Appendix C

Scheduling Procedures

This appendix is a step-by-step guide to the recommended scheduling process. Because the needs of each indepen dent school are unique, these steps should only be used as building blocks to assist you in establishing your scheduling procedures.

The appendix is intended for use as a supplement to *Chapter 7: Requests*. More in-depth descriptions of fields and buttons are provided in that chapter.

Figure C-1. Scheduling processes.

SCHEDULING PROCESS

The steps that make up the scheduling process are listed below. If your school creates the master schedule "manually," then you would use the steps that have a ✓ beside them in the *Manual* column. If your school uses the master schedule builder, then you would use the steps that have a ✓ beside them in the *Builder* column. Each step is described in more detail in this appendix.

Step	Manual	Builder
1. Create the academic year	✓	✓
2. Set up the scheduling data in **Administration Maintenance**.	✓	✓
3. Copy courses and sections to the new academic year.	✓	✓
4. Review and establish your master schedule for next year.	✓	
5. Set up options for the master schedule builder		✓
6. Use **Course Recommendation Maintenance** (optional).	✓	✓
7. Enter student course requests through **Student Request Maintenance**.	✓	✓
8. Review course requests using the available reports to determine the number of sections needed and course requests entered.	✓	✓
9. Enter data into **Class Resource Maintenance**.		✓
10. Run **Master Schedule Builder**.		✓
11. Print the **Course Resource Sheet**. Review the master schedule lists and reports.		✓
12. Run **Load Students Into Sections**.	✓	✓
13. Review the schedule loader results using the available reports.	✓	✓
14. Re-run **Master Schedule Builder** and or **Student Loader**.	✓	✓
15. Freeze generated sections.		✓
16. Hand-schedule course requests that could not be processed by the schedule loader.	✓	✓
17. Copy the new academic year classes and students' schedules to the current academic year.	✓	✓

Figure C-2. Steps in the scheduling process.

Master Schedule Builder

The master schedule builder uses an advanced algorithm that creates a master schedule for your school based on the student course requests, room and faculty resources, and potential meeting times that you define. Please be forewarned that this feature is only a tool that will assist you in creating a master schedule for your school; it will not miraculously create a schedule. Careful and detailed planning is still a requirement for creating a master schedule that will suit your school's needs.

Requirements for Using the Master Schedule Builder and Student Schedule Loader 2

Although the master schedule builder will work for most schools, due to the wide variety of schedules that are used, we recommend that only schools that meet the following requirements use these features.

- ☑ There is a maximum of an 10-day schedule rotation.
- ☑ All section numbers (or the number that appears) after the separating punctuation mark in the section ID must be numeric.

  Examples of acceptable section numbers: 10012-01, 435.02, Eng10/121

  Examples of invalid section numbers: 10012-10A, 435.PE, Eng 10/1A1
- ☑ Variable periods by grade are not supported. If your school has created a different schedule for each grade in the **Administration Maintenance** *Periods* Tab instead of using the All option, then you cannot use the master schedule builder.
- ☑ Periods with overlapping meeting times are not supported. The master schedule builder uses only your school's periods, not times.
- ☑ Most mosaic or banded scheduled are not supported. Schools may attempt to use the master schedule builder for these schedule types and then manually correct any sections that span multiple periods.

INITIALIZATION (PART ONE)

When you are ready to begin scheduling for the upcoming academic year, you must create a "working file" through **SCHEDULING**. This process must be done for each division of your school that will be using the **SCHEDULING** module.

The **Initialization** feature (accessed through the **Maintenance** menu) is divided into five different functions. The first menu item, **Create New Academic Year**, is the only step that is required at the beginning of the scheduling process. The other four functions may be used at the beginning, or they may be used later.

Step 1: Create new academic year

Open the **Maintenance** menu and select **Initialization ▸ Create New Academic Year**. This step performs the following actions based on the items selected on the screen.

- ☑ The new academic year will be the one shown in the *Academic Year to Create* field.
- ☑ The system creates a scheduling year based on the academic year selected in the *Based on Academic Year* drop-down list. The new academic year contains an exact copy of the **Administration Maintenance** data for the academic year selected in that drop-down list. Usually, you would use the most recent academic year (*i.e.*, the current one), but if your school made some changes and decided to revert to a previous system, you might use older **Administration Maintenance** data. After the new academic year working file is created, any changes made to the current **Administration Maintenance** will not be updated in the working file; if those changes should be made to the new academic year, they must be entered manually.
- ☑ If there is a ✓ in the *Clear New Year* checkbox, then the system deletes any information in the scheduling table(s) for the new academic year. This does not affect the current academic year.
- ☑ If there is a ✓ in the *Clear Existing Course Requests* checkbox, then the system will delete any information in the student requests table for the new academic year. This does not affect the current academic year.

