set represents all the requirements to be satisfied for a student to graduate and get a degree of their target major. All the requirements are unified into several attributes, the course it includes and the unit to satisfy it. These requirements are categorized and connecting to “**courses**” with another relationship set “**courses\_requires**”.

The anti-requisite courses and pre-requisite courses are designed into two relationship sets that make constraints within courses. The attributes in these sets represents the contrary and the order of courses. Besides, “**taken**” and “**to be taken**” sets are designed to target the courses chosen by the user and constraint according to the courses that have been taken.