

OPTIMAL UTILIZATION OF CLASSROOM SPACE AND COURSE OFFERINGS
AT MILWAUKEE AREA TECHNICAL COLLEGE SOUTH CAMPUS

by

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ABSTRACT

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The purpose of this study was to analyze the scheduling of afternoon courses at the Milwaukee Area Technical College South Campus. It was also to help assist in planning optimal space utilization for both classroom and course scheduling. This research project covered interviews with scheduling associate deans, analyzing course cancellation reports for the afternoon sessions and a student survey indicating their preferences in scheduling classes. Results of this study showed no problems with assigning faculty to afternoon classes. The course cancellation reports displayed a twenty five percent cancellation rate for afternoon classes, which the scheduling associate deans found within normal range. The student survey pointed out students preferred attending classes three days a week

with courses 1 ½ hours long and offered twice a week. They desired Monday, Tuesday and Wednesday for class scheduling and a substantial number would like to take alternative delivery courses and would be available to take classes from 1:30 p.m. - 5:30 p.m. The courses that were suggested by the students were core program classes and recommendations were made that the configuration of the classrooms be designed for multipurpose instruction.

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Chapter 1

Research Problem and Objectives

Adult learners expect certain criteria from institutions of higher learning that are supported by their tax dollars. “Adults expect learner-centered settings where they can set their own goals and organize their own learning around their present life needs” (Donaldson, Flannery, and Ross-Gordon, 1993, p.148). They anticipate that the atmosphere in the institution embodies a comfortable educational setting. The institution may use a variety of learning style techniques in the classroom, adapts to diverse needs of the students and the instructors are dedicated to teaching the community members upgraded skills and academic subjects (Donaldson, Flannery, and Ross-Gordon, 1993).

Milwaukee Area Technical College is committed to the Milwaukee, Washington, and the Ozaukee county people, to being a world-class educational institution that empowers students to realize their potential (Milwaukee Area Technical College, 1999, MATC Fall Schedule, p.87). Milwaukee Area Technical College completes this task by administering the vision statement through the operation of three regional campuses and one main campus that includes the district offices. The three regional campuses are located in West Allis, Wisconsin (West Campus), Mequon, Wisconsin (North Campus) and Oak Creek, Wisconsin (South Campus). The last several years South Campus has had the largest student population of the three regional campuses.

MATC as a district saw a rise in FTE’s (full time equivalency) every year since the 1990-91 school year. However, in 1995 the Wisconsin Governor’s Office announced a new Welfare Reform Act called W-2 that was to go into effect on September 1, 1997. Aid for Dependent Children (AFDC) caseworkers in the fall of 1996 started to place

clients, currently enrolled in education or training, off the school rosters and into available entry level jobs (Mead, L., 1996) This created a set back in total district's FTE count from a one time high of 13,588 in 1994 to 11,775 in 1998 (EAPD Consulting, Wisconsin Technical College Facts 1998). Therefore every year, for the last four years, the district has set higher FTE goals for each campus to make up for the original loss of FTE's in the fall of 1996. South Campus has met their assigned goal every year for the last four years.

The South Campus student enrollment for 1998/99 second semester for day school was 2,565 and evening school was at 3,751 (Mutsch, T., 1999). The school capacity is set at 3,800. The campus is fast reaching its limits in classroom space. There are demands made from the Business and Industry community for MATC South Campus to expand programs and courses offerings. Since the mission of the school is to facilitate learning and the communities it serves, small businesses and local educational institutes expect to use their tax dollars in utilizing the school facilities for small conferences and workshops. This creates a dilemma when the campus is having a difficult time availing enough classroom space for its students.

Another issue that is factored into the problem is MATC is at tax levy limit and may need a referendum for building expansion in the future. This is due to MATC serving three counties and thus need to include all four campuses for remodeling and not just South Campus. The price tag for that referendum would be astronomical and with little chance of passing the voters approval. Therefore, South Campus is facing a facilities problem that will not be rectified in the near future. Evening school classroom space is almost at capacity and day scheduling from 8:00 a.m. to 1:30 p.m. is at capacity

with no classroom availability during those hours for additional courses. The one sector of time that is not being used to its full potential is from 1:30 p.m. to 5:30 p.m.

Statement of the Problem

Minimal course offerings are being facilitated at MATC South Campus for afternoon sessions, while the campus is near capacity at other periods of the day and evening. Employers in the Business and Industry arena demand that MATC help update the skills of their employees. MATC South Campus is required to serve community needs, therefore there is an obligation to expand course offerings. This requires optimal classroom utilization and course offerings at all hours of operation in order to achieve institutional mission goals and increase enrollments.

Purpose of the Study

The purpose of this research was to analyze the scheduling of afternoon courses at MATC and to assist in planning optimal space utilization for both classrooms and courses during this time frame. The research looked at the reasons courses were cancelled in that time frame over the last four years. Included in the research were students surveyed on what factors prohibited them from taking afternoon classes and interviews with Associate Deans about any faculty assignment concerns.

Objectives of the Study

The objectives of this study were:

1. Identify South Campus student time frame scheduling preferences for taking courses
2. Identify South Campus student availability for taking courses from 1:30-5:30 .

3. Determine the reasons for course cancellations from 1:30-5:30 p.m. for the last four years
4. Compile data to show possible need for alternative delivery courses to offered from 1:30 – 5:30 p.m.

Significance of the Problem.

There have been published articles stating the need for Community and Technical Colleges to be flexible and to have quick responses to the communities that they serve. This means the institution must be customer orientated, well informed and up to date with technology in order to give an educational response to the community needs. This not only includes courses offered but the facilities as well.

Buildings will need to be provided for students to access technology information, hear expert lectures, work together in small groups, and have the flexibility to be used by different groups at different times. While proper scheduling will minimize the need for additional facilities, those facilities will be designed to accommodate multiple activities. The hallmark of higher education in the future will be world-class service, user friendliness, and the agenda for learning set by students rather than teacher. (Christopher, Gaylaird, 1996, p. 18)

The MATC South Campus problem needs to be assessed in order for the institution to grow and to be accommodating to the students attending the campus. The facilities need to be used to the maximum potential that is mandated by the taxpayers of Milwaukee, Washington and Ozaukee counties.

1. The study needed to analyze student time frame requirements and preferences.

2. A historical evaluation is needed of course cancellations from 1:30 – 5:30
3. Data needs to be collected to determine if alternative delivery courses are a method the South Campus students are interested in pursuing

This study has been highly recommended by the South Campus Team Management and timeliness is of importance.

