ACCELERATED DUAL DEGREES IN MATHEMATICS, B.S./M.S.

Accelerated Dual Degrees in Bachelor of Science and Master of Science in Mathematics

Credits: 152 CIP Code: 270101

Program Description

The Accelerated Dual Degrees in Bachelor of Science and Master of Science in Mathematics program prepare students to have high levels of proficiency in mathematics content to help them advance to a Ph.D. program in mathematics or mathematics-related fields or to qualify for careers in industry, government, and education.

Admissions Requirements

Applicants must meet the General Admissions Requirements of Clark Atlanta University as published in the Undergraduate and Graduate Catalogs. At the beginning of the second semester of the third year of study, students in the Bachelor of Science degree in Mathematics may apply for admission to the BS/MS program. The student must have a minimum grade point average of 3.0 and must also satisfy the General Graduate Program Admission requirements. If the student is accepted for the BS/ MS program, then he/she may begin graduate course work during his/ her fourth year of study while completing the undergraduate BS degree requirements. During the fifth year of study, students engage exclusively in graduate study. Students have the choice of two concentration tracks: Pure Mathematics concentration or Applied Mathematics concentration. Summer research activities may be available or required depending on the student's choice of research area and the availability of the faculty willing to work on the topic.

Student Learning Outcomes

Upon completion of the Accelerated Dual Degrees in Bachelor of Science and Master of Science in Mathematics Program a student should be able to:

- Demonstrate a high level of competency in mathematical reasoning and mathematical modeling of complex phenomena in many fields of science.
- Demonstrate a high level of proficiency in conducting mathematical research and presenting findings, in both written and oral forms, to scientific and general audiences.
- 3. Demonstrate a high level of competency in constructing proofs of major theoretical results in the field of mathematics.
- 4. Demonstrate a high level of proficiency in computing skills and mathematical approximations using standard mathematical software and other advanced technologies.

Degree Requirements

Students in the Accelerated Dual Degrees in Bachelor of Science and Master of Science in Mathematics Program should successfully complete all the requirements of the Bachelor of Science degree with a total of 122 credit hours and the Master of Science in Mathematics requirement of 30 credit hours of graduate work. Students have the option of defending an acceptable thesis or completing elective graduate coursework. Elective courses for the undergraduate degree include Free Electives (6 credit hours) and Minor courses or Electives (18 credit hours).

Students must maintain a minimum cumulative grade point average of 3.0 to continue in the program. At any point during matriculation in this program, students may opt to pursue only the traditional Bachelor of Science Degree in Mathematics.

For Accelerated Dual Degrees in Bachelor of Science and Master of Science in Mathematics, students must satisfy the Bachelor of Science of Mathematics requirements plus Graduate requirements:

Undergraduate Requirements

CART 150

CHUM 230

CMUS 119

CMUS 120

CSTA 252

CPHIL 105

CPHI 221

Art Appreciation

Music Appreciation

Theater Appreciation

Introduction to Philosophy

World Music

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Code	Title	Hours
Required Mathe	matics Courses	
CMAT 111	Calculus I	4
CMAT 112	Calculus II	4
CMAT 211	Calculus III	4
CMAT 212	Differential Equations	3
CMAT 214	Linear Algebra	3
CMAT 311	Mathematical Logic	3
CMAT 321	Mathematical Prob & Stat I	3
CMAT 322	Mathematical Prob & Stat II	3
CMAT 325	Modern Algebra	3
CMAT 421	Advanced Calculus I	3
CMAT 422	Advanced Calculus II	3
CMAT 423	Intro to Complex Variables I	3
CMAT 427	Intro to Toplogy I	3
CMAT 475	Seminar I	3
CMAT 476	Seminar II	3
Mathematics Ele	ectives	
Select 12 credits	s of the following:	12
CMAT 443	Intro to Operations Research	
CMAT 440	Numerical Analysis	
CMAT 471	Discrete Mathematical Stucture	
CMAT 106	Pre-Calculus II	
CMAT XXX	Elective (200 level or higher)	
CMAT XXX	Elective (300 or 400 level)	
Total Hours		60
General Educ	cation Courses	
Code	Title	Hours
Area A: Humanit	ties/Fine Arts	
Select two of the	e following:	6
CHIS 201	United States,Africa & World	
CHIS 202	United States, Africa & World	
CHIS 211	History of the United States	
CHIS 212	History of the United States	

