BRITISH COLUMBIA | MyEducationBC

Scheduling Module 7

Rules

March 2015 v1.1

FUJITSU

Version History

Version	Date	Description
1.0	March 10, 2015	Initial Document
1.1	March 24, 2015	Updated Section 2.1 with the requirement of Teachers for the 'Course Blocking Simultaneous' rule

Confidentiality

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1.0 Introduction to Rules

Use scheduling rules to inform the system of any constraints it must follow when building your master schedule or loading students. Rules can be copied from previous years to be used in the current build year. For example, if you have full year courses that you back together on day one and day two, you can define a rule containing both courses, to ensure the build engine schedules sections of Math on Day 1 and PE on Day 2.

Rules are course-based, not section-based; rules are created, applied to courses and the result is how sections are scheduled. If it is required that only certain sections of courses have constraints, those should be entered as manual constraints against individual sections in the Workspace.

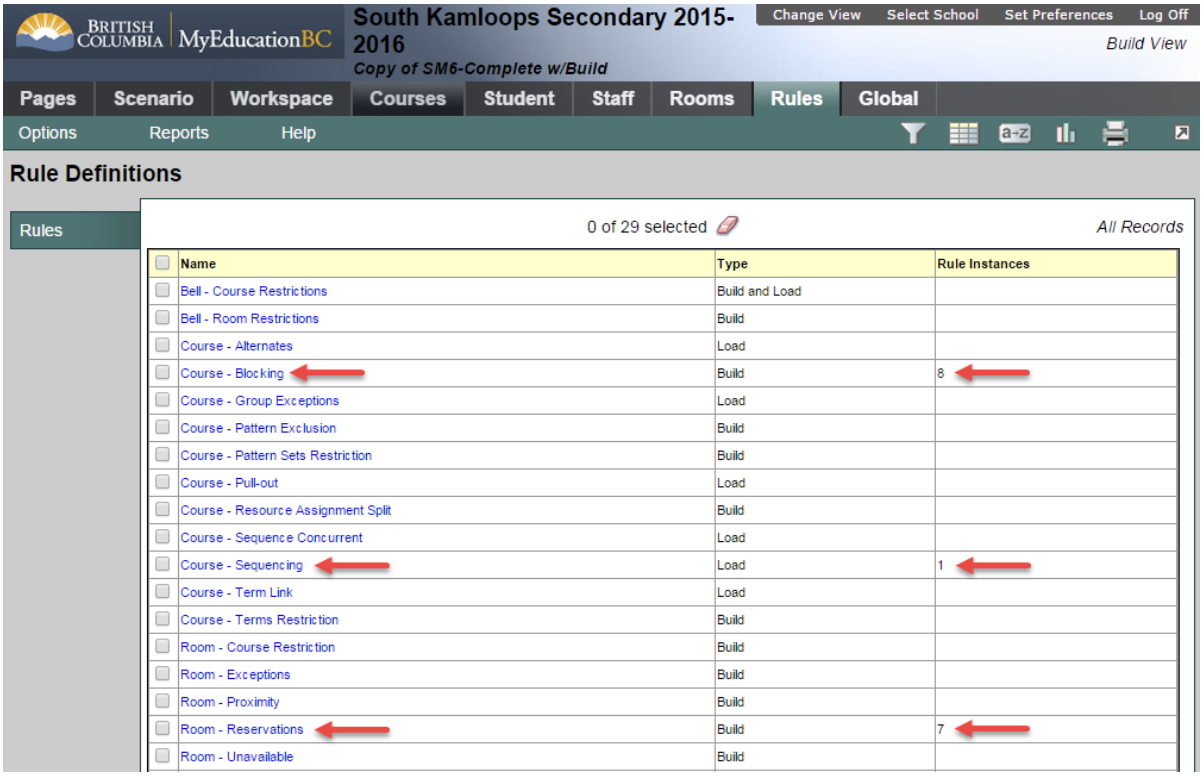
There are two types of rules, ***Build*** and ***Load***. The build rules apply to the scheduling of sections (Term, Schedule, Room and Teacher) and the load rules apply to how students are scheduled into sections.

There are 4 filters ***All Records***, ***Build Rules***, ***Load Rules*** and ***Common Rules,*** the latter only applying to schools with multiple Bell Schedules (please contact the service desk if you are in this situation).

You can have an unlimited number of rules within each category.

Note: The more Rules created, the more constraints you are placing on the application's ability to schedule.