Limitations

The following limitations apply to this study .

1. Only students enrolled at MATC South Campus were surveyed.
2. Only randomly cross-sectioned classes in Liberal Arts and Sciences and Business Divisions were used for the survey.
3. No personal information was collected on the survey in regards to gender, age, or program enrolled
4. The survey was conducted on a volunteer basis. The researcher has no control over a student's participation or completion of the survey.

Definitions

1. FTE – Full Time Equivalency – students taking 30 class hours equals one FTE (Milwaukee Area Technical College, 1998).
2. Team management – A team of 17 members from MATC South Campus Faculty, Staff and Administration that hold the responsibility of making generalized campus decisions. (Milwaukee Area Technical; College South Campus, 1999).

Chapter 2

Review of Literature

History of Problem

Milwaukee Area Technical College South Campus has seen a steady rise in student enrollment figures since the doors opened in August of 1976. A factor which has caused the space facilities problem now hampering South Campus. A history of slight fluctuations in headcount enrollment figures has occurred on occasion. This was due to the rise and fall of the economy for the state of Wisconsin. A significant increase was seen after the Vietnam War when young men and women came home to gain an education through the assistance of Veterans benefits. Another significant factor that affected the whole country and placed heavy losses of students to all higher educational institutes was the new welfare reform act.

In 1995 Congress passed the Work and Responsibility Act which set the stage for each state to adopt a plan to remodel their welfare policies and procedures. Congress felt that the old welfare system did not provide sufficient state flexibility, did not encourage work, was responsible for the breakdown of the family structure and did little to reduce poverty, especially amongst children (Sawhill, 1995). The new act would encourage work, provide state flexibility, reduce out of wedlock births and decrease child poverty (Sawhill, 1995). Governors around the country cheered the act, caseworkers wondered how the act would affect their jobs, and the people on welfare waited for the sky to fall. By October of 1996 caseworkers were starting to pull AFDC (Aid for Dependent Children) recipients who were able bodied adults 18 years or older off of higher education enrollment rosters and place them into entry-level jobs (Mead, 1996). The

nation's community and technical colleges were shocked that the government would take clients enrolled in post secondary skill training programs or basic skills courses and place them in low paying positions.

More than half of all the adult welfare recipients lacks a diploma or equivalent.

As many as 75 percent of adult recipients have limited reading, math and document literacy skills. Using national projections, as many as 50,000 recipients (11 percent of the caseload) have a disability. As participation targets rise over the next five years, many more recipients with low basic skills and disabilities, including alcohol and drug abuse problems, will be required to participate in work activities. (New York State Education Department, 1997, p.1)

The institutions immediately started taking initiatives to work with caseworkers and providing proof to the state government agencies that keeping the clients in education and graduating them from programs would increase the entry-level pay scale and less assistance from the state would be required. "Less than 5% of the student body is now from welfare-to-work but courses and programs are currently being created specifically for welfare recipients" (State of Massachusetts, 1998). Other state community and technical colleges started creating projects to keep the welfare clients in school. The state of New York in the 1997-98 school year placed an additional 26 million dollars into the work study programs where recipients could work around their studies at the school and gain their 20 hours of work experience. New York is also developing short-term vocational certificates for the welfare clients. Maine is also taking steps to provide educational opportunities to the welfare participants. Two thousand of

the 15,000 welfare participants, in 1997 were paid benefits to stay in school by the state government and not by federal funds (Jordan, 1998). However there is a price to pay for this new programming being developed not only in New York but also all across the country. A burden is being placed on existing limited resources for the anticipated increase in enrollments and the demand for short time completion from the welfare reform agency's policy mandates. The Office of Higher Education must provide adequate resources in order to meet those resource demands, (New York, 1997).

Wisconsin took a harder approach to the W-2 (welfare reform act). The policy allowed post secondary education, but after fulfilling the requirement of their employment position, the costs and time for education was the responsibility of the client. In 1996 caseworkers started pulling clients off the class rosters and into entry-level jobs. Wisconsin's goals for W-2 were to

- To end the individual entitlement to cash assistance

- To set time limits upon public responsibility for disadvantaged families

- To shift from a program that regulates to one that emphasizes outcomes

- To minimize undesirable incentives by moving toward a broader target population

- To design a program that replicates the real world for participants

- To decouple key transitional supports such childcare and health care from one's welfare status

- To fully decouple child support from welfare

- To change the conception of welfare

- Transform welfare into a total community responsibility

- To end government monopoly on the administration of welfare. (Corbett, 1996)

Education was not a goal. Education was given a back seat to welfare clients. Only when clients showed a need for basic skills to gain an entry-level position was a Waiver granted and the client allowed to enroll in school instead of a job. Since the announcement of W-2 in 1996, Milwaukee Area Technical College has lost nearly 1,800 FTE's (full time equivalency) due to this new format. To date the Wisconsin Technical College System is still trying to implement an education component for the W-2 participants. The state feels the best site for education and training is at the worksite, CBO's (community based organizations) or in neighborhood job centers. The program at the job centers is 60 hours long and is not comprehensive. The program format is how to find a job, fill out a resume or application, how to do an interview and how your W-2 benefits will change after you receive a job.

Milwaukee Area Technical College South Campus Problem

Milwaukee Area Technical College is addressing the issue that these community members also need job skills and hands on training. Through lobbying to the government, W-2 agencies and working closely with job centers and CBO's, MATC (Milwaukee Area Technical; College) is trying to break down the resistance and allow W-2 recipients a chance to get a post-secondary education. A voice is being heard along with the other 15 districts across the state for the need to educate the poverty families in communities. If heard, then a need for more resources and classroom space will be essential factors in providing the education for these people. Factors that need to be addressed now at MATC South Campus are the morning and evening sections of courses at near capacity. If the voices are heard in the state government, one of the major components for the heavy losses in FTE's in the district will be resolved. A closer look at scheduling

practices and optimum space utilization is critical if South Campus is to meet the growing needs of the community that surrounds it.

Analyzing space utilization and optimum course scheduling is not a new dilemma in large urban educational institutions but sparse research has been done and reported on this subject. However, several large institutions did make the effort to create changes and document the results. The University of Arizona in Phoenix measured used two factors, room usage and seat utilization in the room. The first stage analyzed when peak periods occurred during the day and week and which departments were responsible for the peak. The second stage was to investigate whether students were interested in taking courses out of peak periods and identifying strategies to encourage student enrollment in courses at other times of the day or week. Academic departments were then requested to reduce their peak time courses by 10% and place required program courses in the afternoon. Twenty percent of the students polled, the University found, preferred afternoon classes and 6% were not opposed to having afternoon classes. Only 23% required morning classes due to work, which was the main assumption in scheduling classes by the departments for the morning hours. The results of the study by Arizona were a 10.3% reduction in peak time classes by academic departments involved in peak time scheduling. This reduction did not decrease enrollment in the University and brought up the space utilization of the institution by 24% (Porter, J. & Matt, J., 1986).

