The Department of Mathematics Document Series

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THE UNIVERSITY OF SOUTHERN MISSISSIPPI®

Math Department Student Handbook

Undergraduate Program

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1 Background and Objectives

1.1 Use and Purpose of Handbook

The following information is intended as a guide for undergraduate students who declare a major in Mathematics or Mathematics Licensure on the Gulf Coast or Hattiesburg campus. This handbook is composed of

1. a selection of policies and information pertaining to all undergraduate students (also contained in the *Undergraduate Bulletin*) or all undergraduate students in the College of Science and Technology which are particularly relevant to undergraduate students pursuing a Mathematics BS degree or Mathematics Licensure BS degree.

2. a collection policies adopted by the faculty of the Department of Mathematics regarding undergraduate students pursuing a Mathematics BS degree or Mathematics Licensure BS degree.

The *Undergraduate Bulletin* should be consulted for any topics not contained in this handbook, and takes precedence over any discussion here. If any policies contained in this document are found to be in violation or conflict of policies contained in the *Undergraduate Bulletin*, please notify the Department of Mathematics immediately.

1.2 Department Contact Information

On the Hattiesburg campus, contact the department by visiting the office of the Department of Mathematics, located in Southern Hall 319. To contact the department from off campus, use the information below:

The Department of Mathematics
The University of Southern Mississippi
118 College Drive #5045
Hattiesburg, MS 39406-0001

Phone: 601.266.4289
Fax: 601.266.5818
Email: mathdept@usm.edu

At the Gulf Coast campus, students may find the offices of Mathematics faculty located in the Gulf Coast Student Service Center.

1.3 Mission of the Department

The primary mission of the Department of Mathematics is the transmission, discovery, creation, and expansion of mathematical knowledge. Its curriculum is designed to encourage: learning based upon rational inquiry, problem solving, creativity, and intellectual initiative. Its instructional thrusts run the gamut from basic skill development designed to create a mathematically literate undergraduate populace, to meeting specific educational needs of students outside the science and technology establishment, to the creation and delivery of innovative and effective teacher-training programs, to the engendering of a strong mathematics knowledge base among those who will be charged with contributing to both the regional and national scientific enterprises. In addition, the members of our graduate faculty are also charged with the development of new and innovative curricula, with the expansion of the frontiers of mathematical knowledge, and with sharing their results with the community at large via publication and presentation.

1.4 Objectives

The Department of Mathematics has identified the following learning objectives for students pursuing the Mathematics BS/ Mathematics Licensure BS degree.

1. Students should be mathematically conversant.
2. Students should understand theory and applications of calculus
3. Students will learn the fundamental logic needed for deductive reasoning and will construct proofs of some elementary theorems using quantifiers, indirect and direct proofs, and mathematical induction.
4. Students should possess an understanding of the breadth of the mathematical sciences and their deep interconnecting principles; an awareness of the abstract nature of theoretical mathematics and the ability to write proofs; and an in-depth understanding of at least one subject in mathematics.
5. The program should prepare students to be effective secondary school teachers, to be ready for graduate school, and to have meaningful and enjoyable lives.
6. Students should be able to write computer programs in a high level language using appropriate data structures to solve mathematical problems. Students should be able to create and document algorithms. Students should be able to use the computer for simulation and visualization of mathematical idea and processes.

2 Advisement and Degree Requirements

The information in this chapter is intended as a guide for students on the Gulf Coast or Hattiesburg campus who

1. declare an undergraduate major in Mathematics
2. declare an undergraduate major in Mathematics Licensure
3. seek a minor in Mathematics OR are an Elementary Education major and seek a Mathematics Concentration

Much of the information from this chapter is also available in the *Undergraduate Bulletin*, which can be found on the website for the University of Southern Mississippi (www.usm.edu)

2.1 Admission & Advisement

For admission into a degree program in the Department of Mathematics, all students must comply with the General Academic Regulations of the University, which are contained in the current Undergraduate Bulletin.

In addition, students who desire to pursue the Secondary Teacher Education program in mathematics (a Mathematics Licensure BS) must request formal admission to the Teacher Education program through the Deans Office, College of Education and Psychology. Admission requirements are subject to modification; for current information, consult the *Undergraduate Bulletin* (the section entitled *Teacher Education Programs and Requirements*).

All students in the Department of Mathematics are assigned an advisor. It is the responsibility of each student to consult his/her advisor prior to registration each semester (or if problems arise). Contact your faculty advisor to determine an appointment.

2.2 Degree Requirements: Mathematics BS

The degree requirements for a Mathematics BS degree fall into two categories: The General Education Curriculum and the Program Curriculum. The tables below outline the degree requirements for both categories for students pursuing a Mathematics BS degree.

GENERAL EDUCATION CURRICULUM	Requirements	
GEC 1. Written Communication	1.1 ENG 101	☐
	1.2 ENG 102	☐
GEC 2. Science & Mathematics	2.1 (a) PHY 201/L	☐
	2.1 (b) *Select 1 course (with lab):* AST 111/L, AST 112/L, BSC 103/L, BSC 110/L, BSC 111/L, BSC 250/L, BSC 251/L, CHE 104/L, CHE 106/L, CHE 107/L, GLY 101/L, GLY 103/L, MAR 151/L, PHY 202/L	☐
	2.2 MAT 167	☐
GEC 3. Global History & Culture	3.1 *Select 1 course:* ANT 101, GHY 101, SOC 101	☐
	3.2 ENG 203	☐
	3.3 *Select 2 courses: (1 History required)* HIS 101, HIS 102, PHI 151, REL 131	☐
GEC 4. Aesthetic Values	4.1 *Select 1 course:* ART 130, DAN 130, MUS 165, THE 100	☐
GEC 5. Decision-Making & Responsibility	5.1 *Select 1 course:* COH 100, ECO 101, PHI 171, PS 101, PSY 110	☐
GEC 6. Computer Competency	6.1 CSC 101/L	☐
GEC 7. Writing-Intensive	7.1 *Any upper-level writing-intensive course.* ENG 333 (WI) or a WI course from the required minor are recommended. ENG 101 & ENG 102 prerequisites	☐
GEC 8. Oral Communication	8.1 *Select 1 course:* CMS 111 (SI), CMS 305 (SI), CMS 320 (SI), CMS 330 (SI)	☐
GEC 9. Capstone Requirement*	9.1 MAT 481 (Capstone)*	☐
**Must be taken Senior Year*	*ENG 101 & ENG 102 prerequisites*	