For example, in the screen capture below there are multiple ***Course Blocking Rules***, a single ***Course Sequencing Rule*** and multiple ***Room Reservation Rules***:



Many of the rules have a **Rule Priority**. The options for this are **Hard** – "include this rule" or **Ignore** – "do not use this rule." The latter allows for turning off a rule without the need to delete in case it might be used at another time. This functionality allows the user to create rules, run the build or load, analyze results, turn off one or more rules and re-run.

To add a Rule: *Rules top tab* > *Click the name of the Rule* > *Options* > *Add*. Rules can also be added from each scheduling attribute (i.e. Courses, Student, Staff or Rooms top tabs).

Note: It is recommended that rules be added from the Rule top tab, until users become very familiar with the functionality.

The following sections cover the rules that will most commonly be used. A complete list of build and load rule definitions is provided in Appendix A. If districts/schools would like to further explore options available, they are encouraged to review the available video, refer to the documentation within MyEducation > Build view > Help > User Guides > Master Schedule Building v5.2 and then bring questions to the scheduled support sessions.

2.0 Build Rules

2.1 Course Blocking – Simultaneous

This rule will create **Classes** groupings, when multiple course sections are being taught at the same time by the same teacher. "Classes" provides the teacher with the ability to take attendance on a single group of students in a period regardless of the course composition. This does not apply for grades or reporting.

Example: A grouping of Art classes. MVAG-10 section 01; MAF--11 section 01 and; MAF--12 section 01, are all taught at the same time, by the same teacher, in the same room.

Fields:

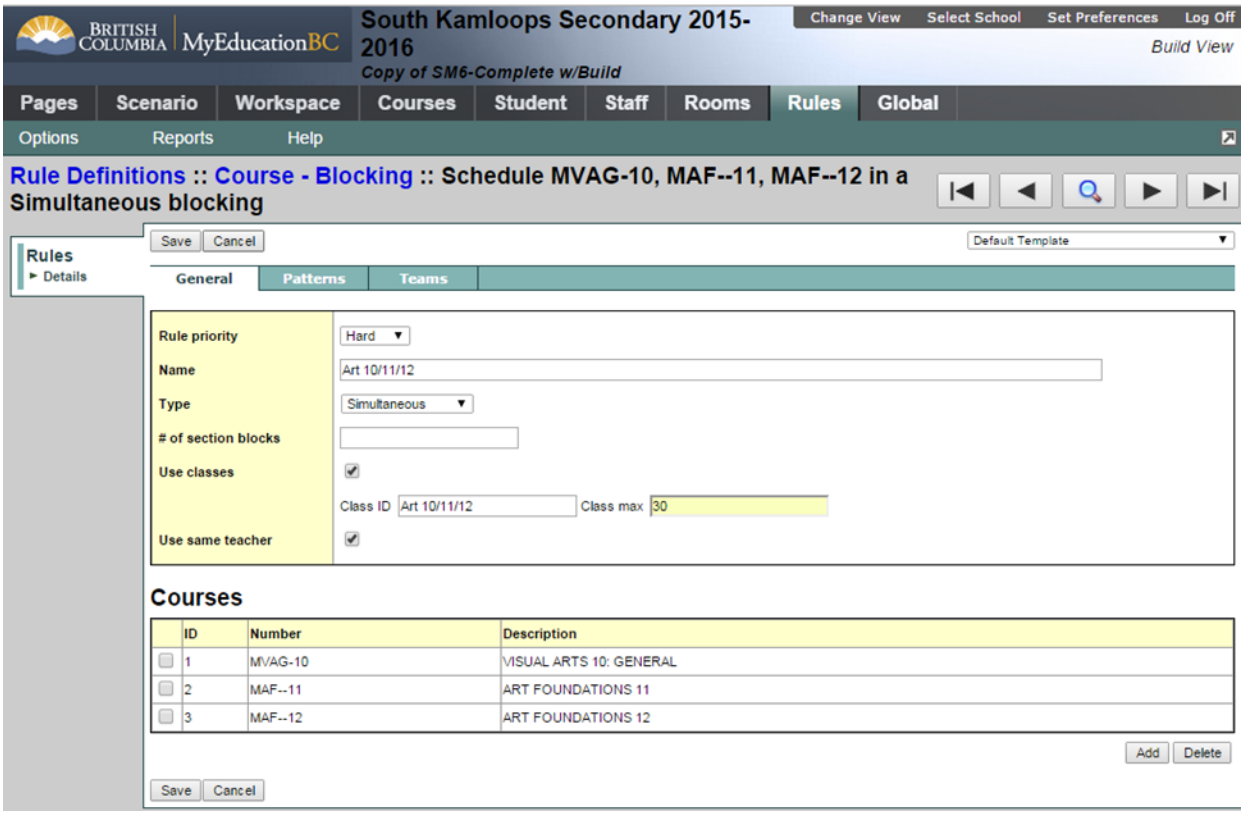
- **Rule Priority** – Hard means the rule will be used when a build is run, Ignore allows you to 'turn it off'.
- **Name** – Enter a name for the rule.
- **Type** – Set to Simultaneous
- **# of Section Blocks** – This field allows you to designate how many groupings you would like to be part of these Classes.