Likewise Bakersfield College in California did a 12-item student questionnaire on class time scheduling. The results of that survey indicated that 49% of the students felt that too many courses were concentrated in the morning. Forty two percent of the students commented that there were courses they could not take in the morning due to

time conflicts with courses they were required to take. The results of the survey gave timely student input into the scheduling practices of that institution (Scott, D., 1976).

Efficient classroom and course scheduling and distribution of support services have a great impact on the institution and its enrollments. There are a variety of computer generated scheduling models on the market for institutions to choose. Models such as Visual Classroom Scheduler and Flex Time Scheduling offer easy to install and program to meet the physical needs of the school. There are also theoretical concepts an institution may follow to help assist in optimum space and classroom utilization such as block scheduling or programs scheduled by templates rather than students picking out their own course load and schedules. Milwaukee Area Technical College uses a room scheduler design that is part of the system created by Datatel to handle all student reports, registration and admissions for the institution. Some of the Technical and Industrial diploma programs at the college still use the template system which is one of the reasons that division at the South Campus does not have peak period classroom problems. Templates however, cannot be utilized for all academic programs and require students to attend full time which is not feasible for many students.

An institution needs to be flexible with course scheduling to meet the educational and personal needs of the adult student and yet be practical and efficient in using the facilities to their optimum usage. The institution needs to understand that “adult learners expect learner-centered settings where they can set their own goals and organize their own learning around their present life needs” (Donaldson, Flannery, and Ross-Gordon, 1993, p.148) and time schedule. They want a comfortable learning atmosphere and have the educational environment adapted to their diverse needs and expectations. The adult

learner wants to be actively engaged in the learning process and all decisions related to their life on campus including scheduling of classes. The adult learner comes in to the institution with a variety of responsibilities (families, careers and social commitments) (Cantor, 1992, p. 37-38). It is the responsibility of an institution to be aware of those needs, plan and execute scheduling that is both workable for the student and endeavors to maximize classroom usage.

The student survey was therefore of great importance to the MATC South Campus Team Management. Students were able to give vital input to the Team as to their needs and desirable scheduling agenda. The information showed that some students would be interested in taking classes taken from 1:30 – 5:30 and also a growing interest in alternative delivery courses. The survey results also reconfirmed assumptions the administration had of the students scheduling habits and the reasons for those decisions. Work schedule was the top priority. Also noted by the students was the selection of morning classes due to courses being offered only in that time frame. This factor was researched by the scheduling Associate Deans to be resolved in a more variety of time choices for core program classes.

Details of the student survey are discussed in Chapter 4 and a copy of the survey can be found in appendix B.

Chapter 3

Methods and Procedures

Introduction

The purpose of this study was to assist in finding solutions to the lack of space utilization for afternoon time period from 1:30 – 5:30 p.m. at Milwaukee Area Technical College South Campus. Other periods of the day and evening for course offerings have been near capacity at MATC South Campus for the last four years. The study also collected data to see which academic divisions were affected by the cancellations and the reasons why the cancellations occurred. A short interview was conducted with class scheduling deans to investigate if there was or was not problems assigning faculty members to that time frame (see appendix A). Students were surveyed to find first their time preferences for course offerings and then if they were available to take classes from 1:30 – 5:30 p.m. Also asked was what courses they would take in that time span or why they can't schedule classes in the afternoons (see appendix B). The survey covered their knowledge of alternative delivery course offerings and if they had a desire to take a course in that format. It was hoped that the course cancellation history, interviews and student survey resulted in better understanding of course cancellation patterns, student needs and propose opening of new sections in the afternoon session or present an alternative delivery course during that time frame.

Research Design

Three research designs were used for this study. The first study consisted of a computer generated course enrollment report from the MATC Student Service Department. The information used in the report was from the District Registration and

Scheduling areas. Another design used was face to face interviewing process with Associate Deans who do the scheduling. This enabled the researcher to receive some in depth information about possible problems in faculty assignments scheduled for afternoon sessions. The third type of research design used in this study was a descriptive random sampling of day students in two academic divisions.

A course cancellation history was compiled to see if there was a reoccurring pattern in course cancellation from 1:30 – 5:30 and the reasons for that pattern. A four year history of course cancellations at MATC (Milwaukee Area Technical College) was compiled from a computer generated section enrollment report. It was compiled by semesters and did not include summer sessions. It contained all classes in both the Liberal Arts and Business divisions in which the classroom space problems were greatly affected. The 1995-96, 1996-97, and 1997-98 school year reports were tabulated by the school's registration computer operating system called SMIS (Scheduling Management Information System). The 1998-99 school year report was generated by the new registration system by Datatel. Comparing data from the two divisions provided an opportunity to identify patterns in cancellations.

The interview form for the scheduling associate deans consisted of a series of five specific questions. Interviewing was done privately face to face with only the researcher and the Associate Dean in the room. The information was kept confidential and no specific instructor's name was included in the interview report. The information reported was generalized to support either faculty assignment are a problem or not a problem during the afternoon time frame.

The student survey was a descriptive study. The purpose of the survey was to

ascertain if students are available to take classes from 1:30 – 5:30 p.m. The written student survey was conducted in the classroom with the instructor passing out the surveys attached to a cover sheet indicating who was doing the research, why the survey was being done and the student were under no obligation to participate. The survey was distributed to randomly selected instructors in the Liberal Arts and Business divisions. Covered in the distribution were teachers instructing during day hours of operation (8:00 a.m. to 5:30 p.m.). The survey results showed if students can and would take classes from 1:30 – 5:30 or if alternative delivery courses are an option for them.

Source of Data

The population for the interviewing procedure consisted of two associate deans and three instructional chairmen, three administrators from Liberal Arts and Sciences and two from the Business Division of MATC South Campus. These people are responsible for scheduling courses and handling faculty assignments for the South Campus. Nonresponse error did not occur in the interviewing process due to the small number needed to interview and they were employed full time at the South Campus.

