Paperless Advisement of CM Students via Electronic Spreadsheets

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This article presents a paperless academic advising tool based in password-protected electronic spreadsheets programmed with Microsoft Excel 2007. The proposed tool is presently employed to advise undergraduate students pursuing a four-year Construction Management (CM) degree. It presents several advantages with respect to the former paper-based advising procedure. E.g., the suggested course sequence and all course prerequisites are directly visualized in a flow-chart type scheme.   All curriculum information (main and alternative elective courses, credit hours, minimum passing grades, core curriculum areas, etc.) is also presented in the worksheets.   A graduation clearance form is automatically generated by extracting information from the main worksheet. Students input data regarding their courses, their grades and attended terms. Advisors use this information to suggest primary and alternate courses for next academic term and for the term after next. This only requires the use of four numbers (1-4). Each semester, information can be swiftly updated during each advising session. All advisement information is stored in a computer server accessible to all faculty advisors and administrative personnel.   A second worksheet has been generated and programmed using a non-native Excel function to extract information from all students' post-advisement worksheets and estimate student demand for CM courses in future academic terms.

Key Words: academic advising, CM program, electronic spreadsheets, Microsoft Excel 2007

Introduction

Presently, academic advisement of undergraduate students is implemented by numerous institutions of higher education across the USA and the world. Six years ago, the United Nations Educational, Scientific, and Cultural Organization, published a document (UNESCO, 2002) where it lists the following purposes, or functions, of academic advising:

1. To assist students in developing educational plans that are consistent with their life goals.
2. To provide students with accurate information about academic progression and degree requirements.
3. To assist students in understanding academic policies and procedures.
4. To help students access campus resources that will enhance their ability to be academically successful.
5. To assist students in overcoming educational and personal problems.
6. To identify systemic and personal conditions that may impede student academic achievement and developing appropriate interventions.
7. To review and use available data about students academic and educational needs, performance, aspirations and problems.
8. To increase student retention by providing a personal contact that students often need and request, thereby connecting them to the institution.

The National Academic Advisement Association (NACADA) summarizes the concept of academic advising as: "Academic advising, based in the teaching and learning mission of higher education, is a series of intentional interactions with a curriculum, a pedagogy, and a set of student learning outcomes. Academic advising synthesizes and contextualizes students' educational experiences within the frameworks of their aspirations, abilities and lives to extend learning beyond campus boundaries and timeframes." (NACADA, 2006).

The above list and statements are general in nature and tailoring occurs at the institutional level. For example, there are several organizational models and delivery systems. According to King, the centralized model, where all advising is performed in a single unit or Advisement Center, is more typical of two-year institutions. On the other hand, the Faculty-Only model, where advising is exclusively performed by faculty members, and the Split Model, where advising is performed by centers and by faculty members, can be found at both, two- and four-year institutions (King, 2002). Also, the scope, role, and responsibilities for academic advising may differ across institutions. In this article, the authors have attempted to resolve advising difficulties experienced at one university.

In particular, the authors' institution presents the following advising philosophy: "A student's satisfactory completion of a degree program is his or her own responsibility. Any system of advisement must reflect students' freedom of choice and their right to make their own decisions. It is the institution's responsibility to provide guidance, information, and assistance to the student whenever possible. It is the institution's responsibility to see that advisors have accurate information, are concerned about students, and are accessible to students on a reasonable basis. The institution also has responsibility to provide the necessary support to those faculty members who choose advisement as an area of service and to see that good advisement is appropriately included in merit considerations. Georgia Southern accepts the philosophy that faculty members should be involved in student advisement since they provide a necessary academic orientation to the process. It is important that students have as much direct contact with faculty as possible and advisement is a particularly individualized avenue of communication. Advisement also provides the faculty member with a vital area of service."

Until recently, the authors' academic unit had a paper-based advising system that presented numerous drawbacks. During each advising period, students had to complete certain paperwork. They filled in curriculum sheets with information on courses already taken, and filled in registration forms with advisor-suggested courses. Due to students' errors or omissions, advising mistakes often occurred. Also, due to poor course selections and the non-satisfaction of required prerequisites, students often found themselves in gridlock situations unable to register in enough required courses to attain full-time student status. In turn, these problems and their solutions required additional time dedication from faculty members and administrators. Advisors' suggestions were recorded in paper (forms) and kept in a special location, but their accessibility presented a problem. A special location, accessible to all faculty advisors and administrative personnel had to be dedicated to store them. Even though these records were available, they did not allow for a quick estimation of students' future course demands.