  Example: You have three sections each of Art 10, 11 & 12. You could create one grouping by entering a "1", then there would only be one Section with the three courses at the same time, with the same teacher, in the same room. If you want ALL sections grouped, leave this field blank.
- **Use Classes** – Check this box.
- **Class ID** – Enter a name unique to this grouping. You can use the same name as previous.

- **Class Max** – This is the MAXIMUM number of students that can fill this entire grouping.
- **Use same teacher** – Check this box.

In the Courses area click **Add** to add all the courses that will have sections grouped into the Classes combination.

Following is the completed setup for the above scenario.



Note: Teachers MUST be assigned to all course sections, which are included in this rule. The assignment of teachers to individual sections is covered in Scheduling Module 8 - Workspace and Build Validation. e.g. In the above screen capture, teachers would need to be assigned to ALL sections of MVAG-10, MAF--11 and MAF--12.

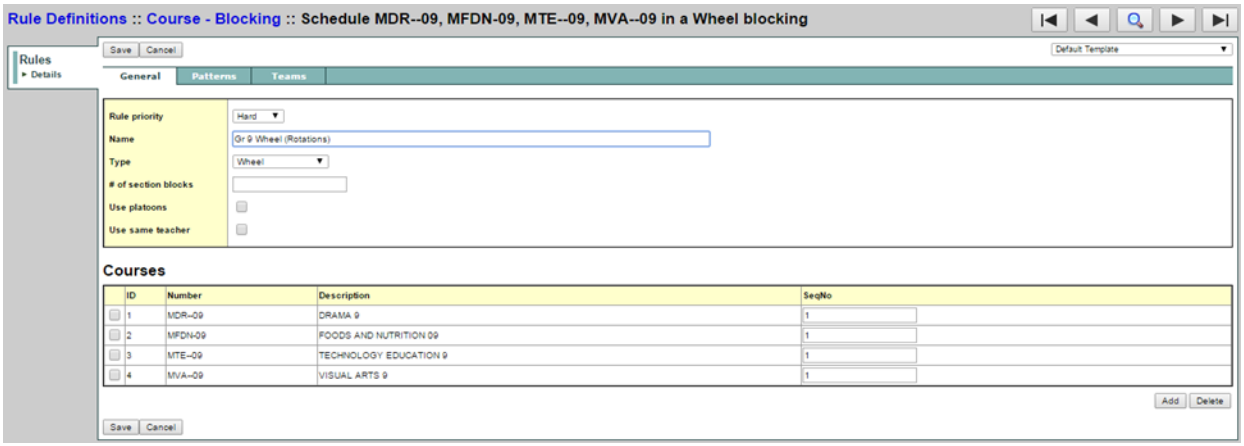
2.2 Course Blocking – Wheel

This rule is used to keep cohort groups of students together, as they take multiple courses.

Note: This rule is the BCeSIS equivalent of creating Host and Subordinate courses. One significant difference is that students need to have a request for all courses contained in the Wheel.

Wheels represent a series of courses that all students take, but not necessarily in the same order.

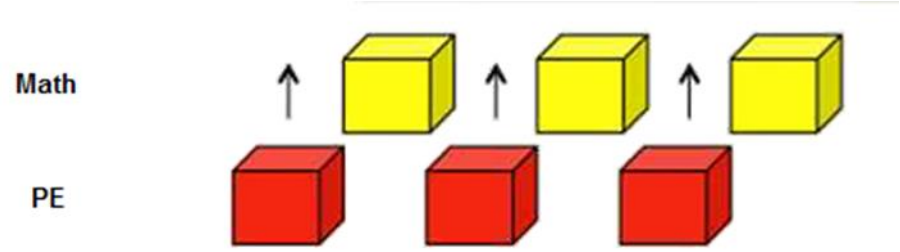
By selecting the option of **Use platoons** – the application will automatically group students together, when students are loaded. The screen capture below shows a typical configuration, for a school that offers four courses in a rotation:

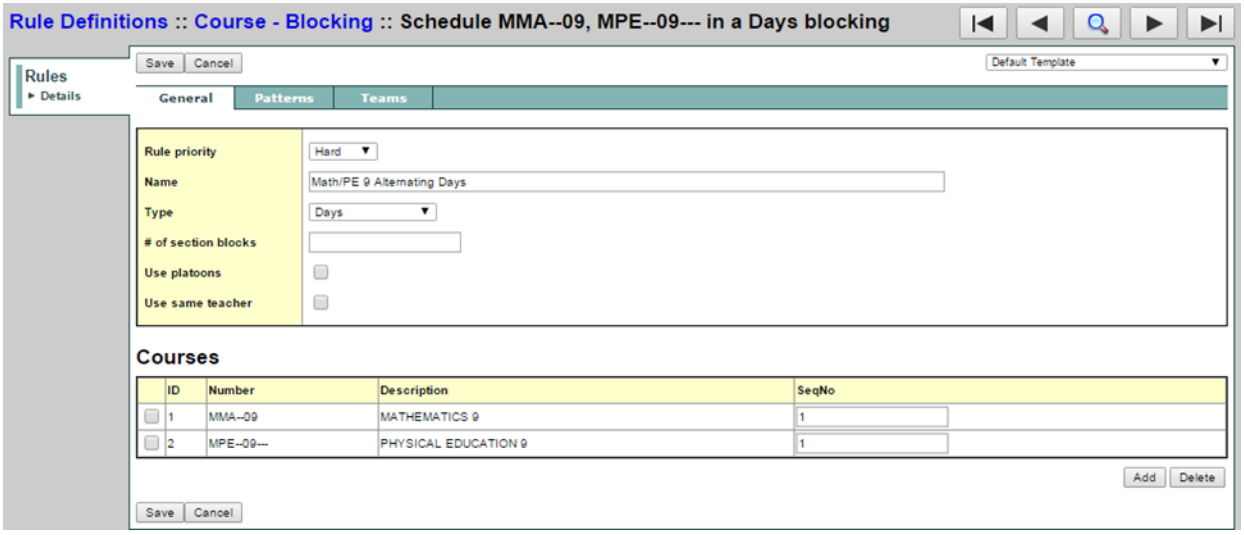


2.3 Course Blocking – Days

This rule can be used if schools would like to ensure one course section is offered on one day and another is offered on the second day.

In the example below, Math 9 and PE 9 are scheduled on alternating days in the same period for the full year.