The student population of the South Campus Liberal Arts and Sciences and Business Divisions during day hours is (1,500), consequently, 400 surveys were distributed with the hope that 306 surveys were returned for a +- 5% accuracy rating. Nonresponse figures will be included in the statistic findings and charts in Chapter Four of the study. The population of this study was targeted at random to full and part time students taking day classes, on Wednesdays, in both the Liberal Arts and Sciences and Business Divisions. Consumer Hospitality and the Technical Industrial

divisions do not have a space problem with their classes. The Consumer Hospitality division offers courses morning, afternoon and evening time frames with no classroom dilemmas. The Technical and Industrial area schedules their programs on templates with students taking set courses running from 8:00 a.m. to 3:30 – 4:00 p.m. Monday through Friday. The template assists in having most of the classrooms full all hours of the day. However almost all the programs in this division must be taken full time (except for evenings) and there is no flexibility in scheduling. The Liberal Arts and Business Division courses are more flexible and allow for more part time students to take classes fitting in with working and family schedules.

Instrumentation

The course cancellation report was computer generated by the Milwaukee Area Technical College Registration Reporting System. This included information such as course; section number, instructor assigned to the class, time frame of the class and if it is a program class or continuing education class from the last four school years (not including summer session). The report included if the class was cancelled, the date of cancellation and if there were any students enrolled in the class at the time of cancellation. The researcher did compare course cancellations in the 1:30-5:30 time frame, division that the course was in, and why the course was cancelled. Although two different systems were used to collect the data, the content appears compatible in the report format. The researcher was therefore assuming the data is comparable and both systems report accurate information. The report was limited to only classes cancelled from 1:30-5:30 p.m.

The Milwaukee Area Technical College approved the student survey and

interview form as well as the MATC South Campus Team Management and the researcher's advisor before distribution to students or interviews began. The interview form had five questions the scheduling associate deans needed to answer. All five questions pertained to assigning faculty members to courses and past difficulties in scheduling classes from 1:30 – 5:30. It also asked for suggestions for optimal space utilization of the campus classroom scheduling from 1:30 – 5:30 p.m. The interview questions was limited to only classroom and faculty scheduling assignments to afternoon classes.

The student survey had four multiple choice questions where the student can make one choice from six possible answers about class time scheduling preferences. Five questions were simple yes or no answers. Six questions on the survey asked for brief one or two word reply from the students. All questions pertained to time availability and course scheduling. There were no questions on the survey to identify the respondents in any manner with no personalized questions, privacy was not an issue in the results. The report was limited to only time frame availability, course suggestions to be taken from 1:30-5:30 p.m. and alternate delivery course accessibility. Demographic information on surveyed student's program and course load status is be included in Chapter Four of this study.

Data Analysis

Four hundred student surveys were given to random day time Business and Liberal Arts classes at the MATC South Campus. Three hundred forty one surveys were returned for tabulation of responses. Responses there then calculated for sample size and

percentage of responses. The calculations were then placed on an EXCEL spreadsheet to demonstrate the responses of the survey. The graphics are in pie chart and bar graphic format. The summary was included in Chapter 4.

Chapter 4

Findings

The purpose of this study was to analyze the scheduling of afternoon courses at Milwaukee Area Technical College South Campus. It was also done to assist in planning optimal space utilization for both classroom and course scheduling during the afternoon time frame. This study was a three-part research product. One aspect was to interview the Associate and Assistant Deans responsible for scheduling of courses at Milwaukee Area Technical College South Campus. Another aspect of this study was to research course cancellations from 1:30-5:30 over a four-year period in both the Business and Liberal Arts and Science divisions at the South Campus. The final phase of this study was to analyze and identify student current course schedule, time preference in scheduling and availability in taking courses from 1:30-5:30. The survey also asked the respondents about alternative delivery courses and their response in possible future selection of these courses. The findings will be organized by the three part format used the research (interview process, analyzing course cancellation reports and student survey results).

Findings From Interviews With Scheduling Associate and Assistant Deans

Three MATC South Campus Associate and two Assistant Deans were interviewed personally or by written responses to five questions pertaining to assigning faculty members to courses offered from 1:30-5:30 p.m. and any past difficulties scheduling classes from 1:30-5:30 p.m. The purpose of the interviews was to ascertain if the problem of scheduling afternoon courses was due to faculty assignment or specific

classroom scheduling. The Associate Dean from the Technical and Industrial division and two Assistant Deans (Fire Science and Police Science programs which are in the Technical and Industrial division) reported no difficulty assigning faculty or scheduling courses. All of the Technical and Industrial programs during the day are scheduled for full time students and most programs are on a template. Templates optimize classroom-scheduling utilization but give no options to the students. The only option for two year Associate Degree students in Police Science, Fire Science and Heating and Air conditioning programs was for students to fill in class schedule spaces with their required credits in Liberal Arts and Sciences. Since there were no problems in scheduling and no scheduling choices were given to students in this division; the emphasis was placed in Business and Liberal Arts and Sciences divisions where choices and flexibility were common practice.

The Associate Dean of Business indicated no problems assigning faculty to afternoon courses but found that some classes were cancelled due to low enrollment. She did not know if this was due to lack of interest in the courses offered or the time frame was a poor choice for the students due to a variety of reasons. The same comment came from the Associate Dean of Liberal Arts and Sciences although he felt the stronger answer to the afternoon course cancellations was due to students' life styles and commitments outside of the school. When asked what solutions they could give to the classroom optimal utilization problem occurring at South Campus they suggested the answer might lie in alternative delivery courses. This question was included in the student survey for their future resource information.

The scheduling Instructional Chair for the Consumer Hospitality division was

contacted so that all divisions sharing MATC South Campus classroom space were included in the interviewing process. The Chair indicated no problems in course or faculty scheduling. However, the courses offered in this division were not in academic programs and are located in dedicated labs (sewing, foods, flower arranging etc.) that can not be used for other academic pursuits. Also, the students taking these courses are 95% senior citizens where time commitments are not an issue. The researcher therefore felt this division, as well as Technical and Industrial division, was not to be focused on for the student survey or course cancellation research. Both divisions did not contribute nor share in the problem for the classroom optimal utilization.

Findings From the Course Cancellation Reports

Two divisions were researched for course cancellations between the hours of 1:30-5:30. The Liberal Arts and Science and Business divisions provided reports under two different formats (this was due to a computer software change over in 1998) but the information was basically the same type of data.