Table 1: General Education Curriculum for Mathematics BS

PROGRAM CURRICULUM	Requirements	
DEG 1. Major Area	1.1 MAT 168	☐
	1.2 MAT 169	☐
	1.3 MAT 280	☐
	1.4 MAT 285	☐
	1.5 MAT 305	☐
	1.6 MAT 320	☐
	1.7 MAT 326	☐
	1.8 MAT 340	☐
	1.9 MAT 423	☐
	1.10 MAT 481 (Capstone)	☐
	1.11 *Select 6 hours upper-level mathematics courses* Does **not** include the following courses: MAT 090-410, 430, 431, 457/L, 489, and 490. These courses **must** satisfy **one** of the following: (a) *Select 1 course* MAT 415, MAT 417, MAT 420, MAT 424, MAT 426. (b) *Select 1 sequence* MAT 418-419, MAT 441-442, MAT 460-461	☐
DEG 2. Required Minor (18 hours)	2.1 Students must fulfill requirements to receive a minor in another discipline.	☐
DEG 3. Electives	3.1 Choose electives as needed.	☐

Table 2: Program Curriculum for Mathematics BS

Other Requirements. A student must maintain a 2.0 GPA in order to graduate with a Mathematics BS degree. In addition, no mathematics or computer science course in which a student receives a grade less than C will count toward the major.

2.3 Degree Requirements: Mathematics Licensure BS

The degree requirements for a Mathematics Licensure BS degree fall into two categories: The General Education Curriculum and the Program Curriculum. The tables below outline the degree requirements for both categories for students pursuing a Mathematics Licensure BS degree.

GENERAL EDUCATION CURRICULUM	Requirements	
GEC 1. Written Communication	1.1 ENG 101	☐
	1.2 ENG 102	☐
GEC 2. Science & Mathematics	2.1 (a) PHY 201/L	☐
	2.1 (b) *Select 1 course (with lab):* AST 111/L, AST 112/L, BSC 103/L, BSC 110/L, BSC 111/L, BSC 250/L, BSC 251/L, CHE 104/L, CHE 106/L, CHE 107/L, GLY 101/L, GLY 103/L, MAR 151/L, PHY 202/L	☐
	2.2 MAT 167	☐
GEC 3. Global History & Culture	3.1 *Select 1 course:* ANT 101, GHY 101, SOC 101	☐
	3.2 ENG 203	☐
	3.3 HIS 101, HIS 102	☐
GEC 4. Aesthetic Values	4.1 *Select 1 course:* ART 130, DAN 130, MUS 165, THE 100	☐
GEC 5. Decision-Making & Responsibility	5.1 PSY 110	☐
GEC 6. Computer Competency	6.1 Successful completion of the BTLE or IC3 certification.	☐
GEC 7. Writing-Intensive	7.1 MAT 481 (WI)	☐
GEC 8. Oral Communication	8.1 CMS 111 (SI)	☐
GEC 9. Capstone Requirement*	9.1 MAT 481 (Capstone) *ENG 101 & ENG 102 prerequisites*	☐
**Must be taken Senior Year*	9.2 MAT 490 (Capstone)*	☐

Table 3: General Education Curriculum for Mathematics Licensure BS

PROGRAM CURRICULUM	Requirements	
DEG 1. Major Area	1.1 MAT 168	☐
	1.2 MAT 169	☐
	1.3 MAT 280	☐
	1.4 MAT 285	☐
	1.5 MAT 305	☐
	1.6 MAT 309	☐
	1.6 MAT 320	☐
	1.7 MAT 326	☐
	1.8 MAT 340	☐
	1.9 MAT 370	☐
	1.10 MAT 420	☐
	1.11 MAT 423	☐
	1.12 MAT 481 (Capstone)	☐
	1.13 *Select 3 hours upper-level mathematics courses* Does **not** include the following courses: MAT 090-410, 430, 431, 457/L, 489, and 490.	☐
DEG 2. Additional Requirements	2.1 *Select 1 course:* CSC 101/L, CSC 102, CSS 240, CSS 330, CSS 331, CSS 333, CSS 334, CSS 340, CSS 342, CSS 402	☐
DEG 3. Teacher Licensure*	3.1 CIS 302	☐
**Certain courses are restricted;*	3.2 CIS 313	☐
Gold Card required.	3.3 MAT 220	☐
	3.4 MAT 457/L	☐
	3.5 MAT 489 (Capstone)	☐
	3.6 MAT 490 (Capstone)	☐
	3.7 PSY 374	☐
	3.8 REF 400	☐
	3.9 REF 469	☐
	3.10 SPE 400	☐
	3.11 Teacher education majors are required to take Praxis II content and PLT tests and have scores reported to Southern Miss (code #1479) prior to graduation.	☐
DEG 4. Electives	4.1 Choose electives as needed.	☐

Table 4: Program Curriculum for Mathematics Licensure BS

Other Requirements. In order to obtain a Mathematics Licensure BS degree, students must additionally apply for admission into the licensure program. Until successful admission, certain classes (in DEG 3) are restricted. In order to apply for admission into the licensure program, the following requirements (taken from the *Undergraduate Bulletin*) must be met:

1. one of the following acceptable exam benchmarks must be met:
   (a) an ACT composite score of 21 or higher, with no scale score below 18,
   (b) an SAT of 860 (verbal and quantitative) upon entrance into college
   (c) acceptable scores on the Praxis I subscales computerized PPST: Reading (170), Writing (172) and Mathematics (169),
   (d) acceptable scores on the Praxis I (CBT): Reading (316), Writing (318) and Mathematics (314);
2. a minimum grade point average on the 44-semester-hour general education core curriculum of 2.65;
3. a C average in freshman English Composition;
4. successful completion of the Basic Technology Literacy Exam (BTLE) or IC3 certification;
5. good academic standing at the University of Southern Mississippi.
   A student on probation, probation continued or suspension status will not be admitted to teacher education until such a time when the transcript reflects good academic standing;
6. clear background check.
   This is done via a system selected by the Southern Miss Professional Education Council. Each student who applies for admission to a teacher education program must undergo a background check when applying for the Gold Card. Students who pass the background checking process will be issued a background check badge and considered eligible for admission to teacher education pending satisfaction of other admission requirements.

After admission to a professional education program, the following requirements must be met to continue in the program:

1. All candidates must subscribe to the Tk20 Assessment System.
   Tk20 provides an electronic portfolio and storage system for students as well as tracks, stores, retrieves and analyzes data for accreditation purposes.

2. A grade of C or better in all content courses in the academic major as well as all professional education courses with an overall grade point average of 2.50;

3. fulfillment of major requirements in subject area;

4. completion of professional education courses required by the major;

5. take Praxis II content and PLT tests and have scores reported to the University of Southern Mississippi (code #1479) prior to graduation.