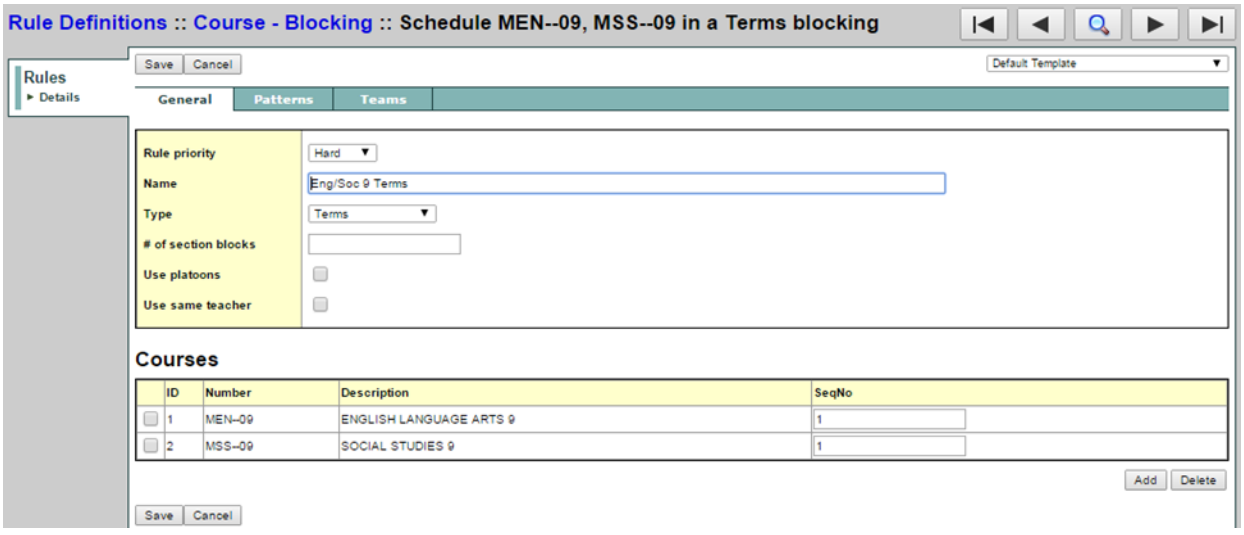


2.4 Course Blocking – Terms

Course blocking - terms is used when a course meets one term, and a course contingent on the first meets the next term during the same period. In the example below this school would like to ensure sections of MEN--09 & MSS--09 happen at the same time across terms. Options to use platoons to keep the student groups together are available as is the ability to use the same teacher. Where the order does not matter, set the sequence number (SeqNo) to 1, otherwise set the order they should be presented.

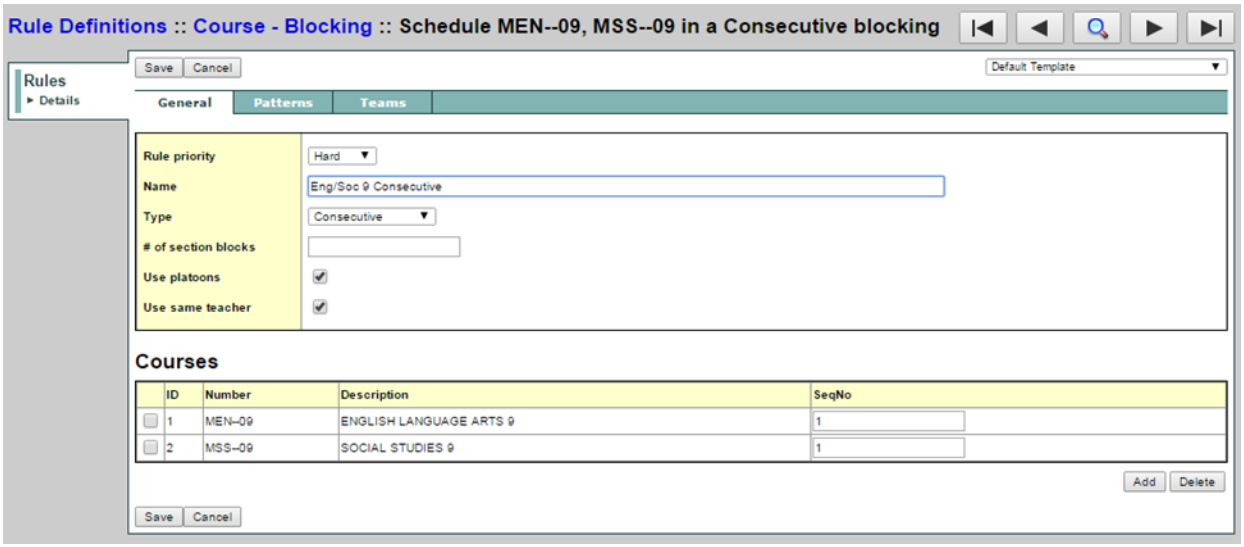
S1	Day 1	Day 2
1		
2	MEN--09 (01)	
3		
4		
5		