☑ If there is a ✓ in the *Set Scheduling Grade* checkbox, then the students' grades/forms for the working file will be established. All of your current students' next academic year scheduling grades/forms will be based on the current or next year grades/forms, depending on the setting of the *Use Next Year Grades* checkbox. If there is a ✓ in that checkbox, then the system will utilize each student's next year grade/form as their scheduling grade/form. Without a ✓, the system will reference the students' current grades/forms.

Please note that, once the **Create New Academic Year** process has been run, any students that are entered into **REGISTRAR** will not show up in any scheduling search screen until the **Update Schedule Grades** process has been re-run. This process must be run several times during the year when any new students are added to **REGISTRAR**.

Once you have entered all of the desired options, click the **OK** button to begin the process.

ADMINISTRATION MAINTENANCE

In order to properly use the builders and loaders in **SCHEDULING**, you will need to ensure that certain defaults are set in **Administration Maintenance**. The steps below walk you through this process. For more detailed information on **Administration Maintenance**, please refer to *Chapter 3: Setting Up*.

Step 2: Set up the scheduling data in Administration Maintenance

Open the **Maintenance** menu and then select **Administration Maintenance**. Select the *Periods* Tab. For each period that the builder needs to use, you must indicate that the builder should use it. Set this up by entering the correct values in the *Schedule Build?* and *Builder Block* columns.

- ☑ In the *Schedule Build?* column, place a ✓ in the checkbox corresponding to any periods that you want the master schedule builder to include in its process. Periods that contain meetings such as a break or an assembly are examples that you might not want the builder to schedule. Please note that this procedure will need to be performed for each day in the schedule rotation.
- ☑ The *Builder Block* is a sequentially assigned number that assists the schedule builder when creating the master schedule. You only need to enter a digit for the periods that have a ✓ in the corresponding checkboxes in the *Can Schedule?* and *Schedule Build?* columns.

  In order to use the builder, periods must meet on every day of the schedule rotation, although they do not need to be in the same order every day. The builder block number will need to be adjusted so that it corresponds with the same period on each day of the schedule rotation. If your school is on a rotational period schedule, there is no guarantee that double periods such as lab classes will be scheduled consecutively. Lab periods may have to be entered or adjusted using **Section Maintenance**.

The *Scheduler* Tab in **Administration Maintenance** is where you will establish screen defaults for both the master schedule builder and student loader 2. You need to establish the following information for the master schedule builder.

- ☑ You have the option of setting the teacher and room defaults here so that when the actual master schedule builder window is displayed, these default preferences are already established. For more information on these options, please refer to *Chapter 3: Setting Up*.
- ☑ The master schedule builder may use the **Period Ranges** to select a particular period in which sections should be created. <u>You must set the default information to be the first and the maximum (*i.e.*, last) periods of any day.</u>
- ☑ The builder uses the **Day Patterns** to select a set of days during which each section may meet. Place a **Y** next to the valid patterns that you want the builder to use. (Please note that the day patterns use the short abbreviation of the days; this

abbreviation must be only one character for automatic scheduling, even though the system will allow you to enter up to two characters.)

- ☑ The builder uses the **Term Patterns** to assign sections to meet during the number of terms you specify. Place a **Y** next to each pattern that you want to allow.
- ☑ In order to use the master schedule builder, you must install several runtime files on your workstation. On your workstation, you must specify the local directory in which these files are stored in the *Directory Location* field. The most common directory is C:\SCHED.

  Once a path is specified, click the **Install** button. The system will install the files on your workstation. This procedure must be performed on every workstation that will be used to run the master schedule builder or student loader. (The system will automatically do this the first time you run the master schedule builder or student loader.)

In the **Administration Maintenance** *Preferences* Tab, ensure that the following system preferences are set up with the correct information.

- ☑ *What is the default value for the Default Section Maximum Class Size?*
- ☑ *What is the default value for the Default Section Minimum Class Size?*
- ☑ *What is the default value for the Default Section Optimum Class Size?*
- ☑ *What is the default value for the Course Request Priority?*
- ☑ *When taking a course, are credits earned [I]mmediately, at the end of the [Y]ear, or each [T]erm?*
- ☑ *When creating a new Section ID from the Master Schedule Builder, how many digits should the section number be?*
- ☑ *Which program should be used for automatic scheduling?* This must be set to **2** and it may only be accessed when you are logged into **SCHEDULING** as the system administrator.
- ☑ *Should the scheduling interface be saved between loading runs?* Set this to **Y**.

INITIALIZATION (PART TWO)

Step 3: Copy courses and sections to the next academic year

Open the **Maintenance** menu and select **Initialization ▸ Copy Course/Sections to Next Year**. This step allows you to select different options for copying course and section information to the next academic year working file. If you are planning to renumber or rename your school's course directory, it is not necessary to perform this step. You may choose to copy all information from the current academic year to the next, or to exclude certain information.

First, decide what courses you would like to copy to the next year working file.