A minimum of 30 clock hours of clinical experience is required prior to teacher candidacy (15 hours of observation and 15 hours of practicum).

Requirements for professional education programs are subject to modification. For current program information, students should contact the Educator Licensure Office for the university. Mississippi Department of Education licensure requirements supersede the program requirements listed here or in the Undergraduate Bulletin. Mandated changes in program requirements will be communicated through the candidates department.

The Basic Technology Literacy Exam (BTLE). In addition, students are required to pass the BTLE in order to receive a Gold Card and admission to teacher education. The minimum score is 70% on each of the five (5) modules. Information regarding the BTLE can be found at the BTLE website for USM (www.usm.edu/btle).

Students have the opportunity to enroll in the course IT 201 (Introduction to Educational Technology) offered through the Department of Curriculum, Instruction, and Special Education, that focuses on basic technology literacy and the competencies included in the BTLE. A requirement of the course is successful completion of the Basic Technology Literacy Exam as a part of the final exam. In addition, students who do not earn the minimum score of 70% on each of the 5 modules are given the opportunity to retest.

Prior to registering for the BTLE, the student must be registered for the current semester and have a valid eagles.usm.edu email address. Further information regarding testing times, locations, and fees can be found at the BTLE website for USM (www.usm.edu/btle).

2.4 Degree Requirements: Cumulative Credit Hour Requirements

In addition to the course requirements for the General Education and Program Curriculums, a student must also satisfy the following cumulative credit hour requirements. In particular, transfer students should be aware of these degree requirements when developing their plan of study.

1. Hours to Degree: at least 124 hours are needed to graduate with either a Mathematics or Mathematics Licensure BS degree.

2. Hours at Senior College: at least 62 hours applied to the major must be earned from a senior college.

3. Hours at 300-level: at least 45 hours must be a result of taking courses at the 300-level or above.

4. Hours in Major Area: at least 12 hours in the major area must be from the University of Southern Mississippi.

5. Hours at USM: The last 31 hours of coursework must be earned from the University of Southern Mississippi.

2.5 Course Requirements: Minor in Mathematics

Students pursuing a minor in mathematics must complete a minimum of 18 hours of mathematics courses to include at least 6 hours taken at The University of Southern Mississippi. Only those courses that count toward the major in mathematics can count in the minor in mathematics, with the exception of MAT 430 and 431, which do count in the minor but not in the major. *Note that while MAT 167 is required for a major in mathematics, it is part of the General Education Curriculum requirements and is not considered to count towards a minor in mathematics.* Students seeking a minor in mathematics are encouraged to consult a faculty adviser in the Department of Mathematics.

2.6 Course Requirements: Mathematics Endorsement

To earn a mathematics endorsement, elementary education majors must take 21 hours of mathematics courses. A grade of C or better is required in each course. The courses suggested by the Department of Mathematics are given in the table below.

MATHEMATICS ENDORSEMENT	Courses	
Suggested Courses	1.1 MAT 101	☐
	1.2 MAT 210	☐
	1.3 MAT 309	☐
	1.4 MAT 310	☐
	1.5 CIE 301	☐
	1.6 *Choose 6 hours from the following:* 1. Either MAT 103 or MAT 128 (Only one course may be used) 2. MAT 410 3. MAT 167 4. MAT 481 5. MAT 168 6. MAT 340	☐

Table 5: Curriculum for Mathematics Endorsement (Elementary Education)

2.7 Sample Programs of Study

The following section contains sample programs of study for both traditional and transfer students pursuing both the Mathematics and Mathematics Licensure BS degrees. These programs are not requirements, but are intended to be used as guidelines to aid students in completing all degree requirements in the course of 4 years.

2.7.1 Traditional Student: Mathematics BS

The following table illustrates a sample program of study for a traditional student pursuing a Mathematics BS degree.

Freshman Year				Sophomore Year			
Fall Semester		Spring Semester		Fall Semester		Spring Semester	
Course	*Hours*	*Course*	*Hours*	*Course*	*Hours*	*Course*	*Hours*
MAT 167	3	MAT 168	3	MAT 169	3	MAT 280	3
MAT 340	3	MAT 326	3	(GEC 8)	3	MAT 285	3
ENG 101	3	ENG 102	3	ENG 203	3	(GEC 4)	3
(GEC 2.1(b))	4	(GEC 3.1)	3	CSC 101/L	4	PHY 201/L	5
Elective	3	Elective	3	(GEC 3.3)	3	Elective	3
Total	16	Total	15	Total	16	Total	17
Junior Year				Senior Year			
Fall Semester		Spring Semester		Fall Semester		Spring Semester	
Course	*Hours*	*Course*	*Hours*	*Course*	*Hours*	*Course*	*Hours*
MAT 305	3	MAT 423	3	MAT Elective	3	MAT 481	3
MAT 320	3	(GEC 3)	3	ENG 333	3	MAT Elective	3
(GEC 5)	3	Elective	3	Elective	3	Elective	3
Elective	3	Elective	3	Elective	3	Elective	3
Elective	3	Elective	3	Elective	3	Elective	3
Total	15	Total	15	Total	15	Total	15

Table 6: Sample program of study for a Mathematics BS student

There are few things to note about the sample program shown. Recall that the electives must chosen be sufficient to fulfill the requirements for a minor in another discipline. Also, ENG 333 may be substituted for another approved writing intensive course.

2.7.2 Traditional Student: Mathematics Licensure

The following table illustrates a sample program of study for a traditional student pursuing a Mathematics Licensure BS degree.

Freshman Year				Sophomore Year			
Fall Semester		Spring Semester		Fall Semester		Spring Semester	
Course	*Hours*	*Course*	*Hours*	*Course*	*Hours*	*Course*	*Hours*
MAT 167	3	MAT 168	3	MAT 169	3	MAT 280	3
MAT 340	3	MAT 326	3	CMS 111	3	MAT 220	3
ENG 101	3	ENG 102	3	ENG 203	3	MAT 285	3
(GEC 2.1(b))	4	(GEC 3.1)	3	(DEG 2)	4	PHY 201/L	5
HIS 101	3	HIS 102	3	PSY 110	3	(GEC 4)	3
Total	16	Total	15	Total	16	Total	17
Junior Year				Senior Year			
Fall Semester		Spring Semester		Fall Semester		Spring Semester	
Course	*Hours*	*Course*	*Hours*	*Course*	*Hours*	*Course*	*Hours*
MAT 305	3	MAT 309	3	MAT 457/L	3	MAT 489	6
MAT 320	3	MAT 423	3	REF 400	3	MAT 490	6
MAT 370	3	MAT 420	3	REF 469	3		
PSY 374	3	MAT 481	3	MAT Elective	3		
CIS 313	3	CIS 302	3	Electives	2		
		SPE 400	3				
Total	15	Total	18	Total	15	Total	12

Table 7: Sample program of study for a Mathematics Licensure BS student

Note that to follow this program of study, students must successfully apply for admission into the licensure program by the beginning of their junior year.

