

Scheduling Tips and Tricks

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General Tips

1. **CRITICAL:** You should create an annual scheduling document highlighting your environment and activities. This will help in subsequent years and will assist in letting you know your scheduling success annually. Make sure the document includes things like:
 - Number of students by grade level
 - Environment
 - Number of new courses included/excluded from the catalog. Unfortunate catalog changes due to staff and/or numbers
 - Staffing Info, special points, and inadequacies (eg: large part time FTE, no PE specialty..)
 - # blocks offered, by period, by grade level
 - Success in scheduling students (Percentage numbers not scheduled, adjusted, etc.)
 - Ideas for Next Year
2. Each School's success is dependent on how early they can get their Staff numbers and how early and effectively they can trust their next year line. District Office needs to support the effort by putting deadlines on School of Choice etc. so that staffing and numbers come together more quickly
3. Largest failure is because a single mistake becomes many. If something goes wrong, step back and assess the situation before making rash decisions and pressing program options.
4. Set Deadlines for each step of the process, namely:
 - Course Catalogs out to students
 - Course Requests In
 - Feeder Schools completed
 - Staffing Sheets Out
 - Staffing Sheets In
 - Course Request Tally, Confirm Course Offerings
 - Begin Design of Master Schedule
 - Complete Master Schedule Building
 - Scheduling Students, hand out schedules to students
5. Avoid August-mania. Spend more time in April/May:

- Reviewing course requests and cleaning mistakes. Do kids have too many course requests, too few, impossible selections? Are they missing requirements??? Check Grade 12's to confirm they can achieve their pre-requisites.
 - Confirming enrollment. Complete your recruiting. Force students to make decisions earlier than June.
 - Confirming requests are complete. Confirm that all expected students have completed course requests.
 - Prevent students from completing course requests at multiple buildings.
6. Auto-generate courses where possible (alleviates potential for students not to select things they MUST have). This can be accomplished up to the Middle Years Grades where certain core courses are common.
 7. Confirm Next Year Line for your expected students. Ensure that the School and Class are accurate.
 8. Consider using 'A'ternates ... even if not online at least on the signed course forms. This will prevent you from having to potentially contact students during the summer months should you be unable to fill their schedules adequately.
 9. Train your students to fill-in bubble sheets appropriately. Explain what 'R'equired vs. 'E'lective means. Put the fear of God in them reminding them that this sheet dictates their schedules for the coming year. Don't let the bubble sheets go home with the kids. Don't allow them to fill them out unsupervised. Spend counsellor time or 'something' to provide assistance to students' selections. Again, don't wait until May to do this.
 10. CIMS linking works .. but the rules are stringent. Variance from the rules will result in unusual scheduling scenarios. Double-check ALL links before scheduling for the first time (match group numbers are OK, preferred term is setup OK). Ask to re-establish links to ensure links are in place.
 11. CIMS Links will work for team teaching, ie: If a student gets Subject A with Teacher A, then ensure that student get Teacher A or Teacher B or Teacher C for remaining subjects. Refer to the 'Linking' document for examples.
 12. Preferred vs. Absolute Maximums have some impact. Do NOT set preferred and absolute to be the same number BUT if you are willing to accept say 25-32, I'd set my values as 29 and 32. Measure how important balanced class sizes are in comparison to potential for unscheduled students.
 13. Get your staff used to Codes. In the documentation you send to them re: subject areas to teach etc. design with Codes in mind ... Getting them used to that terminology will mean they will become better online users and recognize schedules, etc. more easily.
 14. Bubble sheet layout is very important. Make sure that the course offering sheet is as easy and understandable to students as possible. Consider having different formats for Grade 10's vs; 11/12's etc. to make selection easier