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CPHI 241	Philosophy of Religion	
CREL 101	The Biblical Heritage	
CREL 103	Afr Amer Religious Experiences	
CREL 104	Afr Amer Religious Experience	
CREL 250	Comparative Religion	
Area B: Social/B	ehavioral Sciences	
Select two of the	e following:	6
CPSC 219	American Govern & Politics	
CPSY 211	General Psychology	
CPSY 218	Human Growth & Development	
CSCJ 215	Intro. to Sociology	
CSCJ 216	Intro. to Anthropology	
CSCJ 218	Contemporary Social Problems	
Area C: Natural S	Science/Mathematics/Statistics	
Select two of the	e following:	8
CBIO 111	General Biology I & Lab	
CBIO 112	General Biology II & Lab	
CCHE 111	Gen Chem 1 & Recitation	
CCHE 112	Gen Chem II Lec & Recitation	
CPHY 121	Physics I: Mechanics	
CPHY 122	Physics II: Elec & Magnetism	
CPHY 123	Physics III:Optics/Modern Phys	
Area D: Commur	nication	
Select nine cred	its of the following:	9
CENG 105	College Composition I	
& CENG 106	and College Composition II	
CENG 201	Intro to World Literature I	
CENG 202	Intro to World Literature II	
CFLX 101	Elementary Foreign Language I	
CFLX 102	Elementary Foreign Language II	
CFLX 201	Intermediate I	
CFLX 202	Intermediate II	
Area E: Financia	l/Technological	
CCIS 105	Programming Principles I	4
& 105L	and Programming Principles I Lab	
Select one of the	e following:	3
CCIS 100	Info. Technology & Comp. App.	
CCIS 101	Introduction to Computers	
CCIS 253	Intro. to Comp. Sim/Analysis	
CCIS 121	Introduction to Computer Sys	
CECO 107	Introduction to Economics	
CECO 251	Principles of Macroeconomics	
CPHI 262	Sci, Tech, & Human Values	
CEDC 262	Educational Technology	
Total Hours		36

University Required Courses

Code	Title	Hours
CGED 100	First Year Seminar	1
CGED 101	1st-Year Seminar	1
Total Hours		2

Free Electives: 6 credits

Any number of courses in Area A, Area B, Area C, Area D, or Mathematics courses which the student has not taken as a required Mathematics elective or general course can be a free elective. Courses that are not listed in areas of A, B,C,D or E may also qualify as a free elective course, but for such courses, the student is required to get the approval of the departmental advisor.

Minor Electives: 18 Credits

Electives should be chosen in consultation with the advisor depending on the choice of minor.