2.7.3 Transfer Student: 2+2 agreement for Mathematics BS

USM maintains a 2+2 agreement with Mississippi Community/Junior Colleges to allow transfer students to obtain a Mathematics BS degree in 2 (additional) years. The following program of study is based on this agreement.

Mississippi Community/Junior College			
Freshman Year		Equivalent Coursework	
Course	*Hours*	*Course*	*Hours*
ENG 1113	3	**GEC 1.1** ENG 101	3
ENG 1123	3	**GEC 1.2** ENG 102	3
MAT 1613	3	**GEC 2.2** MAT 167	3
MAT 1623	3	**DEG 1.1** MAT 168	3
CSC 2134	4	**GEC 6.1** CSC 101/L	4
HIS 1113/HIS 1163	3	**GEC 3.3** HIS 101	3
HIS 1123/HIS 1173	3	**GEC 3.3** HIS 102	3
SOC 2213	3	**GEC 3.1** SOC 101	3
Select 1 course: ART 1113, MUS 1113, DAN 1113, SPT 2233	3	**GEC 4.1** *(courses)* ART 130, MUS 165, DAN 130, THE 100	3
Select 1 course (with lab): CHE 1214, CHE 1224, BIO 1134, BIO 1144, PHY 2514, PHY 2524	4	**GEC 2.1(b)** *(courses)* CHE 106/L, CHE 107/L, BIO 110/L, BIO 111/L, PHY 111/L, PHY 112/L	4
Total	32		
Sophomore Year		Equivalent Coursework	
Course	*Hours*	*Course*	*Hours*
ENG 2423	3	**GEC 3.2** ENG 203	3
MAT 2613	3	**DEG 1.1** MAT 169	3
MAT 2623	3	**DEG 1.2** MAT 280	3
MAT 2913	3	**DEG 1.4** MAT 285	3
SPT 1113	3	**GEC 8.1** CMS 111	3
PHY 2514	4	**GEC 2.1(a)** PHY 201/L	4
Select 1 course: PSC 1113, PSY 1513	3	**GEC 5.1** *(courses)* PS 101, PSY 110	3
Electives	8		
Total	30		

The University of Southern Mississippi							
Junior Year				Senior Year			
Fall Semester		Spring Semester		Fall Semester		Spring Semester	
Course	*Hours*	*Course*	*Hours*	*Course*	*Hours*	*Course*	*Hours*
MAT 340	3	MAT 305	3	ENG 333	3	MAT 481	3
MAT 326	3	MAT 423	3	MAT 320	3	MAT Elective	3
Elective	3	MAT Elective	3	Elective	3	Elective	3
Elective	3	Elective	3	Elective	3	Elective	3
Elective	4	Elective	3	Elective	4	Elective	3
Total	16	Total	15	Total	16	Total	15

Table 8: Sample program of study for Mathematics BS based on 2 + 2 Agreement

2.7.4 Transfer Student: 2+2 agreement for Mathematics Licensure BS

USM maintains a 2+2 agreement with Mississippi Community/Junior Colleges to allow transfer students to obtain a Mathematics (Licensure) BS degree in 2 (additional) years. The following program of study is based on this agreement.

Mississippi Community/Junior College			
Freshman Year		Equivalent Coursework	
Course	*Hours*	*Course*	*Hours*
ENG 1113	3	**GEC 1.1** ENG 101	3
ENG 1123	3	**GEC 1.2** ENG 102	3
MAT 1613	3	**GEC 2.2** MAT 167	3
MAT 1623	3	**DEG 1.1** MAT 168	3
HIS 1163	3	**GEC 3.3** HIS 101	3
HIS 1173	3	**GEC 3.3** HIS 102	3
Select 1 course: CSC 2134, CSC 2323	3/4	**DEG 2.1** *(courses)* CSC 101/L, CSS 240	3/4
Select 1 course: GEO 1113, SOC 2113, SOC 2213,	3	**GEC 3.1** *(courses)* GHY 101, SOC 101, ANT 101	3
Select 1 course: ART 1113, MUS 1113, DAN 1113, SPT 2233	3	**GEC 4.1** *(courses)* ART 130, MUS 165, DAN 130, THE 100	3
Select 1 course (with lab): CHE 1214, CHE 1224, BIO 1134, BIO 1144,	4	**GEC 2.1(b)** *(courses)* CHE 106/L, CHE 107/L, BIO 110/L, BIO 111/L,	4
Total	31/32		
Sophomore Year		Equivalent Coursework	
Course	*Hours*	*Course*	*Hours*
ENG 2423	3	**GEC 3.2** ENG 203	3
MAT 2613	3	**DEG 1.1** MAT 169	3
MAT 2623	3	**DEG 1.2** MAT 280	3
MAT 2913	3	**DEG 1.4** MAT 285	3
SPT 1113	3	**GEC 8.1** CMS 111	3
PHY 2514	4	**GEC 2.1(a)** PHY 201/L	3
PSY 1513	3	**GEC 5.1** PSY 110	3
Electives	6		
Total	28		

The University of Southern Mississippi			
Junior Year		Senior Year	
Course	*Hours*	*Course*	*Hours*
MAT 220	1	CIS 302	3
MAT 340	3	MAT 423	3
MAT 326	3	MAT 370	3
REF 400	3	SPE 400	3
PSY 374	3	MAT 4XX	3
CIS 313	3	MAT 457/L	4
MAT 309	3	MAT 489	6
MAT 320	3	MAT 490	6
MAT 420	3		
MAT 481	3		
MAT 305	3		
REF 469	3		
Total	34	Total	31

Table 9: Sample program of study for Mathematics Licensure BS based on 2 + 2 Agreement

Transferring students should apply for admission into the licensure program in the first semester of their junior year. It is strongly recommended that students complete the Praxis I examination prior to transferring (if required).