Timetable Building Tips

1. Don't be starting SCH.330 (Proposed Master) or time table building without knowing your expected staffing FTE. You must know how many blocks you can assign before beginning to design.
2. Don't incorporate too many changes to schedule concurrently. Positive results may be masked or lost due to a concurrent negative factor.
3. Document your changes. This can assist in seeing progress AND it will prevent you from going in circles when trying different combinations.
4. If you are using the Resource Allocator start with as few restrictions as possible. As soon as you impose restrictions it becomes difficult to see what the computer wants to produce as an optimal schedule.
5. Double-Triple check that number of course/sections appears balanced between semesters. The Resource Allocator does NOT check for section balance, ie: 6 Math 12 semestered sections DO NOT necessarily turn out 3 and 3 in each semester.
6. Study the conflict matrix HARD. Pay attention to the worst conflicts. Use color to highlight critical and secondary considerations. Often, you get into the timetabling and forget about the conflicts. Each step of the way, look at critical conflicts as outlined by the conflict matrix/report.
7. In first portion of July make sure to check transcripts, failure listings etc. to get 'on top of' summer school and other course needs necessary due to failures.
8. As you are designing your master schedule look to balance by:
 - Total scheduled students per period
 - Total scheduled number of students per period per course type (Math, PE, Sciences ...)
 - Scheduled students per grade level to ensure course grade level balance
 - Singleton Conflicts cannot occur

If you are doing things manually use color or sorting to be able to identify courses by grade level.

9. When you have to consider closing a course and/or sections look to close your constant or core course(s). If you start closing electives, there is no option to bring them back later .. but it is easier to fit back a core if numbers were to change
10. More course choices are not necessarily positive. Singletons and partial/rigid teacher schedules make timetabling very difficult

SCH.610 Tips

1. If you do NOT select to Presort 'Y', then the students will be sent to the Scheduler in student number order based on SCH.410 or STU.301.
2. The Pre-sort item adds up points per student and loads them according to total points. I think Pre-sort is VERY important to attaining better schedules especially to accommodate a large number of singleton courses. The goal will be to send the students through the scheduler only once (this will assist in better semester balance). Presorting may assist in this.
3. When you walk-in schedule a student, the courses are loaded in sequence order. If you place student 'R'equired courses first, the system will attempt semester balance. When you arena schedule, other factors namely (course preferred size, try all combinations) affect the order and re-order that occur. Presort is NOT a factor in the order in which courses are loaded to the scheduler.
4. Test out Try all combinations 'N' if you want schedule through the students and not go back-n-forth as the scheduler progresses. If you have selected to Presort, this will ensure that singletons are scheduled first Then the remainder of the scheduling can occur like the walk-in scheduler (providing preferred maximums are high enough)
5. The arena scheduler advances per student all courses NOT in some course or other sequence order
6. Student Availability should be turned OFF

The steps of the arena scheduler are:

- LOAD (Load the students and courses based on SCH.410 entries, Nyear line NOT a factor)
- RESET (Clear Course Request Section values as determined by the Reset Option)
- SORT (Sort the Students and courses for each according to the Presort Option)
- SCHED (Perform the algorithm) – User can cancel at any time and past schedule will remain intact. Student Schedules are NOT updated until the update phase.
- UPDATE (Update Section Values and complete process)

Important Utility Programs to Run (Menu SCH110 very dangerous)

1. Before running student scheduler ... SCH.619 Sort course requests by Request Type to ensure better balancing (R's first, then 'E's ..)
2. When assigning new links (SCH.650) ... SCH.684 Re-establish Links. Each Link for a student contains a unique link sequence number (ie: 1 for the 1st link for a kid, 2 for the second for that same kid)
3. Once scheduling of students begins ... SCH.611 constantly to ensure summary enrollment shown on master schedule is 'true'. This option can be run anytime during the day. Make it a regular item to run especially during busy scheduling periods where several people are accessing same information concurrently.
4. After scheduling complete and **before first day of school** .. SCH.619 to resort course requests by term/period (or appropriate) to better manage SCH.410. Never, ever, ever, ever run this option after school begins. It will completely ruin attendance and TRAX and grading.
5. After Year is well underway consider removing unscheduled requests SCH.630. You can remove drops or keep them onboard for reporting.
6. New option SCH.904 to autofill grade field. This will assist SCH.561 master schedule by Grade Level. Make sure to do this once master schedule is built (rerun each time you rebuild) so that you can report by Period/Grade Level to assist in identifying problems and load!
7. New sub-total by grade added to SCH.561 to assist in establishing consistent period load
8. Backup Schedules! Once your schedules are fairly in place, make sure to start backing up schedules before re-running SCH.610. This will allow you to retrieve previous schedules should you not like the results of the scheduler and wish to return to previous copy. This option backs up student schedules (courses and sections).