- ☑ Select the *Copy All Courses* radio button to copy all courses from the current academic year to the new academic year.
- ☑ Select the *Copy Only Courses with Students Scheduled* radio button to retrieve only those courses that have students enrolled in them during the current academic year.
- ☑ Select *Copy Only Courses where* radio button to specify the *Type*, *Status* and *Group* of courses to be retrieved.

Second, decide what sections to include in the next year working file. Please note that, if you are using the master schedule builder, you should not copy any section that you want the master schedule builder to build for you. Regardless of the choices you make in this section, only sections associated with courses that you have copied will be included in the next academic year. If a course is not copied, its sections will also be excluded.

- ☑ Select the *Copy All Sections* will copy all sections from the current academic year to the new academic year.
- ☑ Select the *Copy Only Sections with Students Scheduled* to retrieve only sections that have students scheduled in them during the current academic year.
- ☑ Select *Copy Only Sections where* radio button to specify the *Group*(s) of sections to be retrieved.
- ☑ Select the *Don't Copy Any Sections* radio button if you don't want to copy any sections to the next academic year.

Third, determine what section information to exclude.

- ☑ If there is a ✓ in the *Assigned Faculty* checkbox, then all sections that copy into the *Next Year* working file will not reference a faculty member. New faculty will have to be manually assigned through **Section Maintenance**.
- ☑ If there is a ✓ in the *Assigned Rooms* checkbox, then all sections that copy into the *Next Year* working file will not reference a room assignment. New rooms will have to be manually assigned through **Section Maintenance**.
- ☑ If there is a ✓ in the *Section Schedule (Blocks)* checkbox, then all sections that are copied into the *Next Year* working file will not reference a block (*i.e.*, meeting time). New blocks will have to be manually assigned through **Section Maintenance**.
- ☑ If class resources (maintained in **Class Resource Maintenance**) exist and you want to preserve them, there should not be a ✓ in the *Class Resources* checkbox. If you do not want them to copy to the new year, make sure that there is a ✓ in this checkbox.

Finally, click the **OK** button to begin the process. The system will copy the information you selected from the current academic year to the next one. The time that it will take for the system to run this process varies, based on how much information you have specified to copy.

The progress indicator may go through twice, the first time for course information and the second time for section information. If you chose to copy only course information, the indicator will only go through its process once.

Once the system has completed the process, you should see a message on the screen that reads, "The requested information was successfully copied."

Clear Next Year Courses and Sections

If an error was made in copying the courses or sections to the next year, you may delete all of this information and begin again. Please note that this step is <u>not</u> recommended once you have begun to enter student course requests as covered in *Step 7: Enter course requests through Student Request Maintenance*. Be certain that this is what you want to do, as it will remove <u>all</u> courses and sections from the next academic year working file.

If you decide that it is necessary to perform this function, then open the **Maintenance** menu and select **Initialization ▸ Clean Up/Reinitialize ▸ Clear Next Year Courses and Sections**. The system will prompt you with a message that reads, "Are you sure you wish to remove all of the courses, sections, and schedules for next year?" Click the **Yes** button to delete the information in the next academic year working file.

Step 4: Review and establish your master schedule for next year

If you are using the master schedule builder, proceed to *Step 5: Set up options for the master schedule builder*.

Once you have successfully copied your courses and sections to the working file, you can begin to set up any new courses that will be offered for the next academic year. Be sure to review the request priority field on the *General* Tab in **Course Maintenance** for each course. The priority indicates how the courses will be ordered when the student schedule loader is run (this procedure is covered later in the appendix in *Step 12: Run the Schedule Loader*). The lower the number, the higher the priority. You may use the Course List to review the course priorities.

If you are planning to build the master schedule yourself after you have established any new courses, begin to review your existing sections and set up any new sections that you may need. You may choose to run the Master Schedule List report to assist you in reviewing existing section information in a report format. Of course, you cannot fully create the master schedule without knowing how many students have requested each course. To do that, you will refer to *Step 7: Enter course requests through Student Request Maintenance*.

MAINTENANCE FOR MASTER SCHEDULE BUILDER

In order to automatically create sections for courses and assign rooms and teachers to these new sections, you need to verify that the necessary records have the proper options established.

Step 5: Set up options for the master schedule builder

You need to check the information in four of the maintenance functions: **Courses**, **Sections**, **Rooms**, and **Faculty/Staff**. These maintenance functions are covered in detail in *Chapter 4: Maintenance*.

Courses

In **Courses**, it is important to set up data that will be used by the master schedule builder when it creates sections. Please perform the procedures below to prepare the courses for the master schedule builder.