3 Undergraduate Policies (Departmental)

3.1 Departmental Scholarships

Each year, the Department of Mathematics offers scholarships for undergraduates pursuing a Mathematics or Mathematics Licensure BS degree. A Scholarship Committee composed of faculty members is appointed to review scholarship applications and determine the applicants which best fulfill the requirements of each scholarship. Though scholarship requirements vary, the Scholarship Committee expects that each recipient will be a full time student at the University of Southern Mississippi during the terms of the award. Additionally, a recipient's program of study should demonstrate significant depth in mathematics relative to his or her collegiate classification. Further details regarding scholarships (including requirements, application materials, and deadlines) are available on the website maintained by the department.

3.2 Honors

Students seeking to graduate with Latin Honors in mathematics (through the Honors College) must meet all requirements for Senior Honors as described in the Honors College Handbook. In addition, students must meet the departmental requirements. An Honors Committee composed of 3-4 faculty members is responsible for designing and administering the Honors Comprehensive Examination, reviewing the Prospectus, and hearing the defense of the Honors Thesis. Detailed guidelines and timelines for honors students are available in the *Undergraduate Honors Handbook*, located on the website maintained by the department.

3.3 Comprehensive Exam

All students pursuing a Mathematics BS or Mathematics Licensure BS are required to take a comprehensive exam, namely the ETS Major Field Test. Currently, the test is administered to students in the semester that they are enrolled in MAT 423. Details regarding the administration of the exam will be communicated through the MAT 423 instructor. Honors students should also read the section entitled "Comprehensive Exam" in the "Guidelines for Mathematics Honors Students".

3.4 Credit by Examination

The University of Southern Mississippi will allow students to earn credit by examination through Advanced Placement (AP) testing, the College-Level Examination Program (CLEP), or International Baccalaureate (IB) examination. All AP, CLEP, or IB scores should be

submitted to Admissions for credit evaluation. The following table indicates the amount of credit which can be earned.

Examination	Score	Credit
AP Course: Calculus, AB or BC	3	MAT 167 (3 hours)
AP Course: Calculus, AB or BC	4-5	MAT 167 & 168 (6 hours)
CLEP: College Algebra	50	MAT 101 (3 hours)
CLEP: Calculus, with Elementary Functions	50	MAT 167 (3 hours)
CLEP: Calculus, with Elementary Functions	*	MAT 167 & MAT 168 (6 hours)
IB: Advanced Math	4	MAT 167 (3 hours)
IB: Advanced Math	5-7	MAT 167 & MAT 168 (6 hours)

Table 10: Credit By Examination Table

3.5 Mathematics Placement Test

Students which do not meet a course prerequisite may use results of a placement test in lieu of the prerequisite. The results of the test will be one of the criteria that will determine in which class the student may enroll.

Course	Prerequisite course "C" or better	ACT Math sub-score	SAT Math sub-score	Compass Placement Test Module Scores
MAT 101 MAT 101E	MAT 099 (or equivalent)	≥ 20	≥ 490	Algebra ≥ 40
Mat 102 Mat 103 Mat 128	MAT 101 (or equivalent)	≥ 24	≥ 560	Algebra ≥ 42 College Algebra ≥ 52
Mat 314	Mat 103, Mat 128, (or equivalent)	≥ 24	≥ 560	Algebra ≥ 42 College Algebra ≥ 52 Trigonometry ≥ 46
MAT 167	Mat 103, Mat 128, (or equivalent)	≥ 26	≥ 600	Algebra ≥ 42 College Algebra ≥ 52 Trigonometry ≥ 46

Table 11: Placement Test Prerequisites

On the Hattiesburg campus, interested students should contact the office of the Department of Mathematics in order to schedule a testing time. On the Gulf Coast campus, contact

Dr. Harris (John.m.Harris@usm.edu) or Ms. Naquin (Marlene.Naquin@usm.edu) Students will need to bring their student ID (or something showing their name and ID # along with a photo ID). Appointments to take the test may be set up at any time during the semester.

4 Undergraduate Activities (Departmental)

4.1 Kappa Mu Epsilon

Kappa Mu Epsilon is a national mathematics honor society. Membership requirements include completion of at least three semesters of college work and three college mathematics courses above the level of College Algebra, to include MAT 167 (with at least one mathematics course taken at Southern Miss). In addition, GPAs at Southern Miss of at least 3.0 in mathematics and 2.85 overall are required. Initiations are held each spring. If you are interested in becoming a part of this group, contact the Department of Mathematics.

4.2 Student Research

Students pursuing both a Mathematics BS and Mathematics Licensure BS are encouraged to engage in active mathematical research. Any student interested in doing so should contact a faculty member in their interest area. Students would then work on mathematics problems under the direction of that senior faculty. Many times, this research results in conference presentations and publications in undergraduate research journals. In addition, students which are not enrolled in the honors program may want to consider pursuing an undergraduate thesis through the department. To do so, students should follow the guidelines in the *Undergraduate Honors Handbook* (located on the website maintained by the department), regarding preparation and defense of their thesis.

In addition to on-campus opportunities, the NSF (National Science Foundation) funds many REU (Research Experience for Undergraduates) programs. More information regarding REU programs can be found on the website for the NSF. Interested students should contact a faculty member on or before the fall semester of their Junior year.

A Courses and Course Schedules

This section contains information regarding courses and course scheduling in order to assist students in developing their plan of study.

A.1 Undergraduate Courses

A course description for each undergraduate course offered in the Department of Mathematics is given below:

MAT 099. Intermediate Algebra. 3 hrs.

Prerequisite(s): None.

Required of all entering freshmen with a substandard ACT mathematics score; does not satisfy any university core or degree requirements; arithmetic operations review, basic operations on polynomials, solving linear and quadratic equations and graphing linear and quadratic functions (CC 1233)

MAT 100. Quantitative Reasoning. 3 hrs.

Prerequisite(s): ACT Math subscore $\geq$ 20 or C or higher in MAT 099.

Logic, probability, finance. Satisfies no prerequisite for any other math course.

MAT 101. College Algebra. 3 hrs.

Prerequisite(s): Math ACT $\geq$ 20 or a grade of C or better in MAT 099.

Functions and graphs, linear equations and inequalities, non-linear equations, including exponential and logarithmic equations (CC 1313)

MAT 101E. Explorations in College Algebra. 3 hrs.

Prerequisite(s): Math ACT $\geq$ 20 or a grade of C or better in MAT 099.

Functions and graphs, linear equations and inequalities, non-linear equations, including exponential and logarithmic equations; taught using technology and group projects (CC 1313)

MAT 102. Brief Applied Calculus. 3 hrs.

Prerequisite(s): Math ACT $\geq$ 24 or a grade of C or better in MAT 101.

An introduction to differential and integral calculus with applications primarily related to business and finance (CC 1333, 1423, 1513)

MAT 103. Plane Trigonometry. 3 hrs.