Because of the challenges faced by faculty in terms of teaching, scholarship and service, the ability to streamline the advising process warranted further exploration. The authors of this paper have worked together to prepare a system that serves to improve the efficiency of advising, the continuity and portability of a student's advising records, and the use of those records to estimate course demands for subsequent academic terms. In this regard, herein, they present an advisement procedure characterized by the use of two password-protected electronic spreadsheets. One of them targets advisees who prefer a visual approach to follow their curriculum progress and one that is non-graphic based, but clearly shows the progress towards graduation.

Former Advising Procedures

Presently, the authors are affiliated with a CM program that is part of a Technology Department in a College of Science and Technology (COST). This college uses the Split Model of advisement. That is, freshman and sophomore students are advised at the COST Advising Center by professional counselors and faculty members; and junior and senior students, who have already declared their CM major, are advised only by CM faculty members.

This CM program consists of eight full-time faculty members and serves, approximately, 500 CM students. Consequently, each faculty advisor is assigned sixty-three advisees, approximately. However, this number fluctuates from semester to semester. Data from Fall 2006 to Fall 2008 shows that the number of advisees has ranged from 60 to 100 per faculty member. Advisors are instructed to dedicate 15 to 20 minutes to each advisee during scheduled advising sessions. In an academic semester, this represents 20 to 34 hours of contact time of advisee-advisor interaction. However, not all students attend their advising sessions. In each major semester, Fall or Spring, advisement is concentrated in two weeks, but it continues until the end of the semester. This is because not all students attend their scheduled appointments and new students transfer into the program.

In the former system, a typical 15-to-20-minute advisement session included the following six tasks:

1. The student visited with the advisor who retrieved the student's hard copy file containing the corresponding handwritten advisement records.
2. The student and advisor discussed the courses already taken, the ones that were currently being taken, and identified the ones needed for the next academic term. For this, students were required to fill in the curriculum sheet shown in figures 1 and 2. Alternatively, they were asked to update a similar sheet kept in their files, but this consumed precious advising time and advisors preferred that students complete a new curriculum sheet before each advising session.
3. With the above information, the advisor understood the student's current position in the CM curriculum and suggested primary and alternate courses for the next term. This was done to avoid prerequisite conflicts and to minimize required time to attain graduation.

CURRICULUM SHEET

GEORGIA SOUTHERN UNIVERSITY
Allen E. Paulson College of Science & Technology
CMCET Department
Construction Management Program (CM Major)

Student Name:_____

Program Entry Date:_____

Completion of all requirements and a minimum of **2.0 GPA** are required for graduation.

FALL
1st Year

		Sem Hrs	Gr
***CISM 1110	Computer Applications	1	
***CISM 1120	Computer Concepts	2	
***MATH 1112	Trigonometry(1113,1441)	3	
*ENGL 1101	Composition I	3	
POLS 1101	American Government	3	
****HIST 1112	World History	3	
NNN 1210	University Orientation	1	

* A minimum grade of C is required for all Area A courses.
**ENGL 1101 is a pre-req for ENGL 1102.
***A pre-req for one or more CM major courses.
****HIST 1112 is a pre-req for IDS 2210.
NNN 1210 is not required for transfer students with 30+ hrs

SPRING

		Sem Hrs	Gr
TCM 1120	History of Arch Constr	2	
TCM 1130	Arch Graphics/Print Read	3	
ENGL 1102	Composition II	3	
*COMM 1110	Public Speaking	3	
TCM 1131	Building Materials/Systems	3	
KINS	Physical Activity	1	
HLTH 1520	Healthful Living	2	

* ENGL 1101 is a pre-req for COMM 1110.

2nd Year

		Sem Hrs	Gr
TCM 2233	Construction Surveying	3	
*PHYS 1111	Principles of Physics	3	
*PHYS 1113	Physics Lab	1	
WRIT 2130	Technical Comm	3	
**	World Literature	3	
***ECON 2105	Econ in a Global Soc	3	
KINS	Physical Activity	1	

**ENGL 2111 or ENGL 2112
*PHYS 1111/13 is a pre-req for some CM major courses.
***ECON 2105 is a pre-req for some CM major courses.