S2	Day 1	Day 2
1		
2	MSS—09 (01)	
3		
4		
5		



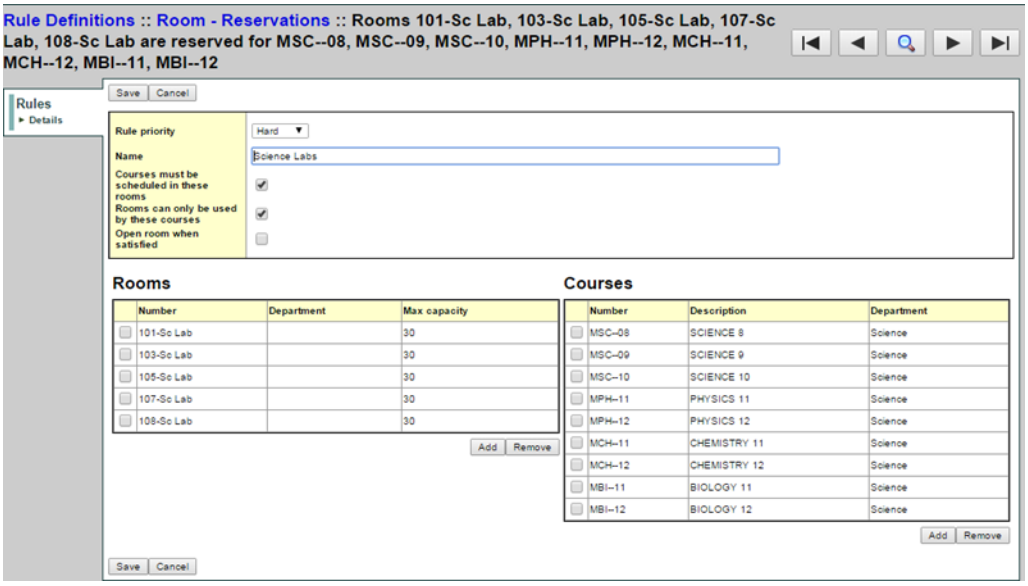
2.5 Course Blocking – Consecutive

One course meets after another, back to back. Leaving the # of section blocks blank indicates to the builder to match all sections. Use platoons will keep the group of students together in each section and use same teacher will keep the teacher for each of the matching course sections. If the sequence number does not matter, use 1 for both/all sections. Example: English 9 needs to be before or after Social Studies 9



2.6 Room Reservations

This rule allows rooms to be used for specific courses. Options include to restrict the use of the identified rooms only for the listed courses, and/or to open the rooms once the reservations have been satisfied. In the example below, the science labs are used only for the Science courses.

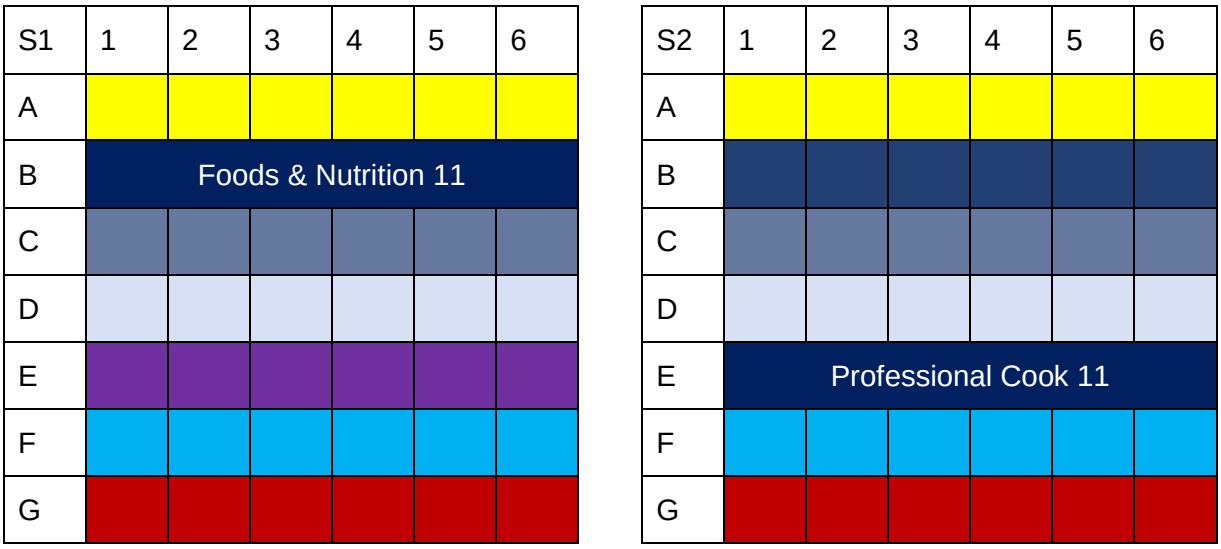


3.0 Load Rules

Note: The more rules that are added to a scenario, the more difficult it will be for the Load engine to satisfy all the conditions entered. Users may also experience difficulty in the analysis of the master schedule, until they are familiar with the overall functionality contained within the **Build view.**

3.1 Course – Sequencing

Course sequencing loads students in a particular order such that course A will be assigned before course B in a future term. This rule can be used to manage pre-requisites by loading students into courses in an order. In the example below, Foods & Nutrition 11 must be loaded from student requests in an earlier term than Professional Cook 11.