Prerequisite(s): Math ACT $\geq$ 24 or a grade of C or better in MAT 101.

Trigonometric functions and their inverses, trigonometric identities and equations, and solutions of triangles (CC 1323)

MAT 128. Precalculus Mathematics. 3 hrs.

Prerequisite(s): Math ACT $\geq$ 24 or a grade of C or better in MAT 101.

Functions, analytic geometry, roots of polynomials and basic concepts of trigonometry

MAT 167. Calculus I with Analytic Geometry. 3 hrs.

Prerequisite(s): Math ACT $\geq$ 26 or a grade of C or better in MAT 103 or MAT 128.

Limits, continuity, derivatives and their applications including curve sketching and optimization (CC 1613)

MAT 168. Calculus II with Analytic Geometry. 3 hrs.

Prerequisite(s): MAT 167.

Definite and indefinite integrals, integration techniques, application of integrals, improper integrals and L'Hopital's rule (CC 1623)

MAT 169. Calculus III with Analytic Geometry. 3 hrs.

Prerequisite(s): MAT 168.

Sequences, series including Taylor series and power series, parametric equations and polar coordinates in calculus, vectors and the geometry of space (CC 2613)

MAT 210. Mathematics for Elementary Teachers I. 3 hrs.

Prerequisite(s): MAT 101.

Problem solving, sets, whole numbers and whole numbers operations, number systems and operations including different bases and contributions from diverse cultures, number theory, integers and integer operations (Open only to elementary and special education majors.) (CC 1723)

MAT 220. Explorations in the Mathematics Classroom. 1 hr.

Prerequisite(s): None

Ten hours of secondary classroom observations together with five hours of seminar under the direction of a mathematics faculty member

MAT 280. Multivariable Calculus. 3 hrs.

Prerequisite(s): MAT 169.

Calculus of vector valued functions including tangent and normal vectors, partial derivatives and applications, multiple integrals and applications (CC 2623)

MAT 285. Introduction to Differential Equations I. 3 hrs.

Prerequisite(s): MAT 168.

Linear ordinary differential equations with applications, and Laplace transforms

MAT 305. Mathematical Computing I. 3 hrs.

Prerequisite(s): MAT 280.

Introduction to a computer algebra system using calculus-based projects; students will solve mathematical problems in the MAPLE environment that require an understanding of calculus concepts

MAT 308. Mathematics for Early Childhood Education. 3 hrs.

Prerequisite(s): MAT 210.

Problem solving, ordering, comparing, classifying, numberless, money, time, measurement and geometry (Open only to elementary and special education majors.)

MAT 309. Mathematics for Elementary Teachers II. 3 hrs.

Prerequisite(s): MAT 210.

Problem solving, rational numbers and rational number operations, real numbers, ratios, proportions, percents, statistics and probability (Open only to elementary and special education majors and mathematics licensure majors.)

MAT 310. Mathematics for Elementary Teachers III. 3 hrs.

Prerequisite(s): MAT 210.

Problem solving, logic, basic concepts of 2-dimensional and 3-dimensional geometry, congruence and similarity of triangles and measurement (Open only to elementary and special education majors.)

MAT 314. Calculus for the Arts and Sciences. 3 hrs.

Prerequisite(s): Math ACT $\geq$ 24 or a grade of C or better in MAT 103.

An introduction to functions, graphs, continuity, differential and integral calculus, with applications to the arts and life sciences (A student who receives credit for any other calculus course cannot use this course to satisfy any degree requirements in the College of Science and Technology.)

MAT 320. Probability and Mathematical Statistics I. 3 hrs.

Prerequisite(s): MAT 169, 326, and 340.

Discrete distributions, random variables, independence, moment generating functions, continuous distributions and multivariate distributions

MAT 326. Linear Algebra I. 3 hrs.

Prerequisite(s): None.

Vector spaces, systems of linear equations, linear transformations, matrices and inner products

MAT 340. Discrete Mathematics. 3 hrs.

Prerequisite(s): None.

Logic, set theory and selected topics from algebra, combinatorics and graph theory

MAT 370. Introductory Geometry. 3 hrs.

Prerequisite(s): MAT 326 and 340.

Concepts and principles of Euclidean and non-Euclidean geometries in two and three dimensions, axiomatics and proof, coordinate geometry and vectors, congruence and similarity, transformations, concepts and formulas related to two and three-dimensional space. Reasoning and proof, communication, problem solving, connections, representations, and interactive geometry software are integrated throughout the course (Open only to those students preparing to teach mathematics in grades 7-12.)

MAT 410. Mathematics for Teachers of Junior High School Mathematics. 3 hrs.
Prerequisite(s): None.
The real number system and major subsystems, modular arithmetic, patterns, relations and functions, algebraic expressions and equations, counting techniques and probability; selected topics in geometry including coordinate geometry and transformations (Open only to elementary and special education majors.)

MAT 415. Introduction to Differential Equations II. 3 hrs.
Prerequisite(s): MAT 285, 326, and 340.
Systems of linear differential equations, operator methods, approximating solutions, Laplace transforms and power series

MAT 417. Introduction to Partial Differential Equations. 3 hrs.
Prerequisite(s): MAT 285, 326, and 340.
Integrability conditions, quasilinear equations, applications of physics, classification of second order equations and canonical forms, and separation of variables

MAT 418. Linear Programming. 3 hrs.
Prerequisite(s): MAT 326 and 340.
Convex sets, linear inequalities, extreme-point solutions, simplex procedure and applications

MAT 419. Optimization in Mathematical Programming. 3 hrs.
Prerequisite(s): MAT 280 and 418.
Selected topics in optimization from linear and nonlinear programming

MAT 420. Probability and Mathematical Statistics II. 3 hrs.
Prerequisite(s): MAT 320.
Central limit theorem, estimation and hypothesis tests

MAT 421. Number Theory. 3 hrs.
Prerequisite(s): MAT 326 and 340.
Induction, well-ordering, division algorithm, Euclidean algorithm, Fundamental Theorem of Arithmetic, number theoretic functions and congruences

MAT 423. Modern Algebra I. 3 hrs.
Prerequisite(s): MAT 326 and 340.

Elementary notions in groups, Fundamental Theorem of Finitely Generated Groups, permutation groups, quotient groups, isomorphism theorems and applications of transformation groups

MAT 424. Modern Algebra II. 3 hrs.

Prerequisite(s): MAT 423.

Survey of standard algebraic systems; rings, integral domains, fields, modules, polynomial rings and fields of quotients

MAT 426. Linear Algebra II. 3 hrs.

