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**Session 08:** Modifying and Creating Students' Schedules

**Handout:** How the Auto Scheduler Works

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**Evaluation of Courses:**

Once Requests are entered and Courses placed in the Master Schedule periods so as many students as possible will get the classes they want, the school is ready to run the Auto Scheduler.

The Auto Scheduler process evaluates the course requests students have placed and the periods where the course is available in two phases, called Loops below. The program is looking at the number of **time slots** (not purely number of Sections) in which the class is offered when deciding Loops.

A class with a single section, or a class with multiple sections, **BUT those sections all meet in the same Term/Period/Day are going to be treated as a singleton**, since if the student can't get into one section, the student wouldn't get into **any** of the sections in this time slot. Singletons are Loop #1 and will be processed first; non-singletons follow in Loop #2.

**Loop #1 – Imperative (Singletons)**

Processing Order:

- 1) Priority = 9 (first) to 1 (last)
- 2) Required (first)/Elective (last)
- 3) Length; YR (first), SM (middle), TM (last)
- 4) Number of Available Sections; Least Available are processed first
- 5) Internal Course ID

**Loop#2 - Arbitrary**

Processing Order:

- 1) Priority = 9 (first) to 1 (last)
- 2) Required (first)/Elective (last)
- 3) Length; YR (first), SM (middle), TM (last)
- 4) Number of Available Sections; Least Available are processed first
- 5) Internal Course ID
- 6) Least Full Section, when multiple sections fit

After the grouping by Loop is determined, then the program uses the settings in the order shown above. Past documentation on the processing order did **not** include Priority, as setting priority on classes should be done sparingly, if at all. However, it is the first thing evaluated by

the Auto Scheduler within the Loop. Since it is seldom set and Required/Elective must be set to one or the other, Step 2 becomes the de facto first step in scheduling the courses.

### **Loops:**

When scheduling, the Auto Scheduler runs all of Loop #1 scheduling for all students by range first, then all of Loop #2.

### **Using Priority:**

Priority settings should be used rarely. They're designed to be tie-breakers between similar courses, such as Required Algebra II and Required Physics, or Elective Digital Photography and Elective Landscape Painting of the same length and number of sections.

1. **Required** courses with the default priority of zero are treated as Priority 5 by the Auto Scheduler.
2. **Elective** courses with the default priority of zero are treated as Priority 0.
3. **Setting a Required Course** to a level lower Priority 5 will make it schedule after other Required courses in its Loop, but before Electives that haven't been changed.
4. **Setting an Elective Course** to a higher level will cause it to schedule before other Electives in its Loop. Setting it to Priority 6 or higher will make this Elective schedule before Required courses which are at default priority.

### **Priority Scenarios:**

Using the example courses above, if all are Singleton (Loop #1), Year Long with default Priority and the internal ID corresponds with the course names, they'd schedule in this order:

1. Algebra II
2. Physics
3. Digital Photography
4. Landscape Painting

If Alg II and Digital Photography are Semester long and all remain singletons

1. Physics (Req, YR, Single)
2. Algebra II (Req, SM, Single)
3. Landscape Painting (Elec, YR, Single)
4. Digital Photo (Elec, SM, Single)

### **Now, make Digital Photo a Priority 4**

1. Physics (Treated Priority 5, Req, YR, Single)
2. Alg II (Treated Priority 5, Req, SM, Single)
3. Digital Photo (Priority 4, Elec, SM, Single)
4. Landscape Painting (Priority 0, YR, Single)

Even though Digital Photo is easier to schedule, as a Semester Course, its priority puts it before Landscape Painting.

**If Digital Photo is made Priority 6 or higher**, it will schedule before the Required classes that are only treated as Priority 5 when going against Electives at the default priority.

1. Digital Photo (Priority 6, Elec, SM, Single)
2. Physics (Treated Priority 5, Req, YR, Single)

3. Alg II (Treated Priority 5, Req, SM, Single)
4. Landscape Painting (Priority 0, YR, Single)

Even though it's an Elective, Semester Long, it is the only Priority 6 course in this list, so it's going to get scheduled before the Required classes at default priority.

To make sure it is not getting scheduled before the Required classes, it should be returned to Priority 4, or else the Required classes would have to be set to Priority 7 or higher.

In a complete Course Master, Priority 7 would set Alg II and Physics to schedule before other Required classes, which may not be what the district intends.

**Students Request Scheduling:**

Customer Service recommends running students to Start with grade 12 (last chance to get their classes) to 09. Auto-scheduler processes complete grade levels within the Loops; if the Start=12 and Finish=09:

- 1) 12<sup>th</sup> graders – Loop #1
- 2) 12<sup>th</sup> graders – Loop #2
- 3) 11<sup>th</sup> graders – Loop #1
- 4) 11<sup>th</sup> graders – Loop #2
- 5) 10<sup>th</sup> graders – Loop #1
- 6) 10<sup>th</sup> graders – Loop #2
- 7) 09<sup>th</sup> graders – Loop #1
- 8) 09<sup>th</sup> graders – Loop #2