		Sem Hrs	Gr
STAT 2231	Intro to Statistics	3	
*	Trad Science & Lab	4	
HIST 2110	U.S. History: Comp Survey	3	
**ACCT 2030	Survey of Accounting	3	
TCM 2240	Intro to Structures	4	
IDS 2210	Turning Points	1	

*PHYS 1111/13 or GEOL 1121/10 (recommended) or
ASTR, BIOL, CHEM
**A pre-req for one or more CM major courses.

3rd Year

		Sem Hrs	Gr
TCM 3230	Wood Structures	3	
TCM 3231	Steel Structures	3	
TCM 3232	Concrete/Masonry Struc	3	
	Business Elec (area F)	3	
*	Env Science & Lab	4	

*PHYS 1149 or GEOL 1330/10 (recommended) or
BIOL, CHEM

		Sem Hrs	Gr
TCM 2241	Mech & Elec Equip Sys	4	
TCM 3330	Quantity Estimating	3	
TCM 3331	Construction Finance	3	
MGNT 3130	Mgmt Organizational Behavior	3	
	Area E Elective	3	

Area E Elec: GEOG 1130 (recommended), ANTH, PSYC, SC

Figure 1: Former Curriculum Sheet – Partial view of its front side

CONSTRUCTION MANAGEMENT MAJOR COURSE REQUIREMENTS & PREREQUISITES

COURSE NO.	COURSE NAME	PREREQUISITES
PHYS 1111	General Physics I	Trigonometry
PHYS 1113	Physics Lab I	Prerequisite or Corequisite: General Physics I
TCM 1120	History of Architecture	None
TCM 1130	Architectural Graphics & Print Reading	CISM 1110/1120
TCM 1131	Building Materials & Systems	None
TCM 2233	Construction Surveying	Trigonometry, Architectural Graphics & Print Reading
TCM 2240	Introduction to Structures	General Physics I with Lab
TCM 2241	Mech & Elec Equip Systems	General PHYS I with Lab, Architect Graph & Print Read
TCM 3230	Wood Structures	Arch Grap & Print Read, Intro to Structures
TCM 3231	Steel Structures	Arch Grap & Print Read, Intro to Structures
TCM 3232	Concrete & Masonry Structures	Arch Grap & Print Read, Intro to Structures

Figure 2: Former Curriculum Sheet – Partial view of its back side

4. The student filled in a registration form (original and carbon copy) with personal information and with the primary and alternate courses suggested by the advisor.
5. The advisor used student's personal information (last name and student identification number) to obtain the registration code (number) that this particular student needed to register online. This number was also written down in the registration form.
6. The student's file was updated and the carbon copy of the registration form was added to the student's advising records.

These six tasks needed to be performed during a scheduled 15-to-20-minute time slot, otherwise the following advisees were delayed. To avoid delays, students were requested to arrive at their advising session prepared. That is, they should have studied and been already familiar with the CM curriculum, the suggested sequence of courses, the prerequisite requirements, and should have filled in all their personal information in the corresponding registration form by hand.

The above procedure presented several drawbacks:

(a) Even though students were reminded, on numerous occasions, about the required preparation before attending their advisement appointment (via various media, such as mass emails, in-class announcements, banners, posters, flyers, etc.), there were always a large percentage that arrived to their appointments partially prepared or completely unprepared. Curriculum sheets were incomplete or erroneously completed. Usually, the totally unprepared students were required to reschedule their appointments.
(b) Many students had completed their curriculum sheets, but had minimum or nil knowledge of course prerequisites or of the CM curriculum in general. Possibly, a factor contributing to this situation was the fact that prerequisites were not easily visualized. They were just listed for each course on the back of the curriculum sheet. This did not facilitate the identification of critical courses that needed to be taken before others could be taken.
(c) Others students were in a gridlock situation. That is, due to unsatisfied prerequisites, they were not able to register into enough required courses to attain full-time student status.
(d) All cases described in points (a), (b), and (c), required special attention and delayed the advisement schedule for that particular day. In many instances, the required advisement time was more than the planned 15-20 minutes and students needed to wait.
(e) In addition to regular advisement, several junior and senior students visited their advisors to complete their graduation clearance form. This was not a simple task because the software used by the institution to control the completion of all required curriculum areas was misplacing courses in wrong areas. Therefore, faculty advisors were asked to fill in an online form to inform needed corrections for each advisee requiring clearance for graduation.
(f) The advisement files of each student were gradually increasing in size. At least two sheets of paper were added per advisement session. Also, in certain cases, pages containing explanatory notes needed to be added. However, many curriculum sheets contained partial information or erroneous information.
(g) Several students reported advisement problems. In one particular case, a student took a course he had already taken.--He realized it after attending class for one full week. The problem was that he did not mark that course as already taken in his curriculum sheet. So, the advisor recommended he take it.
(h) The location of advisement files was also a problem. They were needed by faculty advisors and also by administrative personnel, so they needed to be kept in an orderly manner and in an area with common access.