Appendix A: Build and Load Rule Definitions

Scheduling Rule	Description	Example
Bell – Course Restrictions	If your school operates with more than one bell schedule, identify the courses you want to assign to a specific bell schedule.	If fifth grade students take courses tied to the fifth grade bell schedule, assign all fifth grade courses to that bell schedule.
Bell – Room Restrictions	If your school operates with more than one bell schedule, identify the rooms you want to assign to a specific bell schedule.	If two grade levels have different bell schedules that operate with a different number of days per cycle, you most likely need to determine which rooms are assigned to which bell schedule.
Course Alternates	Identify courses that are global alternates for another course. This rule applies to all students that request the primary course.	If any student is requesting Course A (Spanish) and doesn't get into it, try them into Course B (French), or even Course C (German). Note: The system first uses alternate requests by students, then alternates you define for a course, and lastly the alternates you define in this rule.
Course Blocking Note: This is the most commonly used scheduling rule.	Block certain courses in one of the following ways:	Examples:
	Consecutive: One course meets after another	English 9 needs to be before or after Social Studies 9.
	Days: 'Dovetail'- one course meets one day, the other course meets the other day	You would like Gym to meet Day A and Health to meet Day B.
	Free form: If a course is not one of the other block types	You want English 9 on Period 1 for two days and MCAS English on Period 4 for two days.
	Simultaneous: The two courses meet at the same time	Simultaneous: The two courses meet at the same time A small group of French 4 students wants to be able to continue to French 5. There is no room or staff capacity. So you decide to offer French 5 as an independent project, at the same time as French 4 and with the same teacher.

Scheduling Rule	Description	Example
	Not Simultaneous: The courses cannot meet at the same time	Because 97 percent of the Band students also take AP English 12, these two classes should never happen at the same time.
	Terms: One course meets one term, the other course meets the next term during the same period	If you have one class in one term, keep it in the same period in the opposite term.
	Wheel: Group of courses all students take but start at different courses	Middle school enrichment curriculum might dictate that students take Music, Art, Library Science, and Technology. Each group of students will start at a different course and then move on to the others in a circular pattern.
Course Group Exceptions	Specify the list of courses that can be excluded from a group (house, platoon, or team). To do so, identify the groups, minimum required sections for a student to get in order to be considered in a group, and the courses that can be exceptions for students in those groups. You can also determine if you want to allow exceptions in non-mixed sections (sections that are identified with a specific group).	For example, you might determine that students on Team Blue must get at least three of four sections on their schedule on Team Blue. The fourth section can be a section tied to another team (non- mixed), or not to any team (mixed).
Course Pattern Exclusion	Match specific courses to specific schedule patterns that the system cannot use to schedule those courses.	You might not want Physical Education courses to be scheduled in the periods after lunch. Or, if you create component-based patterns, you might create a rule to identify those patterns that the system should not use for courses that use component- based schedule patterns. For example, assume your school has a Math course that students must take four times during a schedule cycle. The only patterns you want the system to avoid for this course are patterns that would repeat the course twice in one day.

Scheduling Rule	Description	Example
Course Pattern Sets Restriction	Specify the number of sections for a course that are allowed for a particular subset of patterns.	For example, an English course has four sections, of which three meet every day for a semester, and one meets every other day for the entire year. Using this rule, courses can now have sections with different pattern shapes.
Course Pull-out	Indicates it is acceptable for a student to have a conflict.	A student can be pulled out of English class for speech therapy twice a week.
Course Resource Assignment Split	Specify that the system can split sections built for the courses you select by teacher and/or room. First, you specify the minimum and maximum number of teachers and rooms the system can use to split the sections. Then, add possible schedule patterns and determine how you want to split resources (teachers and rooms) within each possible pattern. Lastly, identify which rooms the system can possibly schedule the split sections in. Note: If you do not specify specific rooms on the Rooms sub-tab, MyEducation BC uses the standard room assignment hierarchy.	For example, a Creative Writing course can be taught by any two teachers in the English department in one of three classrooms in a hallway, in a 1(A-F), 2(A-F), 3(A-F), or 4 (A-F) schedule pattern.
Course Sequence Concurrent	Specify the list of courses students must take during the same term.	Students that enroll in Calculus in a term must enroll in Chemistry the same term.
Course Sequencing	Students must take a course before taking another course in the same year. **Note**: You need to set this rule even if you have prerequisites defined.	Students must take Latin I before they take Latin II if they request both in the same year.