- ☑ The *Request Priority* is a two-digit code that indicates the order in which courses should be sorted when the student loader performs a scheduling run. Request priorities must be established before entering course requests to be used in schedule loading. Typical priorities are **1** through **5**, with 1 being the most important.)
- ☑ The *Link Code* is a two-character alphanumeric code that links courses together during schedule loading (*e.g.*, a science lecture and its lab section). Please note that this will not force the periods to be scheduled consecutively. It only ensures that, when one section is loaded for a student, the linked section will also be loaded.
- ☑ The *Subject Area* field can contain a single digit between **1** and **9**. This is an optional field that the master schedule builder can use to assign faculty members and rooms.
- ☑ In the **Course Maintenance** *Grading* Tab, edit the phase. It is important to make sure that the *Max. Class Size*, *Min. Class Size*, and *Optimal Class Size* fields are established. These are important when determining the resources for each course through **Class Resource Maintenance**.

Sections

Prior to running **Build Master Schedule**, you will need to manually create any sections that you would not want the master schedule builder to create.

Rooms

If you want the master schedule builder to select a room in which a section should meet, then you would need to set up information for each room that you want the builder to use. This information is referred to as a room resource.

If your school plans to manually assign rooms through either **Class Resource Maintenance** or **Section Maintenance**, you do not need to complete the room resource information.

- ☑ On the **Room Maintenance** *Name* Tab, enter the student capacity of a certain room in the *Capacity* field. If you do not enter a value in this field, then the system will insert the value 999.
- ☑ In order to have the master schedule builder select the rooms when creating sections, you need to specify the courses that may be taught in each room by entering the information in the fields of the *Scheduling Options* Tab in **Room Maintenance**.

  In the table on the left side of the *Scheduling Options* Tab, you must specify for each course the maximum number of sections that may be held in each room per term. When the master schedule builder is creating sections and needs to select a room for a section, it will look to this list of room resource courses to select room assignments for the section.
- ☑ The *Subject Area* field can contain a single digit between **1** and **9**. This is an optional field that the master schedule builder can use to match a room with a course.
- ☑ The *Department* field allows you to select one of the departments established in **Department Maintenance**. This is an optional field that the master schedule builder can use to create a section of a course by matching this department with those in **Course Maintenance**.
- ☑ For each room that will be used by the master schedule builder, you have the option of specifying periods when a room should not have a section assigned to it. Free time requests are optional. Up to ten free time requests may be entered for each room. Use the **Free Time** button to establish **Room Free Time**.

  Fixed free time indicates that the room absolutely must be left open for specific days, terms, or periods. The master scheduler builder will not schedule any sections in the room during those times.

  Selectable free time indicates that you would prefer that no sections be assigned to the room during the established times. If necessary, the master schedule builder may create a section for that room if the option *Override selectable free time* is selected in the **Build Master Schedule** screen.

Faculty/Staff

In **Faculty/Staff Maintenance**, you may set up your faculty for selection by the master schedule builder to teach sections. You would need to establish information for each faculty member that you want to permit the builder to select. This information is referred to as a faculty resource. If your school plans to manually assign faculty through either **Class Resource Maintenance** or **Section Maintenance**, skip all but the first of these procedures.

- ☑ You must ensure that all faculty members that will scheduled to teach sections have a ✓ in the *Active* checkbox in the **Faculty/Staff Maintenance** *Name* Tab.
- ☑ The *Department* field in the **Faculty/Staff Maintenance** *Employment* Tab allows you to select departments that have been established in **Department Maintenance**. This is an optional field that the master schedule builder can use to create a section of a course by matching the department field in **Course Maintenance**.
- ☑ On the *Scheduling Options* Tab, you would set up the possible courses that may be taught by the faculty member. Additionally, you must specify for each course the maximum number of sections per term the faculty member may teach.

  When the master schedule builder is creating sections and needs to assign a faculty member for a section, it will look to the faculty member and the resource courses to select the appropriate instructor for the section. If you want to have the master schedule builder use this faculty member based on their resources, at least one course must be specified.
- ☑ In the *Maximums* area of the *Scheduling Options* Tab, you should specify the appropriate maximum values for the faculty member. If you do not enter a value into any of these fields, the system will assume that the field's value is equal to 999.

  In the *Periods per day* field, enter the maximum number of periods per day for which the faculty member can be assigned to teach. In the *Unique courses per term* field, enter the number of different courses that the individual may be assigned to teach. In *Sections per term*, enter the number of unique sections per term that this faculty member should teach.

  In the *Contact periods per year* field, you will enter the number of periods per term that a faculty member should work with students during the academic year. The number of contact periods should be calculated by multiplying the number of terms a section meets by the number of days in the schedule rotation that it meets by the number or periods per day that it meets (figure C-3).

Contact periods per year calculation
(terms in which section meets) × (meeting times per rotation) × (periods per day)

Figure C-3. Calculation for the number of contact periods per year.

- ☑ If the faculty member has a reserved room that should not be used by any other teachers, enter that room in the *Reserved Room* field.
- ☑ The *Subject Area* field can contain a single digit between **1** and **9**. This is an optional field that the master schedule builder can use to create a section for a course based on matching additional subject areas in **Room Maintenance** and **Course Maintenance**.
- ☑ For each faculty member that should be included by the master schedule builder, you have the option of specifying times during which the faculty member should not teach. The free time requests are optional and up to ten free time requests may be entered for each faculty member. Use the **Free Time** button to establish **Faculty Free Time**.