The Liberal Arts and Science division at South Campus had 93 course cancellations in a four-year time frame (1996 to 1999). The courses cancelled included a variety of different time formats. Some classes were 3 hours long and scheduled only 1 day a week and others were an hour and half on two days a week. There was no set pattern for the cancellations. The faculty members assigned to the classes were constantly changing and therefore not a factor. Although the courses encompassed a range of classes from math to English to a lab science, only 8 courses showed a repeat cancellation (Table 1). Tuesdays and Wednesdays were the highest days for course cancellations and 1999 showed the highest loss of classroom utilization than compared to the three previous years (Table 2).

A grand total of 130 classrooms were affected by course cancellations. The division offered 511 courses during this time frame which encompassed four years with two semesters a year of scheduling courses. The average schedule per semester is 63.9 courses offered with 25.4% of the courses being cancelled. The Associate Dean felt this was within normal range given the time frame for the classes.

Table 1
Liberal Arts and Sciences
Repeated Course Cancellations Scheduled between 1:30-5:30
Over Four Year Period

Discipline/Course	Cancellations			
	1995-96	1996-97	1997-98	1998-99
<u>English</u>				
. Communication Skills 1			X	X
. English 1	X	X		X
<u>Math</u>				
. Applied Algebra			X	X
. Beginning Algebra	X	X		
. Trig		X	X	
<u>Sciences</u>				
. Microbiology			X	X
<u>Other</u>				
. Spanish 4			X	X
. Conversational Spanish			X	X

Table 2
Liberal Arts and Sciences Classrooms Affected By Course Cancellations
Scheduled between 1:30 – 5:30
Over Four Year Period

Day/Total of Classrooms	1995/96	1996/97	1997/98	1998/99
<u>Mondays – 31 Classrooms</u>	2	10	8	11
<u>Tuesdays – 34 Classrooms</u>	8	8	5	13
<u>Wednesdays – 34 Classrooms</u>	2	11	8	13
<u>Thursdays – 25 Classrooms</u>	2	8	4	11
<u>Fridays – 6 Classrooms</u>	0	1	1	4

The Business division had greater numbers in course cancellations and classrooms affected by the cancellations but offered more classes than the Liberal Arts and Science division. The Business division had 164 course cancellations in a four-year time frame. Like the Liberal Arts and Science division the courses had a high range of variety in time slots as well as course content. Faculty assignment was not an issue for course cancellation in this division. This division did see a larger range of repeat cancellation courses with 22 listed on Table 3. Tuesdays and Wednesdays remained the highest days for course cancellations as with Liberal Arts division but 1999 was the year of the least amount of cancellations which was opposite the Liberal Arts division. Nineteen ninety-six was the highest year for cancellations in the Business division as seen in Table 4. A grand total of 213 classrooms were affected by course cancellations with 615 courses being offered, an average of 76.9 of courses being scheduled per semester. Of the course being offered, 26.7% were cancelled per semester for the 1:30-5:30 time frame.

Table 3
Business Repeated Course Cancellations Scheduled between 1:30-5:30
Over Four Year Period

Course	Cancellations			
	1995/96	1996/97	1997/98	1998/99
Intro to Lotus	X	X		
Micro Computers in Business	X	X		
Business Organizational Management	X	X		
Visual Msdg.	X	X		
Sales Techniques in Travel	X	X	X	
Intro to Word	X	X		
Speedwriting		X	X	
Grammar & Spelling	X	X		
Marketing Research	X	X		X
Marketing Principles		X	X	
Marketing Internship			X	X
International Marketing			X	X
Transportation Pricing	X	X		
Intro to Quicken		X	X	
Intro to Windows	X	X	X	X
Math of Business		X	X	
Keyboarding		X		X
Travel Computers 1			X	X
Financial Accounting			X	X
EXCEL		X	X	X
Harvard Graphics	X	X		
Intro to Internet Netscape			X	X

Table 4**Business****Classrooms Affected By Course Cancellations Scheduled between 1:30-5:30 Over Four Year Period**

Day/Total of Classrooms	1995/96	1996/97	1997/98	1998/99
<u>Mondays – 52 Classrooms</u>	10	12	17	13
<u>Tuesdays – 42 Classrooms</u>	15	9	12	6
<u>Wednesdays – 51 Classrooms</u>	13	13	12	13
<u>Thursdays – 35 Classrooms</u>	11	11	6	7
<u>Fridays – 33 Classrooms</u>	11	12	8	2
Grand total of 213 classrooms affected				

Table 5 shows a combined look at both divisions' course and classroom cancellation reports for four years. A total of 294 courses were cancelled affecting 343 classrooms over a four year period with eight semesters of scheduling.

Table 5**Total Number of Classrooms Affected by Course Cancellations Scheduled Between 1:30-5:30 Over Four-Year Period**

Day/Total of Classrooms	1995/96	1996/97	1997/98	1998/99
<u>Mondays – 83 Classrooms</u>	12	22	25	24
<u>Tuesdays – 76 Classrooms</u>	23	17	17	19
<u>Wednesdays – 85 Classrooms</u>	15	24	20	26
<u>Thursdays – 60 Classrooms</u>	13	19	10	18
<u>Fridays – 39 Classrooms</u>	11	13	9	6
<u>Grand total of 343 classrooms affected in both divisions</u>				

Findings on the student survey

The student survey consisted of fifteen questions. Two questions asked for personal information of the students, if they were full or part time and day or evening students. Four of the questions were multiple choice questions asking for their preferences in scheduling classes. There were six questions that needed to be filled in asking for specific queries such as what courses the students would like to see scheduled from 1:30-5:30 and two questions were on alternate delivery courses. This survey was given randomly to faculty teaching in various courses in both Liberal Arts and Sciences and Business divisions. The survey was done voluntary inside the classroom. Four Hundred surveys were distributed and three hundred thirty five were returned for an 84% return rate.

The students who filled out the survey were 73.8% full time and 26.2% part time students. The students were primarily taking day classes (87.1%) and 12.9% were primarily taking evening classes. Chart 1 of this study shows the results of the survey as to what times the students are now taking classes and Chart 2 shows their preferences in scheduling classes. The most significant differences between the two are more students desire classes from 12:00 to 9:30 p.m. over the time period they are now scheduled. The survey found 37.2% taking classes from 10:00-12:00, 34.9% taking classes from 8:00-10:00, 10.9% from 12:00-2:00, 2.9% from 2:00-5:00, 4.1% from 5:00-6:30 and 10% from 6:30-9:30 p.m.