Proposed Paperless Advising Procedure

Advisement Workbook

In an attempt to improve the former process, a new procedure is proposed. It still employs the face-to-face advising interactions, but uses two linked programmed worksheets in a single workbook (MS Excel 2007). They are used to facilitate student understanding of the CM curriculum, to standardize advising information, and to make the advising data more portable. The first worksheet shows all required courses to attain a Bachelor's degree in construction management. They are ordered according to the official suggested sequence. Also, this spreadsheet shows arrows

to indicate all course prerequisites in a flow-chart fashion. That is, all prerequisites are directly visualized on it. This is presented in figure 3. The second worksheet, in figure 4, is a graduation clearance form linked to the first worksheet. Its purpose is explained below. Most of the data is input in the first worksheet and is automatically sent to populate the second one.
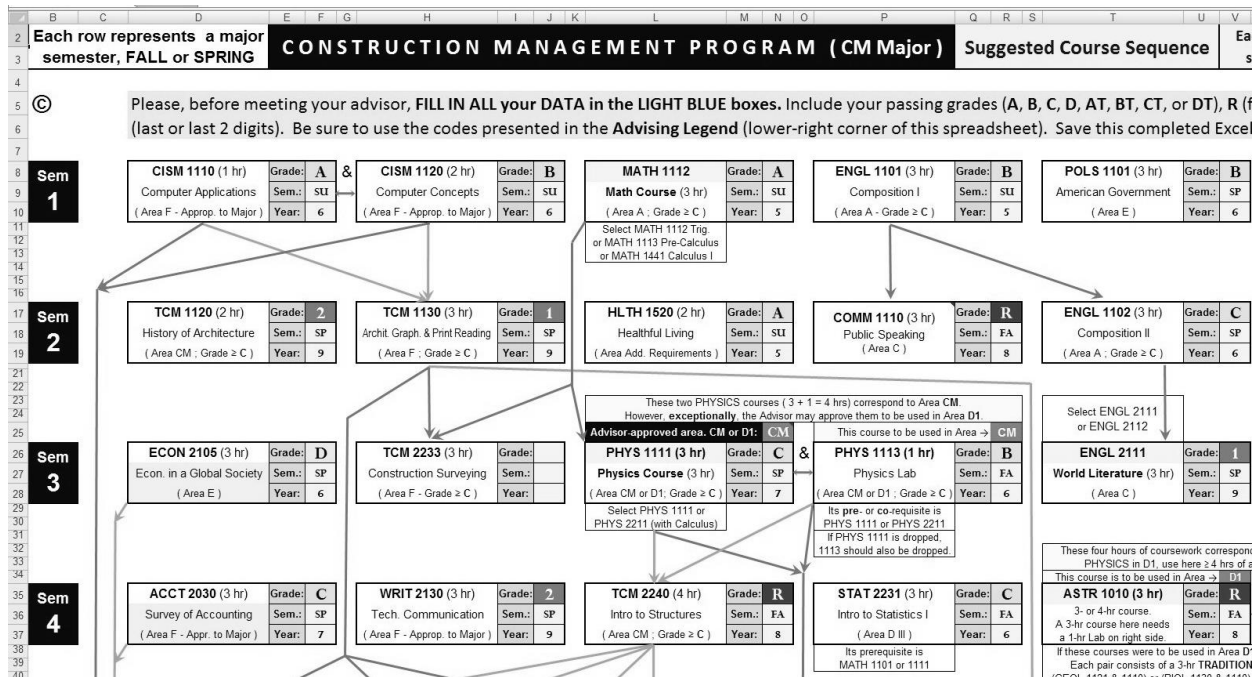