  Fixed free time indicates that the faculty member absolutely must not be schedule to teach a section during specific days, terms, or periods. The master scheduler builder will not assign the faculty member to teach any sections during those times.

  Selectable free time indicates that you would prefer that no sections be assigned to the teacher during the established times. If necessary, the master schedule builder may create a section for that room if the option *Override selectable free time* is selected in the **Build Master Schedule** screen.
- ☑ Print the Faculty/Staff Schedule Options List. This report will allow you to review the faculty information entered on the *Scheduling Options* Tab in **Faculty/Staff Maintenance**.

COURSE RECOMMENDATIONS

Step 6: Use Course Recommendations Maintenance is optional. Courses may be entered for students in **Course Recommendations Maintenance**. These recommendations would become requests using **Convert to Request**. You do not need to enter course recommendations to create student course requests; it depends on your school's needs.

Step 6: Use Course Recommendations Maintenance (optional)

Through the use of the **TEACHER ADMINISTRATION** module or the **Faculty/Staff Community** in **MY BACKPACK**, some schools elect to have faculty members enter their recommendations for courses for each student. These course recommendations then can be converted into course requests. To use this feature, make sure the courses have been set up in the current year. You must also place a ✓ in the *Enable Course Recommendation Entry* checkbox in the **Administration Maintenance** *School* Tab for the current academic year.

Review and Edit Course Recommendations

Once the faculty members have entered their course recommendations, the data can be reviewed through **Course Recommendations Maintenance** for each student, which allows you to change faculty members' entries. You can access this function by selecting **Maintenance** in the **Recommendations** menu. For more information on how to use this maintenance function, please refer to *Chapter 7: Requests*.

You can choose to run the Course Recommendations List report. To use that report, open the **Reports** menu and select **Course Lists/Reports ▸ Course Recommendations List**. This allows you to review the course recommendations that have been entered for each student. (There is also an option to have it print one page per student with the student's address on it so that your school can mail it to each student and his or her family.)

Convert Recommendations to Requests

After reviewing the course recommendations, you will need to perform the **Convert to Requests** function. Open the **Recommendations** menu and select **Convert to Request**. You may enter a *Default Request Priority* to be used for each course request that will be created. This default is used for courses that have a blank request priority. Click the **OK** button to convert the course recommendations to student course requests.

When this process is complete, you can use **Student Request Maintenance** to confirm that the conversions were performed.

Clear Course Recommendations

When you have completed the **Convert to Requests** process and ensured that the requests appear in **Student Request Maintenance**, you will need to remove the course recommendations from the database. Do not perform this step until you are certain that the recommendations were converted to requests, because the recommendations cannot be retrieved once they have been deleted.

To clear course recommendations, open the **Recommendations** menu and select **Clear Recommendations**. The system will prompt you with a message that reads, "This will clear all of the student course recommendations currently entered in the system!" To delete the recommendations, click the **Clear** button.

COURSE REQUESTS

When you run the master schedule builder and the student schedule loader, the system uses student course requests to create the master and student schedules. Those requests can be entered as course recommendations and converted to requests, or they can be entered as course requests in **Student Request Maintenance**.

Step 7: Enter course requests through Student Request Maintenance

If you have chosen not to use the course recommendation entry, then you will enter the student course requests into the system through either of the two methods described below. Please verify that you have entered all of the course request priorities on each course prior to entering any course requests.

Student Request Maintenance by Student

This option will allow you to add, edit and delete course requests for each student. Follow the steps below to enter a course request. For more information on the windows and fields in this function, please refer to *Chapter 7: Requests*.

1. Open the **Requests** menu.
2. Select **by Student**.
3. Use the **Student Request Maintenance Search** window to select the student for whom you want to enter course requests.
4. In the **Student Request Maintenance – (** ***Student Name*****)** window, click the **New** button. This will open the **Student Request Maintenance** dialog box.
5. Enter the *Course ID* for the course that the student is requesting. If you do not know it, you can click the **Search** button and select the course from the **Course Search** dialog box.
6. Complete the other fields on each tab in this dialog box as necessary.
7. Click the **OK** button to save this course request. You can edit or delete these requests as necessary by using the appropriate buttons in the **Student Request Maintenance – (*Student Name*)** window.

Student Request Maintenance by Group

If you have a group of students that will be required to take the same course, you can use this function to create student requests for them all.

1. Open the **Requests** menu.
2. Select **by Group**.
3. To assign a course request to a group of students, click the **Group** button. This opens the **Query List** dialog box.