When students were asked their preferences in scheduling they were allowed to mark any time choices they desired and the results showed the students wanted more classes later in the day. The students still showed high interest in 8:00-12:00 classes with 190

students wanting 8:00-10:00 time slot and 230 wanting to keep 10:00-12:00 p.m. time frame in their schedules but the big difference was shown in the desire to take afternoon classes. Thirty-seven students indicated that they were taking 12:00-2:00 classes and 154 wanted to take classes from 12:00-2:00. Ten students were scheduled for classes from 2:00-5:00 and 63 desired classes in that time frame. Fourteen were taking classes from 5:00-6:30 with 56 wanting classes and 34 were taking evening classes from 6:30-9:30 with 71 indicating an interest. It was further found that 179 students or 53.4% were interested in taking classes from 1:30-5:30 and although, 48 students omitted filling in the blank line to suggested which courses they prefer, most courses indicated were core program classes. The question on alternative delivery courses was also a positive one with 125 students willing to take an alternative delivery class to round out their schedule. Table six identifies the students interest in how long the class should be and how often during the week the class should be offered. The students indicated that 32.3% wanted classes once a week for three hours. The majority of students 52.5% wanted classes 1½ hours long twice a week while 15.3% wanted one hour classes three times per week.

Table 6 Hours Per Week Taking A Class	
Time Period	Percentage of Responses
Once a week (Three Hours)	32.3%
Twice a week (1 ½ Hours)	52.5%
Three Times Per Week (1 hour)	15.3%

Chart three pictures the days of the week the students prefer to schedule courses. Tuesday and Wednesday are the most desired days with Friday being the least desirable

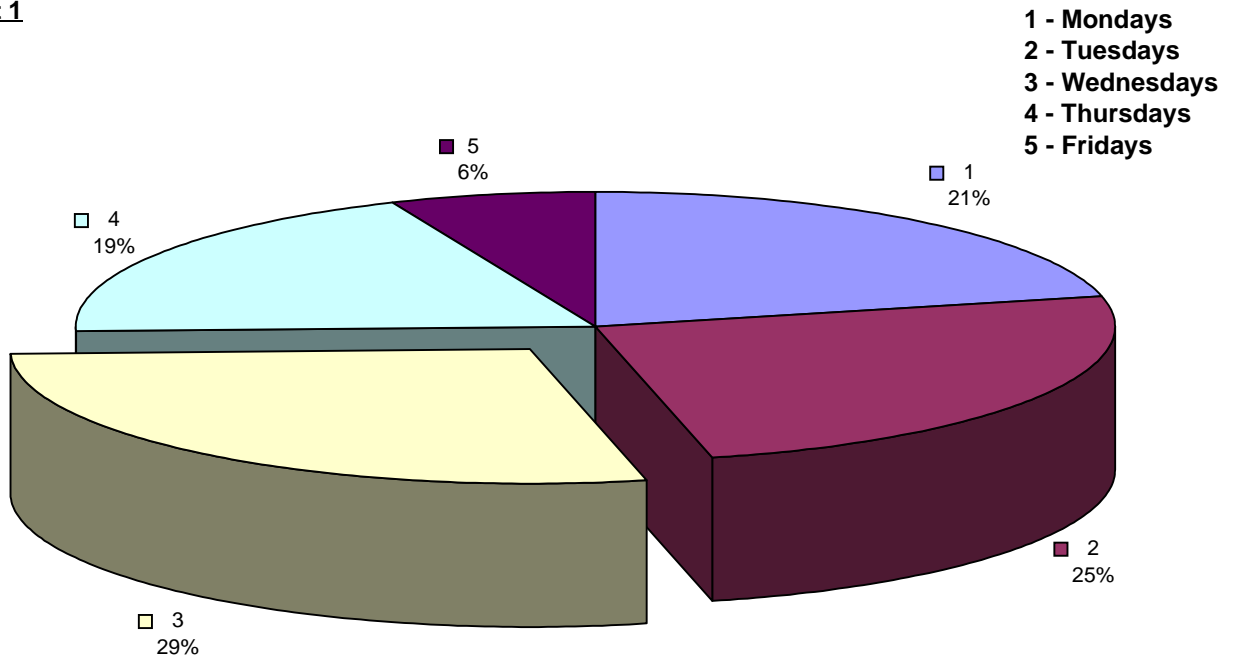
day. Chart four is the number of days per week the students want to attend classes.

Three times per week with 33.7% of the students choosing this as the most preferred with two days a close second with 30.2%.

The results of this study are not surprising. The interviews indicated no problems with assigning faculty to afternoon courses. The percentage of cancellations for afternoon courses is around 25% for both Liberal Arts and Business Division, which is, considered normal range by the scheduling Associate Deans. Students prefer attending classes three days a week with courses 1 ½ hours long and offered twice a week. They desire Mondays, Tuesdays and Wednesdays for class scheduling and a substantial number would like to take alternative delivery courses and would be available to take classes from 1:30-5:30 p.m. This study has proven some ideas Associate Deans have had in scheduling classes such as preferred days of the week and has demonstrated some new thoughts such as desire in the students to take alternative delivery courses or late afternoon classes.