Prerequisite(s): MAT 326 and 340.

Determinants; polynomials; complex numbers; single linear transformations; orthogonal, unitary and symmetric linear transformations

MAT 430. Advanced Engineering Mathematics I. 3 hrs.

Prerequisite(s): MAT 280 and 285.

Introduction to Laplace transforms and Fourier series with emphasis on solving ordinary and simple partial differential equations (Does not count as an upper-level mathematics elective.)

MAT 431. Advanced Engineering Mathematics II. 3 hrs.

Prerequisite(s): MAT 430.

Vector calculus and an introduction to complex variables with emphasis on integral theorems and integration (Does not count as an upper-level mathematics elective.)

MAT 436. Theory of Functions of a Complex Variable. 3 hrs.

Prerequisite(s): MAT 280, 326, and 340.

Complex numbers and functions, limits, continuity, differentiation, analytic functions, branches, contour integration, and series

MAT 437. Graph Theory. 3 hrs.

Prerequisite(s): MAT 326 and 340.

An introduction to graphs and a sampling of their numerous and diverse applications

MAT 439. Combinatorics. 3 hrs.

Prerequisite(s): MAT 169, 326, and 340.

Counting and enumeration techniques, inversion formulas and their applications, and counting schemata relative to permutations of objects

MAT 441. Advanced Calculus I. 3 hrs.

Prerequisite(s): MAT 280, 326, and 340.

Point set theory, sequences, continuity, uniform continuity, limits, mean value theorems and L'Hospital's rule

MAT 442. Advanced Calculus II. 3 hrs.

Prerequisite(s): MAT 441.

Riemann integration, Taylor's theorem, improper integrals, infinite series and uniform convergence

MAT 457. Methods in Mathematics-Secondary. 3 hrs.

Prerequisite(s): CIS 313, MAT 280, 285, 326, and 340, PSY 374.

A course designed to give the students a knowledge of the objectives, curriculum problems and organization and methods of teaching secondary school mathematics (Does not count as an upper-level mathematics elective.)

MAT 457L. Methods in Mathematics-Secondary Laboratory. 1 hr.

Corequisite(s): MAT 457.

A practicum with a minimum of 15 contact hours in a school setting (Does not count as an upper-level mathematics elective.)

MAT 460. Numerical Analysis I. 3 hrs.

Prerequisite(s): MAT 280, 326, and knowledge of a programming language.

Methods of solving equations and systems of equations, error analysis and difference equations

MAT 461. Numerical Analysis II. 3 hrs.

Prerequisite(s): MAT 285 and 460.

Interpolating polynomials, numerical differentiation and integration, numerical solutions of differential equations, and roundoff error

MAT 472. Modern Geometry. 3 hrs.

Prerequisite(s): MAT 280, 326, and 340.

Heuristic and analytic treatment of a branch of modern geometry, such as projective or differential geometry

MAT 475. General Topology. 3 hrs.

Prerequisite(s): MAT 169, 326, and 340.

General topological spaces, bases and subbases, and continuity

MAT 481. History of Mathematics. 3 hrs.

Prerequisite(s): MAT 169, 326, and 340.

Historical development of number and number systems, measurement, algebra, Euclidean and non-Euclidean geometries, calculus, discrete mathematics, statistics and probability including contributions from diverse cultures to each of these mathematical branches. Reasoning and proof, communication, problem solving, connections, representations are integrated throughout the course (Does not count as an upper-level mathematics elective.)

MAT 485. Mathematical Modeling. 3 hrs.

Prerequisite(s): MAT 280, 285, 326, and a programming language.

An introduction to mathematical modeling using case studies; projects and presentations are required

MAT +489. Student Teaching in Mathematics I. 6 hrs.

Prerequisite(s): Approval of the director of student teaching. *Corequisite(s):* MAT 490

MAT +490. Student Teaching in Mathematics II. 6 hrs.

Prerequisite(s): Approval of the director of student teaching. *Corequisite(s):* MAT 489

MAT 492. Special Problems I, II. 1-3 hrs.

Prerequisite(s): Approval of department chair. Students undertaking a Senior Honors Project will enroll in MAT 492H

A.2 Tentative Four Year Schedules

Hattiesburg Campus. The table below provides a tentative four year schedule to assist students in planning their course of study. Note that courses MAT 167, 168, 169, 280, 326, and 340 will be offered every semester, not including summer. As a reference point, the year 2000 is an even year 1.

	Even Yr 1 - Odd Yr 1			Odd Yr 1 - Even Yr 2			Even Yr 2 - Odd Yr 2			Odd Yr 2 - Even Yr 3		
Course	Fall	Spr.	Sum.	Fall	Spr.	Sum.	Fall	Spr.	Sum.	Fall	Spr.	Sum.
MAT 285	X			X			X			X		
MAT 305	X			X			X			X		
MAT 320	X			X			X			X		
MAT 370	X			X			X			X		
MAT 410						X						X
MAT 415	X			X			X			X		
MAT 417		X			X			X			X	
MAT 418		X						X		X	X	
MAT 419			X						X			
MAT 420		X			X			X			X	
MAT 421			X						X			
MAT 423	X			X			X			X		
MAT 424		X			X			X			X	
MAT 426		X			X			X			X	
MAT 436		X			X			X			X	
MAT 437	X						X					
MAT 439	X						X					
MAT 441	X			X			X			X		
MAT 442		X			X			X			X	
MAT 457	X			X			X			X		
MAT 460	X			X			X			X		
MAT 461		X			X			X			X	
MAT 475									X			
MAT 481		X			X			X			X	
MAT 485			X									

Table 12: (Hattiesburg Campus) Tentative 4-year course schedule

B Forms and Handouts (Departmental)

This section contains the following departmental forms:

1. Exit Survey for Graduating Students
2. Request to Waive Course Prerequisite(s)

This section contains the following handouts:

1. Mathematics Student Survival Sheet
2. Guides for developing a 4-year plan

Exit Survey for Graduating Students

Name: (optional)_____

Permanent Address: _____

_____

Degree(s) earned at USM: B.S. _____ M.S. _____

Minor: Licensure (teaching) or _____

Campus: Hattiesburg _____ Gulf Coast _____ **Graduation Month & Year:** _____

Please indicate your level of agreement (1 = least, 5 = highest) with each statement as it describes your experience in mathematical studies at USM.