RESOURCE ALLOCATOR QUARTER SCHOOL TIPS

Traditionally, the resource allocator works to select periods only ... term must be specified. In order to get around this problem, use 'Assign Additional Periods for Resource Allocator 'Y'. This option reverses your terms and periods in order to be able to select what term a course can be taught in. It will then also accommodate combined quarter, semester, and linear courses at the same time.

EG: If I am running a combination of quarter courses, semester courses, and linear courses and I have 4 periods in a day:

- In SCH.101 select to change Periods. At the bottom of the Periods screen (area where you define 01 = Period 1, time 8am to 9am) turn the "Use alternate periods for resource allocator?" to 'Y' and ENTER.

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|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | PR1 | PR2 | PR3 | PR4 | PR5 | PR6 | PR7 | PR8 | PR9 | P10 | P11 | P12 | P13 | P14 | P15 | |
| Period | A1 | A2 | A3 | A4 | B1 | B2 | B3 | B4 | C1 | C2 | C3 | C4 | D1 | D2 | D3 | |
| Term# | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | |
| Period# | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | |
| Period | D4 | T1 | T2 | T3 | T4 | | | | | | | | | | | |
| Term# | 4 | 1 | 2 | 3 | 4 | | | | | | | | | | | |
| Period# | 4 | 5 | 5 | 5 | 5 | | | | | | | | | | | |

- Make sure to place your TA and Lunch periods at the end of the alternate periods so that you can limit regular courses NOT to include TA and LUNCH.
- In SCH.310 identify the length of each course and what terms it can begin in. This information is used in the allocator to assure that semester courses cannot be run in eg: 43 (Term 4 period 3) and 14 (Term 1 period 4). Also use it to block a semester course to a particular semester.
 - Semester Courses would be 2 in length. If you want to offer this course in either semester, then beginning terms would be "1 3 _ _"
 - Quarter courses are 1 in length. Identify which quarters the course may be offered in "1 2 3 4"
 - Linear courses are 4 in length and can begin only in term 1 "1 _ _ _"
- Input what teachers are teaching in SCH.330. Make sure to utilize the resource allocator alternate periods. For all courses Terms will always be 1 - 1. You will use number of periods (1 = quarter, 2 = semester, 4 = linear) and Range of periods (11 - 44 indicates can be taught anytime, 11 - 42 indicates course can be taught in any term but only in either periods 01 or 02)

| Course | Sec | Terms | Periods | Range | |
|--------|-----|-------|---------|---------|--|
| FR 001 | 1 | 1 - 1 | 02 | A1 - D4 | *semester course can be taught anytime |
| FR 001 | 2 | 1 - 1 | 04 | C1 - D4 | *linear course - only offered in afternoon |
| FR 001 | 3 | 1 - 1 | 01 | A1 - D4 | *quarter course, any term - any period |

- If a particular course is double block .. DO NOT increase number of periods. Enter the course twice. Once with class rolls 'Y' and the second time with class rolls 'N'
- If a particular course can only be taught in a certain period, use range to limit the selection
- If you want teachers to get a STUDY, create STUDY1, STUDY2 in SCH.310 and assign 2 studies to a teacher, ie: in SCH.310 limit STUDY1 to semester 1, STUD2 to semester 2.
- If you want lunch scheduled for students, add LUNCH to SCH.310, to SCH.330 AND mass assign lunch to student timetables.

Careful: There is a 'P' reset option in SCH.330. If you select it for a teacher, then the Resource Allocator considers everything OK for this teacher and skips the teacher in resource allocation.