Days of the Week Preferred

Chart 1



Number of Days per week students want to attend

Chart 2

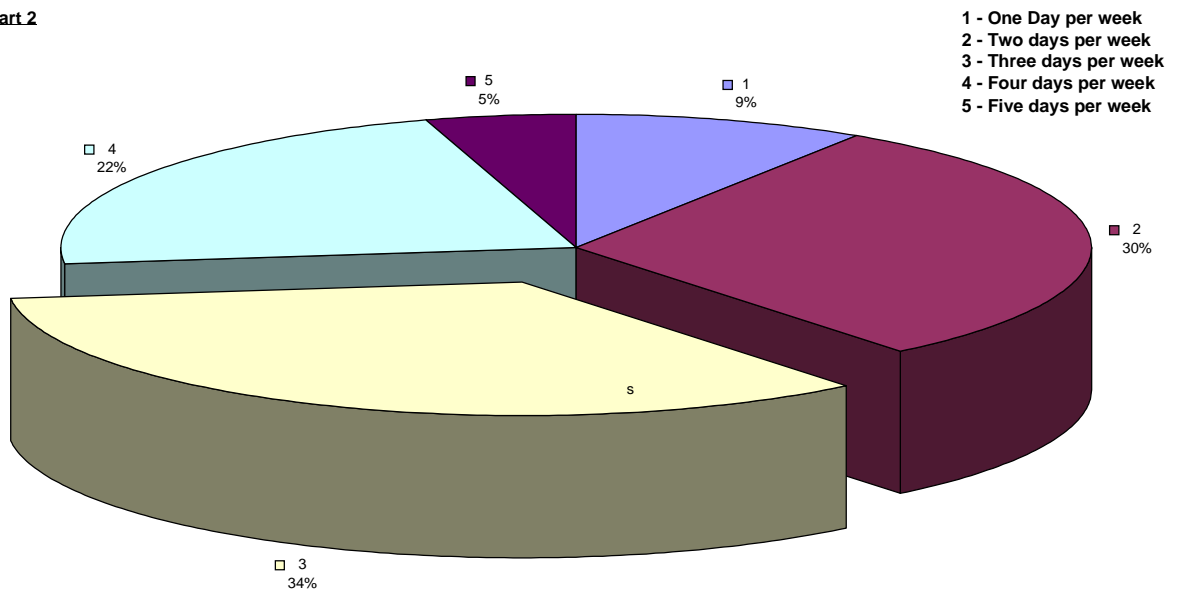
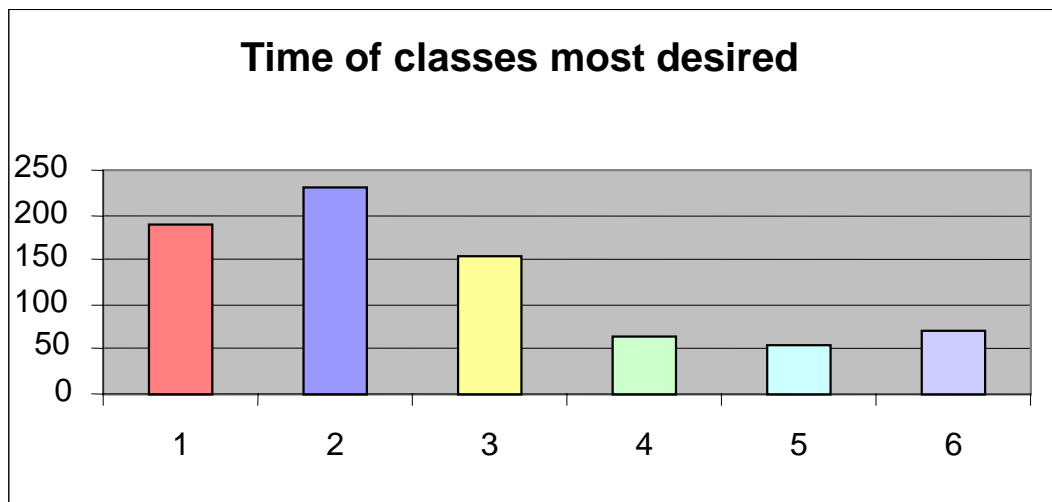


Chart 3



Chart 4



Number 1 – Classes from 8:00-10:00
Number 2 – Classes from 10:00-12:00
Number 3 – Classes from 12:00-2:00
Number 4 – Classes from 2:00-5:00
Number 5 – Classes from 5:00-6:30
Number 6 – Classes from 6:30-9:30

Chapter 5

Summary, Conclusions and Recommendations

Summary

Optimal utilization of space is a concern for any industrial, technical or educational institution. In a vocational education institution the administrators are concern about providing services for the communities that financially support them and meet the educational needs of the adult learners attending their institution. To accomplish both concerns the institution must use every resource within its sphere of influence to its optimal usage. Classroom space is an important resource to the institution for the student and the community and must be used to its full potential. This study researched the Milwaukee Area Technical College South Campus's dilemma of near capacity classroom usage during the morning and evening time frames but limited scheduling of courses from 1:30 to 5:30 p.m.

Restatement of the Problem

Minimal course offerings are being facilitated at MATC South Campus from 1:30 – 5:30 p.m., while the campus is near capacity at other periods of the day and evening. Businesses and Industries surrounding the campus demand that MATC assist in updating the technological skills of their employees which requires additional, sometimes customized, courses which require classroom space any time of the day that meets with the employers request. It is essential that MATC South Campus achieves its institutional mission goals and increases enrollments in order to maintain financial stability. Therefore it must use every resource to its optimal usage. Historical evaluation was needed to analyze the scheduling of courses between 1:30 – 5:30 p.m. To explore the reasons for course cancellations during this time frame over the past four years. Also

required were a survey of students to identify what factors do or do not prohibit them from taking classes in the afternoon and interviewing the course scheduling administrators to isolate any faculty assignment concerns.

Methods and Procedures

Three research designs were used for this study. The first was based on a computer generated course enrollment report from MATC Student Services. These reports were analyzed for courses cancelled from 1:30 to 5:30 p.m. and the reasons behind the dropped classes. This was researched for the Business and Liberal Arts and Science divisions only since this was the focused area of the space utilization problem at South Campus.

The second design used was an interviewing process with the scheduling administrators of MATC South Campus. Three Associate Deans, two Assistant Deans and one Instructional Chair were asked five questions concerning assigning faculty to 1:30-5:30 p.m. classes and their theories behind the lack of courses being offered in that time frame. Also asked where their strategies on how to resolve the dilemma of optimal use of classroom space. The information was either given to the researcher in written form or face to face

The third design was a descriptive student survey. The survey had fifteen questions that were either fill in the blank or multiple choice type questions. The purpose of the survey was to ascertain if students are available to take classes from 1:30 – 5:30 p.m. The student survey was conducted in the classroom with the instructor passing out the surveys attached to a cover sheet indicating information about the survey and that they were under no obligation to complete the form. The survey was distributed to randomly selected Business and Liberal Arts and Science faculty who primarily taught classes from 8:00 a.m. to 5:30 p.m.

Major Findings

The course cancellation reports researched from the Liberal Arts and Science division revealed 93 courses were cancelled out of 511 courses offered (25.4%) over an eight-semester four-year period (1996 to 1999). Only 8 courses were repeated cancellations and Tuesdays and Wednesdays were the highest days for cancellations. The cancellations affected 130 classrooms over a four-year period but the Associate Dean felt this was within normal range of operation for his division.

The course reports from the Business division had 164 courses cancelled out of 615 courses being offered (26.7%) over a four-year period. Twenty-two courses were repeated cancellations and Tuesdays and Wednesdays remained the highest days for classes being cancelled. Two hundred thirteen classrooms were affected by the courses being dropped over four years but again the Associate Dean stated this was within a normal range in scheduling courses for the South Campus. The combined total number of course cancellation for both divisions were 294 cancellations affecting 343 classrooms over four year period.