Figure 3: Partial view of new advisement worksheet with course sequencing and arrows indicating prerequisites

Students fill in the new advisement worksheet (figure 3) with their personal and course data (grades, attended semesters and years). To facilitate advisors' course suggestions, the cells containing students' grades are conditionally formatted. Passing grades (**A**, **B**, and **C**) are shown with a green background, passing **D** grades are in yellow and non-passing grades (certain **D**'s and all **F** grades) are shown in red. The courses that students are currently taking, or registered in, are indicated with an **R** grade, in a purple background. Suggested primary courses are shown with a grade equal to one (**1**), in blue. Suggested alternate courses are shown with a grade equal to two (**2**), also in blue. Similarly, suggested primary and alternate courses for the term after next are shown with grades equal to three (**3**) and four (**4**), respectively, both in brown. The automatic color coding and the prerequisite arrows facilitate the visual selection of appropriate courses for the following academic terms. It is expected that this feature will help prevent or minimize gridlock situations where, due to unsatisfied prerequisites, students cannot register into required courses and delay their graduation times. This worksheet substitutes the front side of the former curriculum sheet (figure 1).

The second worksheet (figure 4) extracts information from the first one (figure 3) and places courses, grades, and attended terms, in the appropriate curriculum areas. That is, as students complete the first worksheet, the graduation clearance sheet is populated automatically. The main purpose of this worksheet is to properly locate successfully taken courses into the corresponding curriculum areas. This facilitates the clearance for graduation process performed by personnel in the Registrar's office. At the same time, it saves faculty advisors' time. There is no longer the need to use an online form to correct the location of courses. This spreadsheet contains all the information that Registrar's office personnel need to perform clearance for graduation procedures.

The new worksheets are password protected. Only cells accepting data are accessible by users. Access is denied to all other cells. This is required to avoid changes and preserve the cells containing programmed statements.

This Fall semester, one week before the start of the advising period, a blank advisement workbook was electronically mailed to all CM students. It contained minimum instructions on how to fill in the corresponding data. It was required to be sent back to the departmental secretary fully completed and renamed as

LastnameFirstname##.xlsx, where ## are the last two digits of the student's identification number. As these files were received back, the secretary stored them in a computer server accessible by all advisors and other departmental administrative personnel. During the advisement weeks, each advisor accessed the files of their individual advisees and marked the suggested courses for Spring and Summer 2009. Also, students' registration numbers were input in those files. Then, the files were stored in a designated post-advising folder at the same computer server.

In particular, during these two advisement weeks, one of the authors advised 50 of his 63 advisees. This represents 79% as opposed to a 48-52% range that occurred in the last four semesters using the old advising system. This may indicate that students felt more attracted to this new system or found it more useful than the previous paper-based one. In fact, numerous verbal comments were positive about the new worksheets. However, the new process seems to be only slightly faster than the previous one. This may be due to the fact that the old process is being compared against the first implementation of the new one. During this first time, numerous students' worksheets required needed corrections before advising could be performed. This consumed time. It is expected that subsequent advisement sessions will be faster.

Bachelor of Science in Construction
Graduation Clearance Sheet

NNN University
NNN College of NNN
Department of Construction Management

Student Name: FIRST M. LASTNAME

Student Number: 900999999

Program Entry Term → SUMMER 2005

Core Curriculum Area A - Essential Skills (9 hrs required)				
("C" or better grade required for all Area A courses)				
Course Number & Name	Hrs.	Sem	Year	Grade
ENGL 1101 - Composition I	3	SU	5	B
ENGL 1102 - Composition II	3	SP	6	C
See[1] MATH 1112	3	SU	5	A

[1] MATH 1112 Trig. or MATH 1113 Pre-Calculus or MATH 1441 Calculus I.