4. If the query that you need to use exists, select it and click the **OK** button. If it does not, then you will need to create one first. An example query is shown in figure C-4. For more information on building your own queries, please refer to *Appendix A: Building Queries*.
5. In the **Student Requests by Group** dialog box, click the **New** button.
6. Enter the course ID that you would like to request for the students retrieved by the query. If you do not know the ID, click the **ID Search** button and select the course from the from the **Course Search** dialog box.
7. Repeat steps 5-6 until all the courses that you want to request for the students have been entered. If one is added by accident, you can use the **Delete** button to remove it from the list of courses.
8. Once you have entered each of the course requests, click the **OK** button. When the process is complete, the students retrieved by the selected query and the courses assigned to them will be listed in the **Student Course Requests by Group** window.
9. In that window, review the data that have been entered for all students. Remove any unwanted course requests by highlighting the appropriate request and clicking the **Delete** button from the *Entries in this Group* area. Only if the entire batch were incorrect would you use the **Delete** button in the *This Group* area.
10. Once you have ensured that all of the student requests are correct, click the **Update** button to add the requests to the students' course request selections.

And/Or	Table Name	Field/Formula Name	Operator	Value
OR	RG_STUDENT	STUDENT_GROUP	=	STUDENT
AND	RG_STUDENT	SCHED_GRADE	=	10

Figure C-4. Query criteria to retrieve next year's tenth graders.

Step 8: Review course requests using the available reports

If you are using the master schedule builder, please proceed to *Step 9: Enter data into Class Resource Maintenance*.

When you have entered all of the student course requests, there are a few reports that you can run to display the information for review. Each report and a brief summary of its purpose are listed below. For further information, please refer to *Chapter 10: Reports*. The reports shown in figure C-5 are located under **Course/Lists Reports** in the **Reports** menu unless otherwise noted.

Once all of the student course requests have been entered, it will be necessary to determine the number of sections that will be needed for each course. Please use the Course Requests Tally report to determine this number.

Prior to running the student schedule loader (if you have built your schedule manually), it is important that you perform the review described below. It will aid you in running the schedule loader successfully.

- ☑ Make sure that all courses that need a course request priority have been set up with one. This was probably done in *Step 7: Enter course requests through Student Request Maintenance*. Since it is integral to ensuring that courses are assigned correctly, however, we recommend that you make sure it is correct.
- ☑ Ensure that each of the sections have the following in **Section Maintenance**: a section number that is three digits or fewer in length; a minimum, optimum, and maximum value on the number of students to schedule into each section; a meeting time for each day you plan to offer the section
- ☑ Make sure that there are sections for all courses that students have requested. Ensure that there are enough sections to accommodate the number of requests. You can do this by running the Pre-Schedule Edit report (located under Course/Lists Reports). This report will display: the number of sections created (Total Sections), the sum of all the maximum numbers of students for the sections (Total Seats), and the number of student requests (Total Requests).

  The difference between these last two numbers is shown in the *Diff.* column. If it is a positive number, then you have enough seats for the number of requests. A negative number indicates that you will need to review your sections to see where the section maximums need to be increased or where additional sections may need to be added.

Report	Description
Student/Course Request List	This report can be run either by student or by course request to indicate the course requests that have been entered into the system. *By Student* will list each student and his or her course requests (this report must also be sorted by RG_COURSE_REQ.SORT_KEY). *By Course* lists each course and the students that have requested it (this report must be sorted by RG_COURSE_REQ.COURSE_NAME or COURSE_ID in addition to selecting the *By Course* radio button).
Student/Course Confirmation List	This report prints each student's primary course requests and any first and second alternate course requests that have been entered into the system.
Course Request Tally Report	This report will display each course and indicate the total number of student course requests. It also breaks the total student course requests down by gender and grade level.
Conflict Matrix	This report is located under Conflict Reports. It will help in determining where not to schedule classes when establishing your master schedule. Along with the Conflict Matrix report, you may also look at the Potential Conflicts Query that is located under the **Query** menu. This will allow you to select two or more courses to see how many students have requested those courses.

Figure C-5. Reports that can be used to review student requests.

CLASS RESOURCE MAINTENANCE

The **Class Resource Maintenance** function is used to define instructions for the master schedule builder regarding how many sections to create and how to assign rooms, teachers and meeting times. You must do this for each course for which you want the master schedule builder to create sections.

Before entering data into **Class Resource Maintenance**, it will be necessary to research and prepare the following information.

- ☑ The number of sections that are needed for each course
- ☑ The room numbers where each section will be taught (if you entered this information during *Step 5: Set up options for the master schedule builder*, this has already been done)
- ☑ The faculty members that are going to teach each section (if you entered this information during *Step 5: Set up options for the master schedule builder*, then this is complete)

Step 9: Enter data into Class Resource Maintenance

In this step, you will need to enter the information you have collected above. The master schedule builder will use this information for creating class sections. Each resource item is a set of sections that you want to create that share a feature (*e.g.*, a teacher). In order to enter a class resource, perform the following procedure.

For a detailed explanation of the tabs, fields and buttons in **Class Resource Maintenance**, please refer to *Chapter 4: Maintenance*.