Required Graduate Courses

Code	Title	Hours	
Pure Mathematics Concentration			
CMAT 521	Real Analysis I	3	
CMAT 522	Real Analysis II	3	
CMAT 523	Complex Variables I	3	
CMAT 524	Complex Variables II	3	
CMAT 525	Algebra I	3	
CMAT 526	Algebra II	3	
CMAT 527	Topology I	3	
CMAT XXX	Graduate Mathematics Elective	3	
CMAT 675	Thesis Seminar I (or CMAT XXX, Graduate Elective)	3	
CMAT 676	Thesis Seminar II (or CMAT XXX, Graduate Elective)	3	
Total Hours		30	
Code	Title	Hours	
Code Applied Mather	Title natics Concentration	Hours	
Code Applied Mather CMAT 521	Title natics Concentration Real Analysis I	Hours 3	
Code Applied Mather CMAT 521 CMAT 522	Title natics Concentration Real Analysis I Real Analysis II	Hours 3 3	
Code Applied Mather CMAT 521 CMAT 522 CMAT 523	Title natics Concentration Real Analysis I Real Analysis II Complex Variables I	Hours 3 3 3	
Code Applied Mather CMAT 521 CMAT 522 CMAT 523 CMAT 524	Title matics Concentration Real Analysis I Real Analysis II Complex Variables I Complex Variables II	Hours 3 3 3 3 3	
Code Applied Mather CMAT 521 CMAT 522 CMAT 523 CMAT 524 CMAT 527	Title natics Concentration Real Analysis I Real Analysis II Complex Variables I Complex Variables II Topology I	Hours 3 3 3 3 3 3 3	
Code Applied Mather CMAT 521 CMAT 522 CMAT 523 CMAT 524 CMAT 527 CMAT 521	Title matics Concentration Real Analysis I Real Analysis II Complex Variables I Complex Variables II Topology I Principles of Applied Math I	Hours 3 3 3 3 3 3 3 3 3	
Code Applied Mather CMAT 521 CMAT 522 CMAT 523 CMAT 524 CMAT 527 CMAT 541 CMAT 542	Title matics Concentration Real Analysis I Real Analysis II Complex Variables I Complex Variables I Topology I Principles of Applied Math I Principles of Applied Math II	Hours 3 3 3 3 3 3 3 3 3 3 3 3	
Code Applied Mather CMAT 521 CMAT 522 CMAT 523 CMAT 524 CMAT 527 CMAT 541 CMAT 542 CMAT 542	Title natics Concentration Real Analysis I Real Analysis II Complex Variables I Complex Variables I Topology I Principles of Applied Math I Principles of Applied Math II Graduate Mathematics Elective	Hours 3 3 3 3 3 3 3 3 3 3 3 3 3	
Code Applied Mather CMAT 521 CMAT 522 CMAT 523 CMAT 524 CMAT 527 CMAT 541 CMAT 541 CMAT 542 CMAT 542 CMAT 675	Title Title Title Real Analysis I Real Analysis II Complex Variables I Complex Variables I Topology I Principles of Applied Math I Principles of Applied Math II Graduate Mathematics Elective Thesis Seminar I (or CMAT XXX, Graduate Elective)	Hours 3 3 3 3 3 3 3 3 3 3 3 3 3	
Code Applied Mather CMAT 521 CMAT 522 CMAT 523 CMAT 524 CMAT 527 CMAT 541 CMAT 542 CMAT 542 CMAT 675 CMAT 675	Title Title Title Real Analysis I Real Analysis I Complex Variables I Complex Variables I Topology I Principles of Applied Math I Graduate Mathematics Elective Thesis Seminar I (or CMAT XXX, Graduate Elective) Thesis Seminar II (or CMAT XXX, Graduate Elective)	Hours 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	

Plan of Study for Accelerated Dual Degree in B.S. and M.S. in Mathematics

Pure Mathematics Concentration

Course	Title	Hours
First Year		
First Semester		
CENG 105	College Composition I (Area D)	3
CGED 100	First Year Seminar	1