Core Curriculum Area B - Institutional Options (4 hrs required)				
Course Number & Name	Hrs.	Sem	Year	Grade
HIST 1112 - World History	3	SU	6	C
IDS 2210 - Turning Points	0	SU	9	3

Core Curriculum Area C - Humanities & Fine Arts (6 hrs require)				
Course Number & Name	Hrs.	Sem	Year	Grade
See[2] ENGL 2111	0	SP	9	1
COMM 1110 - Public Speaking	0	FA	8	R

[2] ENGL 2111 or ENGL 2112 (World Literature)

Core Curriculum Area D - Science, Math, Tech. (11 hrs require)					
Sect.	Course Number & Name	Hrs.	Sem	Year	Grade
D1,	ASTR 1010 (3 hr)		FA	8	R
see[3]	ASTR 1211 (1 hr)		FA	8	R
D2,	GEOL 1330 (3 hr)		SP	9	1
see[4]	GEOL 1310 (1 hr)		SP	9	1
D3	STAT 2231 - Intro to Statistics	3	FA	6	C

[3] (GEOL 1121 & 1110) or (BIOL 1130 & 1110) or (ASTR 1010 & 1211)
or (ASTR 1020 & 1211) or (CHEM 1140) or (CHEM 1145).
Or, if exceptionally approved by Advisor, PHYS may be used in sub-area D1
[4] (GEOL 1330 & 1310) or (BIOL 1230 & 1210) or (CHEM 1040) or (PHYS 1149

Core Curriculum Area E - Social Science (12 hrs required)				
Course Number & Name	Hrs.	Sem	Year	Grade
ECON 2105 - Econ in a Global Society	3	SP	6	D
HIST 2110 - US History	3	SP	6	B
POLS 1101 - American Government	3	SP	6	B
See[5] PSYC 1101	0	SU	9	4

[5] GEOG 1130 or ANTH 1102 or PSYC 1101 or SOCI 1101.

Core Curriculum Area F - Courses Approp to Major (18 hrs req')				
Course Number & Name	Hrs.	Sem	Year	Grade
ACCT 2030 - Survey of Accounting	3	SP	7	C
CISM 1110 - Computer Applications	1	SU	6	A
CISM 1120 - Computer Concepts	2	SU	6	B
TCM 1130 - Arch Graphics & Print Reading	0	SP	9	1

Additional Requirements (6 hrs required)				
Course Number & Name	Hrs.	Sem	Year	Grade
See[7] NNN 1210	1	SU	5	C
HLTH 1520 - Healthful Living	2	SU	5	A
See[8] KINS 2310	0	FA	8	R
	0	SP	9	1

[7] FYE 1220 (2 hr) or old NNN 1210 (1 hr) . Not req'd for transfer students with ≥30 h
[8] Two KINS - Physical Activity Courses (one credit-hour each).

CM Major Course Requirements (65 hrs required)				
("C" or better grade required for all TCM Courses and PHYSICS)				
Course Number & Name	Hrs.	Sem	Year	Grade
See[9,10] PHYS 1111 (3 hr)	3	SP	7	C
See[10] PHYS 1113 (1 hr)	1	FA	6	B
TCM 1120 - History of Arch & Construction	0	SP	9	2
TCM 1131 - Building Materials & Systems	3	SP	7	C
TCM 2240 - Introduction to Structures	0	FA	8	R
TCM 2241 - Mech & Elect Equipment & Syst.	0		0	
TCM 3230 - Wood Structures	0	SP	9	
TCM 3231 - Steel Structures	0	SP	9	
TCM 3232 - Concrete & Masonry Structures	0	SP	9	
TCM 3320 - Building Codes	0	SU	9	3
TCM 3330 - Quantity Estimating	0		0	
TCM 3331 - Construction Finance	0	SP	9	1
TCM 3332 - Construction Equipment Mgnt	0		0	
See[11] TCM 3890 - Special Problems in CM				
TCM 4090 - Selected Topics in CM				
TCM 4430 - Construction Safety	0		0	
TCM 4431 - Construction Cost Estimating	0		0	
TCM 4432 - Construction Administration	0		0	
TCM 4433 - Project Planning & Scheduling	0		0	
TCM 4434 - Site Construction	0		0	
See[12]	0	0	0	
MGNT 3130 - Mgnt & Organizational Behavior	0		0	
LSTD 3230 - Building Construction Law	0		0	
See[13]	0	0	0	