1. Open the **Maintenance** menu and select **Enter Class Resources**.
2. Select a course to edit from the **Class Resource Maintenance Search** window.
3. In the **Class Resource Maintenance** window, click the **New** button to enter a new resource or **Edit** to edit an existing resource.
4. In the *Section* Tab, enter the number range of sections for this course. This will be used to create sections that share features for this course.
5. Review the value in the *Max Seats* column for the section and adjust it if necessary.
6. Enter the generation priority to be used for the generation of sections for this course. The system will take the courses that are the most restrictive (lowest number) and attempts to schedule those first, followed by the least restrictive courses (highest number).
7. Choose one of the *Each section will meet* radio buttons to determine the number of terms during which each section of this resource will meet. You can select the *for* radio button and enter a number of terms, or you can choose the *term* radio button to specify a particular term pattern.

8. Select the appropriate *To teach these sections* radio button. Choose *select no one to teach these sections* if no faculty member should be assigned. Select *based on resource courses, subject area, or department* if the master schedule builder should use the information that you entered in the **Faculty/Staff Maintenance** *Scheduling Options* Tab. If only one teacher will be assigned to teach this course, select the *select this teacher* radio button and then enter the faculty member's ID in the adjacent field.
9. In the **Class Resource Maintenance** *Meeting Times* Tab, enter the information that the master schedule builder will use to assign meeting times and rooms to sections. You may assign up to eight different meeting times.
10. Repeat steps 2 through 9 for all courses.

BUILD MASTER SCHEDULE

If you are using the master schedule builder to create your school's schedule, follow steps 10 and 11. If you are not using this feature, please proceed to step 12.

Step 10: Run Master Schedule Builder

Once all of the information has been entered into the system, open the **Requests** menu and then select **Build Master Scheduler**. You can also access this option by clicking the **Automatic** button on the toolbar. If necessary, make changes to the options in the **Schedule Sections** dialog. Please refer to the automatic scheduling section of *Chapter 6: Requests* for a detailed description of these options. Click the **OK** button to run the master schedule builder.

Step 11: Review the master schedule lists and reports

When the master schedule builder completes, it will print a master schedule list for you to review. Ensure that the sections created match the class, faculty, and room resources established in *Step 5: Set up options for the master schedule builder* and *Step 9: Enter data into Class Resource Maintenance*.

STUDENT SCHEDULE LOADER

Once courses, sections, and students' requests have been created for the next academic year, you are ready to run the automatic scheduler for student requests. The **Load Students Into Sections** feature offers several scheduling options and these can be run multiple times.

Step 12: Run the Schedule Loader

Prior to running the student schedule loader, please make sure that you have completed *Step 8: Review course requests using the available reports*, described earlier. Additionally, you should refer to *Chapter 7: Requests* to look for any additional requirements for running your school's student schedule loader.

Open the **Requests** menu and select **Load Students Into Sections**. You can also access this function by clicking the **Automatic** button  on the toolbar. Please review the parameters on the screen, which are further described in *Chapter 7: Requests*. Which section you read, *Schedule Loader One*, *Schedule Loader Two*, or *Schedule Loader Three*, depends on which one your school uses. Once you have made sure that all parameters have been set properly, click the **OK** or **Build** button to begin the scheduling run.

Step 13: Review the Schedule Loader results through Reports

Upon completion of the scheduling run, you will need to run some reports to assist you in determining its success. Below is a list of reports that will be helpful. The reports shown in figure C-6 are located under the Course/Lists Reports feature in the **Reports** menu.

Report	Description
Student/Course Request Statistics	This report will provide you with a running percentage of Full, Partial and Unscheduled students, broken down by grade/form. You can review this to see if specific grades are not being scheduled for some reason or why students may be only partially scheduled.
Student/Course Request List	This report, which you may have run prior to running the schedule loader, can be run again with the *Show Request Status* and *Show Statistics* checkboxes selected. It will then print out the scheduling codes used by the loader to indicate why a request was not scheduled, as well as the percentage loader for each course.
Course Schedule Tally Report	Similar to the Course Request Tally report, this report will display each course and indicate the total number of students scheduled for each section. It also breaks down the students scheduled by gender and grade/form.

Figure C-6. Reports that can be used to review schedules.

Step 14: Re-run Master Schedule Builder and/or Student Loader

If necessary, re-run the master schedule builder and student loader until you have achieved the desired results:

- ☑ *Step 10: Run Master Schedule Builder*
- ☑ *Step 11: Review the master schedule lists and reports*
- ☑ *Step 12: Run the Schedule Loader*
- ☑ *Step 13: Review the Schedule Loader results through Reports*

It is important to note that the ability of the student schedule loader to fully schedule every student depends on the complexity of the master schedule, the number of available sections, and the meeting times of the sections. The objective of these tools is to build as many sections and student schedules as possible before beginning the manual scheduling process described in *Step 16: Hand schedule course requests*.