The interviews with the scheduling administrators disclosed no problems assigning faculty to 1:30-5:30 p.m. courses. The administrators from the Technical and Industrial division use templates for scheduling programs and all programs except for three associate degree programs are full time attendance only. Since students had no flexibility in scheduling classes in this division it was felt by the researcher to not focus the student survey in this area. The Instructional Chair for the Consumer Hospitality indicated all courses offered at South Campus were advocational. The large majority of students were senior citizens with no time commitments so having classes any time any day was no

concern for scheduling and courses were always filled. Keeping in mind these factors the researcher did not include this division in the student survey.

The survey was distributed to four hundred students and three hundred thirty five were returned. The student survey illustrated that students, if given the choice, wanted more afternoon classes. The current trends in schedules the students now have are from 8:00 a.m. to 12:00 p.m. However, when asked what they would prefer in their schedules they indicated an interest in classes from 12:00 to 5:00. One hundred fifty four students wanted classes from 12-2 when only thirty seven now have that time slot in their schedules and sixty three desired classes from 2-5 when only ten now are scheduled during that time frame. When asked outright if they wanted classes from 1:30-5:30 and what type of classes they responded with 53.4% indicated yes they wanted that time frame and suggested core program courses to fill the schedule. Also, a hundred twenty five students wanted to try alternative delivery classes to help fill their schedules. The majority of students (52.5%) wanted classes to be two days a week for 1½ hours each session. Tuesdays and Wednesdays were the most desirable days for classes and 33.7% wanted to attend school three days a week and 30.2% wanted to attend two days a week.

Conclusions

The students have clearly demonstrated their desire for classes after 12:00 p.m. according to the survey. They would like the classes to be core program classes and scheduled on Tuesday or Wednesday for 1½ hours twice a week. There should be no problem with faculty assignment and classroom space is not at a premium during this time frame so should not pose as a concern at this time. Also, alternative delivery classes are growing in popularity and more students are willing to attempt a new form of technology for their education therefore more course offering in this format should be

made available to the students. Although the two divisions course cancellations over the past four years are within normal range, the courses being offered and cancelled are elective type of classes and not core program courses.

Recommendations

In order to achieve classroom space optimal utilization core program courses need to be distributed in scheduling from 8:00 a.m. to 9:30 p.m. They need to be offered in the traditional type of educational setting and alternative types of delivery for the non-traditional student with numerous commitments outside of the educational setting should be explored. The classroom itself must have up to date technology and be designed for multipurpose tasks. No longer can most classrooms be dedicated to lecture or lab situations. New multifunctional designs can be used where both lecture and some lab situations can be accomplished and scheduled for optimal classroom usage. The southern area surrounding Milwaukee is growing at a fast pace and with it grows the community demands on Milwaukee Area Technical College South Campus. Classroom utilization and program core course offerings in many venues must be a priority if South Campus is to have a successful future in the new millennium.

It is also recommended that the administrators take charge in assisting the faculty members who are interested in creating alternative delivery courses. Provide resources and reduce teaching loads in order for these enthused instructors to explore and gain new technology in teaching skills by generating core program classes in non-traditional modes. Another recommendation would be to follow up with an evaluation of any schedule changes for the 1:30-5:30 time frame to view it's effectiveness in optimal utilization of classroom and course offerings.

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Interview Form

Course Scheduling Administrators

Name: _____

Division: _____

1. Do you have problems scheduling courses from 1:30 – 5:30?

Yes _____ (1) No _____ (2)

1A. If YES, what courses? _____

1B. If YES, do you know why? _____

2. Did you ever have to cancel courses from 1:30 –5:30 in the last four years?

Yes _____ (1) No _____ (2)

2A. If YES, what courses? _____

2B. If YES, do you know why? _____

3. Do you find Instructors resistant to teaching sections from 1:30-5:30?

Yes _____ (1) No _____ (2)

3A. If YES, in what programs do they teach? _____

3B. If YES, do they give reasons and if so what are they? _____

4. Are your courses flexible to time change?

Yes _____ (1) No _____ (2)

4A. If NO, why? _____

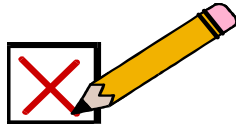
4B. If NO, is specialty labs schedule part of the problem?

Yes _____ (1) No _____ (2)

5. What solutions would you suggest for optimal classroom and space utilization at South Campus?

Appendix B

MATC South Campus Preferred Class Time Survey



Please mark or fill in your preferred answer. Your cooperation in this project will assist MATC South Campus Team Management in creating class schedules to meet the student needs.

1. I am a full time student _____ I am a part time student _____
2. I take primarily day classes ____ I take primarily evening classes _____

3. The class times I most often take now for my classes (choose only ONE)

8:00 – 10:00 a.m. _____ (1)	2:00 – 5:00 p.m. _____ (4)
10:00 – 12:00 p.m. _____ (2)	5:00 – 6:30 p.m. _____ (5)
12:00 – 2:00 p.m. _____ (3)	6:30 – 9:30 p.m. _____ (6)

Why? _____

4. When would you prefer to take your classes? (M – most likely to choose or A – absolutely cannot choose. Choose only ONE)

8:00 – 10:00 a.m. _____ (1)	2:00 – 5:00 p.m. _____ (4)
10:00 – 12:00 p.m. _____ (2)	5:00 – 6:30 p.m. _____ (5)
12:00 – 2:00 p.m. _____ (3)	6:30 – 9:30 p.m. _____ (6)

Why? _____

5. How many hours per week would you prefer to take your class?

Once a week (3 hour block session) _____ (1)
Twice a week (1 ½ hour block session) _____ (2)
Three times a week (1 hour block session) _____ (3)

Why? _____

6. How many days per week would you prefer to attend your classes?

1 Day _____ (1)	4 Days _____ (4)
2 Days _____ (2)	5 Days _____ (5)
3 Days _____ (3)	

Which day(s) of the week would you prefer to take classes?

Please Turn Over

The South Campus is experiencing a serious space crunch and we have noticed that there is classroom space available for more class sections from 1:30 – 5:30 p.m.

7. Would you be willing to take a class in the 1:30 – 5:30 time frame?

Yes _____ (1) No _____ (2)

7 A. If yes, what type of classes would you like to see offered?

7 B. If no, what is the reason you could not take classes during this time?

8. Did you know MATC has alternative delivery classes available to you?
(ITFS, Two way video, Internet etc.)

Yes _____ (1) No _____ (2)

9. Would you be interested in taking an alternative delivery class?

Yes _____ (1) No _____ (2)

THANK YOU FOR COMPLETING THIS IMPORTANT SURVEY

Please send the surveys to the Office of Student Life A109.