[9] PHYS 1111 or PHYS 2211 (with Calculus) .   [10] Exceptionally, if PHYSICS and its LAB
approved to be used in sub-area D1, take ≥4 hrs of advisor-approved coursework.
[11] These two courses are reserved for special circumstances.
[12] TCM 4540 (Senior Project) or TCM 4740 (Internship).
[13] Business course. If it is a 3000- or 4000-level one, it counts for Minor in Business

Free Elective (3 hrs required)				
MUSC 1100	3	SU	6	B

Req'd Total Hours = 133 ; Completed Hours = 43	In Progress

Figure 4: New automatically generated worksheet containing graduation clearance information – Partial view

Report Workbook

A second workbook has been programmed to extract all grades and suggested-course information from all students' post-advisement workbooks. The main purpose of this Excel spreadsheet is to estimate the number of seats needed in each CM course during the following academic terms. Figure 5 shows a partial view of it. It assumes **one seat**

per student who has been advised to take a course with a number **1** (primary course). Also, it assumes **0.5 seat** per student who has been advised to take a course with a number **2** (alternate course). However, both weighting numbers can be modified by the user.

Excel has a powerful function: INDIRECT(). It allows referencing to the content of a cell by reading the corresponding cell address from another cell. This permits acquisition of data by programming the addresses of the cells that contain the required information. In particular, it can be used to program the names of source files, worksheets and cell addresses from which data can be extracted. However, it only works if the source files are **open**. This is not our case. All students' post-advisement workbook files are closed. Fortunately, a set of free functions, programmed by a French Excel expert, Laurent Longre, are available online to be included in Excel 2007 as an add-in (http://xcell05.free.fr/morefunc/english/). They contain an extension of the INDIRECT() function: INDIRECT.EXT(). It works as the original INDIRECT(), but can be used with **closed files**. However, it takes time to open, access, and close those files each time data needs to be extracted.

The mentioned Report worksheet uses the INDIRECT.EXT() function. When run in a personal computer with a Pentium® D, 3.00 GHz processor and 2 GB of RAM, it took approximately 10 seconds to extract the information corresponding to one student. It took about 45 minutes to process 268 students. In order to avoid time consuming automatic updates of the acquired data values, the second parameter of the INDIRECT.EXT() function has to be set to FALSE. This will preclude the occurrence of automatic updates. This does not affect the results because an update of the variables is not needed unless data is changed in the students' post-advisement workbooks (source files). If that were the case, the sequence Ctrl+Alt+F9 can be used to produce a manual update. However, for 268 students' files, this update will require an additional 45 minutes.

PREDICTED CM COURSE DEMAND

INPUT YOUR DATA in cells with a LIGHT GREEN BACKGROUND (as in this one)

AFTER ADVISING 268 CM STUDENTS

A suggested **primary course** (indicated with a "1") is assumed to be equivalent to 1.0 seat / student

Date: October 28, 2008

Post-Advising Directory = R:\...\CM Post-Advising File - FA08

Advisement performed during FALL 2008 for SPRING 2009

#	Advisee's Excel Files	History of Architect TCM 1120	Seats	Architectural Graphics & Blue Print Reading TCM 1130	Seats	Building Materials and Systems TCM 1131	Seats	Construction Surveying TCM 2233	Seats	Introduction to Structures TCM 2240	Seats	Mech. & Electrical Equipment Systems TCM 2241	Seats	Wood Structures TCM 3230	Seats	Steel Structures TCM 3231	Seats	Concrete and Masonry Structures
	Seats:	23.5		28.0		18.0		77.5		51.0		74.0		36.0		49.5		Seats:
	Cell	F17		J17		AD17		J26		N35		R53		F44		J44		N44
1	40 (version 1).xlsx	A	0.0	A	0.0	A	0.0	R	0.0	B	0.0	B	0.0	A	0.0	B	0.0	A
2	n87.xlsx	A	0.0	A	0.0	B	0.0	A	0.0	A	0.0	1	1.0	A	0.0	B	0.0	A
3	xlsx	R	0.0	CT	0.0	B	0.0	O	0.0	C	0.0	1	1.0	R	0.0	R	0.0	R
4	7.xlsx	D	0.0	C	0.0	B	0.0	1	1.0	C	0.0	B	0.0	R	0.0	R	0.0	R
5	med65.xlsx	1	1.0	1	1.0	C	0.0	O	0.0	3	0.0	O	0.0	O	0.0	O	0.0	O
6	s	B	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	B
7	.xlsx	B	0.0	C	0.0	B	0.0	R	0.0	R	0.0	O	0.0	1	1.0	1	1.0	1
8	1.xls	B	0.0	B	0.0	B	0.0	A	0.0	A	0.0	R	0.0	1	1.0	1	1.0	1