Step 15: Freeze generated sections

Once you have run the master schedule builder and you are happy with the results, you need to update all of the generated sections in **Section Maintenance** so that the master schedule will become permanent.

Open the **Requests** menu and select **Freeze Generated Sections**. After you run this function, sections that have a ✓ in the *Generated* checkbox in the **Section Maintenance** *Schedule* Tab will be flagged as frozen.

MANUAL SCHEDULING

Once you have used the student schedule loader to maximize the number of student schedules, you will probably have to do some manual scheduling to complete the entire scheduling process. For more information on the functions described in this section, please refer to *Chapter 7: Requests*.

Step 16: Hand schedule course requests

All manual scheduling of course requests and schedules must be done through the **Requests** menu, using the **Schedule Requests by Student** and **Schedule Requests by Course** options. You can also access these options by clicking the **Automatic** button on the toolbar. Any scheduling done using the functions under the **Scheduling** menu will not update the student requests with the correct schedule status and thus cause inaccuracies in your data.

Schedule Requests By Course

Manually scheduling by course will assist you in placing students into appropriate sections, course by course.

1. Open the **Requests** menu.
2. Select **Schedule Requests by Course**.
3. Use the **Course Request Scheduling Search** window to select the course for which you want to schedule student requests.
4. In the **Course Request Scheduling by Course – (** ***Course Name*****)** window, students who have requested the course but are not scheduled for it will be shown in the left side of the window. Available sections are shown in the lower portion of the window.
5. Highlight a student to select him or her on the left, then select the section for which to schedule the student. You will notice that, when you highlight a student's name, his or her schedule will be displays in the top right pane. If the student is already schedule for the course, the name of the section in which he or she is enrolled will be displayed in blue in the lower portion of the window.
6. Click the **Schedule** button.
7. To remove a student from a section, click on the section in the student's schedule pane and then click the **Unschedule** button. To remove a student from all classes, use the **Unschedule All** button.

Schedule Requests By Student

Manually scheduling by course will assist you in placing students into appropriate sections, student by student.

1. Open the **Requests** menu.
2. Select **Schedule Requests by Student**.
3. Use the **Student Request Scheduling Search** window to select the student for whom you want to schedule requests.
4. In the **Course Request Scheduling by Student – (*Student Name*)** window, courses the student has requested will be shown in the left side of the window. To see what sections are available for a course that needs to be scheduled, highlight the course. Any available sections will then be shown in the lower portion of the window.
5. In the left side of the window, select the course for which a student needs to be scheduled. Select a section in the lower portion of the window. You will notice that the schedule of the highlighted student will be shown in the upper right-hand table. If the student is already scheduled for a section, the section will appear in blue in the lower portion of the window.
6. Click the **Schedule** button.
7. To remove a student from a section, highlight the section on the right and click the **Unschedule** button. To remove a student from all classes, use the **Unschedule All** button.

The **Auto** *button in* **Course Scheduling by Student** *can be used to have the system attempt to schedule any unscheduled course requests. The system will select different potential schedules for the student. It will not create partial schedules.*

1. Click the **Auto** button.
2. Place an **N** next to any course that you do not want the system to schedule.
3. Make sure that the *Override MAX Seats for Sections* is set correctly.
4. Once completed schedules appear, use the scrollbar at the bottom to move through the list of possible schedules.
5. Click the **Select** button to choose the schedule you want for the student.
6. If the system cannot find anything, consult your master schedule and manually create a schedule for the student.

COPY CLASSES/SCHEDULES TO THIS YEAR

Upon the completion of the scheduling process, you will need to move the master schedule and student schedules into the current year. This can be done only after the **End-of-Year** process is performed in **REGISTRAR**.

Step 17: Copy classes and student schedules to the current year

This is the final step to complete the scheduling for the next academic year. Course, section and student schedules contained in the next year working file will now be copied into the current schedule for **REGISTRAR**, replacing the courses, sections and schedules that existed. If you have multiple schools, this step must be run for each school.

1. Before you perform this procedure, make sure that you have a current, restorable backup of the database.
2. Open the **Maintenance** menu.
3. Select **Move Schedules to This Year**.
4. In the **Move Schedules to This Year** window, select whether you want to copy everything in the working file or only those courses and sections where students have been scheduled. For complete descriptions of the options in this window, please refer to *Chapter 7: Requests*.
5. When you are ready, click the **OK** button.
6. The information you have selected will be copied to the current year in **REGISTRAR**, and then the information in the **SCHEDULING** working file will be deleted.

After completing *Step 17: Copy classes and student schedules to the current year*, all scheduling changes and reports can be performed in **REGISTRAR** as well as **SCHEDULING**. You will notice that the top of your screen will state This Year and Next Year have the same academic year; this is the correct format for scheduling until you perform the initialization for the new next scheduling year using the **Initialize ▸ Create New Academic Year** function. All work in the schedule from now on must be done in This Year until scheduling for the next academic year begins.