If you leave the Number of students blank in SCH.330, then it will auto-fill automatically based on:

- a) Room definition capacity field (if room is selected)
- b) SCH.310 course definition 'Usual number of students'

ALTERNATE THEORY:

If you are a 90%+ semester school and you want to be able to fully control the semester range for certain course(s) and sections, then you can use the resource allocator:

| | PR1 | PR2 | PR3 | PR4 | PR5 | PR6 | PR7 | PR8 | PR9 | P10 | P11 | P12 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Period | A1 | B1 | C1 | D1 | A2 | B2 | C2 | D2 | L1 | L2 | X1 | X2 |
| Term# | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 |
| Period# | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 5 | 6 | 6 |

In this scenario - linear courses would have to be entered on two lines because the number of periods could never be greater than one. Also, in SCH.615 you can identify to NOT consider the terms as defined in SCH.310.

Timeline of Activity

1. Set timeline and Dates
2. Prepare Course Booklet
 - Be careful on not offering too many courses. Must be a good reason to offer a course
3. Circulate Forms to Teachers
 - Find out what they are qualified to teach, experienced in teaching, have taught, preferences .and extra-curricular plans. This is important to start addressing who will teach what
4. Prepare bubble sheets and/or course forms for students
5. Course planning feeder schools
 - meeting with counsellors, how to recruit
 - arrange visits and planning with parents
5. Course Planning own students
 - parent evenings, counsellor visits, etc.
6. Review, Review, Review course selections
 - look for not completed forms, ones with too few/too many courses
 - identify non-graduating students,
 - review bad selections or non-core selections
7. Provide Course Verifications to Counsellors/Students
8. Review, Review, Review Requests
 - look for students no longer going to attend (SCH.710)
9. Run Course request Tallies
 - DO NOT DO THIS until you are comfortable that the courses are 'stable'
 - Consider failures in numbers
 - Review requirements vs. number of students vs. staff Decide on courses & closures
 - Look at splits, taught together courses
10. Given what you want to offer and that number of sections, begin staffing
 - List teachers and blocks and indicate partials
 - FTE of staff MUST match number of course/sections you will be offering
 - Don't begin to design your timetable until the numbers match
11. Begin timetable building process
 - Use Conflict Matrix
 - Use Schedule by Grade constantly to look at balance by grade level and subject area. Numbers per grade level MUST balance Subject area balance too.

5 Concerns:

- Subject Area Balance
 - Grade Level balance
 - Cross semester balance (Math 11 in both terms ...)
 - Total Number of sections by period
 - Room restrictions
-
- Always keep an eye on the conflict matrix ... and on singleton courses

Middle School Scheduling (Teaming or Platooning)

Problem: Linking is impossible. Students form 2 sets, ie: those that mix thru 4 teams, and those that mix in 2 teams. This is based on the options they select.

Goal: Load students into scheduler based on their options. This means:

- a) Do a better job on option selection sheets to define to students what selecting certain combinations mean, namely:
 - will belong to team
 - will not belong to team
 - may belong to a team depending on space in teams
- b) Make sure you have considered all of the possible option combinations and know how you will handle them
- c) On bubble sheets, include 'fake' course, ie: TEAMA, and potentially another TEAMB
- d) Load bubbles (options ONLY), produce numbers, make team decisions, design timetable
- e) Adjust options if necessary (on bubble sheets) for some students
- f) Sort Bubble sheets by TEAM and remove those NOT going on a TEAM (to be loaded later)
- g) Load TEAM only sheets
- h) Adjust SCH.320 Master schedule to load ONLY TEAM SECTIONS. Adjust the absolute maximum to 0 for those course/sections that are NOT part of team
- i) Run the scheduler, re-run confirm ... COMPLETE those kids' schedules
- j) When these are complete, look at number of openings. Load appropriate number of could be team and load
- k) If you want to ensure TEAM students are NOT rescheduled, use SCH.650 to mass change those entries all to 'P'
- l) Load remaining

** Scheduling Note: We should automatically put link course kids first ... the problem is often that the scheduler loads non link courses to linked courses (ie: those taking one side of an otherwise linked course making it impossible for linked kids to get the course! At present the only way to accomplish this is to tag link students or use the options tag to give them additional presort points