Figure 5: Report Worksheet – Partial view

A complete list of post-advisement file names needs to be input into the Report Excel file so all those files can be accessed. Such list can be obtained via the following DOS command: *Dir /A > C:mytextfile.txt*. However, this command also generates non-required information (such as file creation dates, times and sizes). The unnecessary information can easily be deleted by using the Crimson Editor. In this regard, this is a helpful piece of software. It is a free text editor with a useful column selection feature that facilitates the deletion of the unnecessary information. It can be downloaded from http://www.crimsoneditor.com/.

Conclusions

This work presents a paperless tool for academic advisement of students attending a CM program. It is based on two simple, password-protected MS Excel worksheets contained in a single workbook. The main worksheet

presents the *Suggested Course Sequence*. The second worksheet is the *Clearance for Graduation Sheet*. Both replace a former paper-based procedure. Currently, the proposed new approach is being successfully implemented, for the first time, in the authors' department. The proposed spreadsheets can be easily modified by individuals with minimum knowledge of Excel to tailor them to other programs or curricula.

During this first implementation, several advantages have been identified:

1. It eliminates paper-based records of students' advisement. All records are now electronically stored in a computer server accessible by all departmental faculty and administrative personnel. The obviated papers are curriculum sheets and registration forms.
2. After implementing this system for the first time, it will not require returning students to prepare additional materials (lists, forms, etc.) for their subsequent advising sessions. Returning students may verbally inform their advisors about necessary information to update the data in their spreadsheets.
3. New electronic records are updated at each advising session. Since the required new information is not large (data on courses taken the previous semester and on courses currently being attended), the required update time should be minimum.
4. All prerequisites are easily visualized in the proposed *Suggested Course Sequence* worksheet. Also, this worksheet presents all necessary curriculum information (course names and numbers, prerequisites, alternative elective courses, required minimum passing grades, curriculum areas, credit hours, etc.). This visualization should help students avoid gridlock conditions precluding their registration into required courses and delays in their graduation.
5. Advisors suggest future courses by using simple numbers in the grade cells: 1 and 2 for suggested primary and alternate courses, respectively; and 3 and 4 for primary and alternate courses for the term after next.
6. After each advising session, students receive, via email, a copy of their corresponding advisement workbooks. They should use them to plan their future course selections.
7. The Graduation Clearance Sheet facilitates the comprehension of the completion status of the curriculum.
8. All students' workbooks are stored in a post-advising folder (directory) in a computer server accessible to all departmental personnel. For each major term (Fall or Spring) a new post-advising folder is generated.
9. Backups of all advisement records can be planned and automatically performed, adding extra security to the stored information.
10. Any faculty member and administrative personnel has the capability to access any advisement workbook from their office computers. This may expedite discussions pertaining to student issues, such as approvals or denials of overrides requests.
11. A Report workbook has been successfully programmed to access all students' advisement workbooks (even if they were closed) and extract information on suggested courses. After advisement is completed, it is possible to use the results contained in this worksheet to estimate the number of seats necessary in each CM course offered next term. This facilitates early decisions on the number of necessary sections to satisfy next term demands.

Overall, this new advising system appears to be properly working during its first cycle of use in Fall 2008. It is expected that improvements and adjustments will be incorporated after feedback is received from students and advisors currently using it.

References

King, M.C. (2002). *Community college advising*. NACADA Clearinghouse of Academic Advising Resources [WWW document (2008, October 31)] URL
http://www.nacada.ksu.edu/Clearinghouse/AdvisingIssues/comcollege.htm

NACADA (2006). *NACADA concept of academic advising*. National Academic Advising Association. [WWW document (2008, October 31)]. URL http://www.nacada.ksu.edu/Clearinghouse/AdvisingIssues/Concept-Advising.htm

UNESCO (2002). *The role of student affairs and services in higher education: A practical manual for developing, implementing and assessing student affairs programmes and services.* United Nations Educational, Scientific and Cultural Organization. Paris, pp 25-26