Scheduling Rule	Description	Example
Course Term Link	Specify a list of courses a student must be scheduled in across the terms you specify. You can determine that the courses must be scheduled during the same period across terms, or that the system can load the students in the courses in different periods each term.	Students must take Health, which meets for one quarter, and Physical Education, which also meets one quarter. Without this rule, the system might schedule students in one course Quarter 1, and the other course Quarter 3, leaving two quarter holes in their schedules. Define a Course Term Link rule to determine that these two courses should meet during one semester to leave an entire semester free for another course.
Note: If a staff member's Use preferred room only checkbox is selected in the staff scheduling preferences, the system follows that before applying any of the room rules you define below.		
Room – Course Restriction	Identify the specific room(s) the system can schedule a course in.	Keyboarding can only meet in three of the five computer labs. You identify the three labs. Note: Other courses can meet in these rooms as well.
Room - Exceptions	Identify a list of courses that cannot be scheduled in a list of rooms.	A school might identify that all Math courses cannot meet in the rooms in the Science wing because of the types of tables available in those rooms.
Room – Teacher Restriction	Only use a specific room for a teacher.	Ms. Healy only teaches classes in room 354. This rule is more flexible than selecting the Use preferred room only checkbox in staff scheduling preferences because you can list several rooms and the specific courses the system can schedule in each specific room for that teacher.
Room Proximity	Determine the locations that are close to a room to minimize teacher travel time.	For schools with multiple buildings or wings, teachers might have to stay within one building or on one side of the building to make it from class to class on time.

Scheduling Rule	Description	Example
Room Reservations Note: This is the most common room rule.	The system can schedule only the courses you identify in this room. You can also identify rooms that can be used only by the list of courses you identify. Select the Open room when satisfied checkbox to allow the system to schedule other courses in these rooms after the courses listed in the rule have been satisfied first, and there is extra capacity left Select the Open room when satisfied checkbox to allow the system to schedule other courses in these rooms after the courses listed in the rule have been satisfied and if there is extra capacity.	The Science Lab room can only hold Biology, Chemistry, Anatomy, and Physiology course sections; the system cannot schedule any other courses in this room. This rule is ideal for Physical Education and Music courses.
Room Unavailable	A room is unavailable during certain periods on certain days. **Note**: This rule is good to use if your school is desperate for space.	The English Department chairperson's classroom is unavailable on Day A, Period 2 due to department meetings. Or, the Cafeteria is available to hold classes all periods except the three lunch blocks.
Student-Student Relationship	There are two different relation types you can define for the rule: **Avoid**: One student can- not be scheduled in the same section with another student. **Together**: One student must be scheduled in the same section with another student(s). By default, the rule applies to all courses the students share. You can add a list of courses that the rule should not apply for as exceptions.	Two students with a history of fighting cannot be scheduled in the same course section. Or, students who are twins must be scheduled in the same course sections.
Student Avoid Teacher	One student cannot be scheduled in sections taught by a list of specific teachers.	A student cannot enroll in a course taught by Mrs. Mendez because of a past incident.

Scheduling Rule	Description	Example
Teacher Avoid Student	Identify a teacher and a list of students that cannot be scheduled in any of the teacher's sections.	Several students had conflicts with Mrs. Smith and cannot be scheduled in her classes. **Note:** If she is the only teacher available for required courses, this rule will not be adhered to.
Teacher Common Planning	A group of teachers need the same free, unscheduled time. Assign the rule to a course to create a section on teachers' schedules.	All staff members in the English Department need a free period for a department meeting. The system uses the times you enter as options; it does not adhere to all the options you enter. If you need a specific day and period, use a Teacher Unavailable rule for each affected teacher.
Teacher Concurrent	A teacher can teach more than one course at a time.	The resource room teacher might teach Math resource and Language resource at the same time, in the same room..
Teacher Dovetail	Select a teacher and specify a list of partial cycle courses that should be scheduled to minimize the number of periods in the teacher's schedule.	A teacher teaches two sections of a semester course. Rather than scheduling the teacher in two different periods across semesters for the course, schedule the teacher into the same period across semesters.
Teacher Max-in-a-row Reset	Reset the maximum number of periods teachers can teach after a specific period.	Some schools identify a 10- minute period between periods 3 and 4 as a Homeroom period. Then, period 4 acts as a new beginning to the max-in-a-row parameter.
Teacher Part-time	A teacher needs a specific number of free periods during a span of periods.	Lunch spans three periods a day (5A, 5B, 5C). Each teacher needs one of those periods free to eat, but it does not matter which period it is.
Teacher Unavailable	The system cannot schedule a teacher during the time block you specify.	A teacher might not be available Period 1 due to daycare drop-off, or a baseball coach needs to be free Period 9 due to his game schedule.