		1	2	3	4	5
1.	I gained an understanding of the breadth of the mathematical sciences and their interconnecting principles.	☐	☐	☐	☐	☐
2.	I learned how to construct and understand mathematical proofs.	☐	☐	☐	☐	☐
3.	I learned to read, write, listen and speak mathematically.	☐	☐	☐	☐	☐
4.	I think that I was adequately prepared for employment.	☐	☐	☐	☐	☐
5.	I think that I was adequately prepared for future study in mathematics.	☐	☐	☐	☐	☐
6.	I would recommend mathematics at USM to others interested in mathematics.	☐	☐	☐	☐	☐

Please indicate your level of satisfaction (1 = least, 5 = highest) with:

		1	2	3	4	5
7.	overall instruction in mathematics courses.	☐	☐	☐	☐	☐
8.	accessibility of mathematics instructors for conference or advisement.	☐	☐	☐	☐	☐
9.	quality of academics advisement.	☐	☐	☐	☐	☐
10.	overall academic major in mathematics.	☐	☐	☐	☐	☐
11.	overall instruction in non-mathematics courses.	☐	☐	☐	☐	☐
12.	enhancement of general intellectual and social development.	☐	☐	☐	☐	☐

Comments: (We are interested in your opinion about the mathematics program [what was good, bad, missing, etc.] and about influential instructors.)

_____

_____

_____

Request to Waive Course Prerequisite(s)

Course: _____ **Section:** _____

Name: _____ **Student ID Number:** _____

Prerequisite(s): ☐ (1) _____

☐ (2) _____

☐ (3) _____

Indicate by X *all prerequisites which are not met.*

Indicate Reason for Waiver

☐ Prerequisite Course in Progress

☐ Substitution for Prerequisite Course (Indicate Substitution) _____

☐ Advisor Recommendation (Advisor Signature) _____

☐ Other _____

Waiver Statement

The prerequisites indicated for the course above are chosen to best ensure student success, and to guide students in their planning and progress toward a degree. I understand and accept that by taking this course without meeting the prerequisites stated in the course description, I may encounter more difficulty.

Student Signature: _____ **Date:** _____

Faculty Member: _____ **Date:** _____

Department Chair: _____ **Date:** _____

Mathematics Student Survival Checklist

1. *Getting Started...*

   (a) **First Semester of Courses/Email Accounts/Student IDs/etc.**
   Many issues for new students will be taken care of during Preview. Preview is mandatory for all new degree-seeking students at Southern Miss. During Preview, you will obtain your student IDs, as well meet with an advisor from the Department of Mathematics to set up your schedule for your first semester.

   (b) **Getting an advisor**
   If there is any other set of circumstances in which you need to meet with an advisor, contact the office of the Department of Mathematics (information on back) to be assigned an advisor.

2. *Settling in...*

   (a) **For Licensure Students:** After your first year, you should begin to discuss with your advisor the process of applying for admission to the teacher education program and obtaining a "Gold Card", so that you will be successfully enrolled by the beginning of your junior year.

   (b) **For Non-Licensure Students:** After your first year, you should begin to dicuss with your advisor a choice of minor.

   (c) **Start a Research Project** Working on a research project is a great way to enrich your studies. During your sophomore year, talk with different faculty members to find a research area which interests you. They may have problems available to work on, or at the least, can point you to an REU (a summer research opportunity) that you may apply to which would fit your interests.

   (d) **Applying for Scholarships** If you are a student in good standing, and have not already done so, try applying for a scholarship from the Department of Mathematics.

3. *Finishing up ...*

   (a) **Graduation requirements** Before graduating, you will need to formally apply for graduation in the semester preceding your expected graduation date. The required forms are available at the website for the office of the registrar. Make an appointment to meet with your advisor to complete the application.

(b) **Fill out an exit survey** Before you leave, be sure to fill out an exit survey. Let us know what experiences were great, or what may need improvement. We definitely want to get your input.

Contacting the Department If you are on-campus, visit the office of the Department of Mathematics in room 319 of Southern Hall. To contact the department from off campus, use the information below:

The Department of Mathematics
The University of Southern Mississippi
118 College Drive #5045
Hattiesburg, MS 39406-0001

Phone: 601.266.4289
Fax: 601.266.5818
Email: mathdept@usm.edu

In addition, the website for the Department of Mathematics is located at www.usm.edu/math.

		Year 1			Year 2			Year 3			Year 4		
REQ ##	Course	Fall	Spr.	Sum.	Fall	Spr.	Sum.	Fall	Spr.	Sum.	Fall	Spr.	Sum.
GEC 01	ENG 101												
GEC 01	ENG 102												
GEC 02	PHY 201/L												
GEC 02													
GEC 02	MAT 167												
GEC 03													
GEC 03	ENG 203												
GEC 03													
GEC 03													
GEC 04													
GEC 05													
GEC 06	CSC 101/L												
GEC 07													
GEC 08													
DEG 01	MAT 168												
DEG 01	MAT 169												
DEG 01	MAT 280												
DEG 01	MAT 285												
DEG 01	MAT 305												
DEG 01	MAT 320												
DEG 01	MAT 326												
DEG 01	MAT 340												
DEG 01	MAT 423												
DEG 01	MAT 481*												
DEG 01													
DEG 01													
DEG 02													
DEG 02													
DEG 02													
DEG 02													
DEG 02													
DEG 02													
DEG 02													

Table 13: Guide for developing 4-year Plan (Non-licensure)

		Year 1			Year 2			Year 3			Year 4		
REQ ##	Course	Fall	Spr.	Sum.	Fall	Spr.	Sum.	Fall	Spr.	Sum.	Fall	Spr.	Sum.
GEC 01	ENG 101												
GEC 01	ENG 102												
GEC 02	PHY 201/L												
GEC 02													
GEC 02	MAT 167												
GEC 03													
GEC 03	ENG 203												
GEC 03	HIS 101												
GEC 03	HIS 102												
GEC 04													
GEC 05	PSY 110												
GEC 08	CMS 111												
DEG 01	MAT 168												
DEG 01	MAT 169												
DEG 01	MAT 280												
DEG 01	MAT 285												
DEG 01	MAT 305												
DEG 01	MAT 309												
DEG 01	MAT 320												
DEG 01	MAT 326												
DEG 01	MAT 340												
DEG 01	MAT 370												
DEG 01	MAT 420												
DEG 01	MAT 423												
DEG 01	MAT 481*												
DEG 01													
DEG 02													
DEG 03	CIS 302												
DEG 03	CIS 313												
DEG 03	MAT 220												
DEG 03	MAT 457/L												
DEG 03	MAT 489												
DEG 03	MAT 490												
DEG 03	PSY 374												
DEG 03	REF 400												
DEG 03	REF 469												
DEG 03	SPE 400												

Table 14: Guide for developing 4-year Plan (Licensure)