Area A: Humanities/	(Fine Art (see list)	3
CMAT 106	Pre-Calculus II	3
Area B: Social/Beha	vioral Sciences (see list)	3
Area E: Financial/te	chnological (see list)	3
	Hours	16
Second Semester		
CENG 106	College Composition II (Area D)	3
CGED 101	1st-Year Seminar	1
Area A: Humanities/	'Fine Arts	3
CMAT 111	Calculus I	4
Free Elective		3
CXXX Minor/ Free E	lective	3
	Hours	17
Second Year		
First Semester		
CMAT 112	Calculus II	4
CMAT 214	Linear Algebra	3
Area C: Natural Scie	nce	4
CMAT XXX	Math Elective (200 or Higher)	3
CXXX Minor/ Free e	lective	3
	Hours	17
Second Semester		
CMAT 212	Differential Equations	3
CMAT 211	Calculus III	4
CCIS 105	Programming Principles I	4
& 105L	and Programming Principles I Lab (Area E)	
CMAT 311	Mathematical Logic	3
CXXX Minor/ Free E	lective	3
	Hours	17
Third Year		
First Semester		
	tion	
Area D: Communica	lion	3
Area D: Communica CXXX Mino/ Free Ele	ective	3 3
Area D: Communica CXXX Mino/ Free Ele CMAT 321	ective Mathematical Prob & Stat I	3 3 3
Area D: Communica CXXX Mino/ Free Ele CMAT 321 CMAT 325	ective Mathematical Prob & Stat I Modern Algebra	3 3 3 3
Area D: Communica CXXX Mino/ Free Ele CMAT 321 CMAT 325 CMAT 421	ective Mathematical Prob & Stat I Modern Algebra Advanced Calculus I	3 3 3 3 3
Area D: Communica CXXX Mino/ Free Ele CMAT 321 CMAT 325 CMAT 421	ective Mathematical Prob & Stat I Modern Algebra Advanced Calculus I Hours	3 3 3 3 3 15
Area D: Communica CXXX Mino/ Free Ele CMAT 321 CMAT 325 CMAT 421 Second Semester	ective Mathematical Prob & Stat I Modern Algebra Advanced Calculus I Hours	3 3 3 3 3 15
Area D: Communica CXXX Mino/ Free Ele CMAT 321 CMAT 325 CMAT 421 Second Semester CMAT 322	Advanced Calculus I Hours Mathematical Prob & Stat II	3 3 3 3 15 3
Area D: Communica CXXX Mino/ Free Ele CMAT 321 CMAT 325 CMAT 421 Second Semester CMAT 322 CMAT 422	Advanced Calculus I Mathematical Prob & Stat I Advanced Calculus I Advanced I Prob & Stat II Advanced Calculus II	3 3 3 3 15 3 3 3 3
Area D: Communica CXXX Mino/ Free Ele CMAT 321 CMAT 325 CMAT 421 Second Semester CMAT 322 CMAT 322 CMAT 422 Area C: Natural Scie	ective Mathematical Prob & Stat I Modern Algebra Advanced Calculus I Hours Mathematical Prob & Stat II Advanced Calculus II nce	3 3 3 3 3 15 3 3 3 4
Area D: Communica CXXX Mino/ Free Ele CMAT 321 CMAT 325 CMAT 421 Second Semester CMAT 322 CMAT 422 Area C: Natural Scie Area B: Social/Beha	ective Mathematical Prob & Stat I Modern Algebra Advanced Calculus I Hours Mathematical Prob & Stat II Advanced Calculus II nce vioral Sciences (see list)	3 3 3 3 3 15 3 3 3 4 3
Area D: Communica CXXX Mino/ Free Ele CMAT 321 CMAT 325 CMAT 421 Second Semester CMAT 322 CMAT 422 Area C: Natural Scie Area B: Social/Beha CXXX Minor/ Free E	Advanced Calculus I Mathematical Prob & Stat I Advanced Calculus I Hours Mathematical Prob & Stat II Advanced Calculus II nce vioral Sciences (see list) lective	3 3 3 3 15 3 3 3 4 3 3 3 3 3
Area D: Communica CXXX Mino/ Free Ele CMAT 321 CMAT 325 CMAT 421 Second Semester CMAT 322 CMAT 422 Area C: Natural Scie Area B: Social/Beha CXXX Minor/ Free E	Advanced Calculus I Advanced Calculus I Mathematical Prob & Stat II Hours Mathematical Prob & Stat II Advanced Calculus II nce vioral Sciences (see list) lective Hours	3 3 3 3 15 3 3 4 3 3 4 3 3 16
Area D: Communica CXXX Mino/ Free Ele CMAT 321 CMAT 325 CMAT 421 Second Semester CMAT 322 CMAT 422 Area C: Natural Scie Area B: Social/Beha CXXX Minor/ Free E	ective Mathematical Prob & Stat I Modern Algebra Advanced Calculus I Hours Mathematical Prob & Stat II Advanced Calculus II nce vioral Sciences (see list) lective Hours	3 3 3 3 15 3 3 3 4 3 3 3 16
Area D: Communica CXXX Mino/ Free Ele CMAT 321 CMAT 325 CMAT 421 Second Semester CMAT 322 CMAT 422 Area C: Natural Scie Area B: Social/Beha CXXX Minor/ Free E Fourth Year First Semester	Advanced Calculus I Mathematical Prob & Stat I Modern Algebra Advanced Calculus I Hours Mathematical Prob & Stat II Advanced Calculus II nce vioral Sciences (see list) lective Hours	3 3 3 3 15 3 3 3 4 3 3 3 16
Area D: Communica CXXX Mino/ Free Ele CMAT 321 CMAT 325 CMAT 421 Second Semester CMAT 322 CMAT 422 Area C: Natural Scie Area B: Social/Beha CXXX Minor/ Free E Fourth Year First Semester CXXX Minor/ Free E	Advanced Calculus I Mathematical Prob & Stat I Modern Algebra Advanced Calculus I Hours Mathematical Prob & Stat II Advanced Calculus II nce vioral Sciences (see list) lective Hours	3 3 3 3 15 3 3 4 3 3 4 3 3 16
Area D: Communica CXXX Mino/ Free Ele CMAT 321 CMAT 325 CMAT 421 Second Semester CMAT 322 CMAT 422 Area C: Natural Scie Area B: Social/Beha CXXX Minor/ Free E Fourth Year First Semester CXXX Minor/ Free E CMAT 423	Advanced Calculus I Advanced Calculus I Hours Mathematical Prob & Stat II Advanced Calculus I Advanced Calculus II Advanced Calculus II nce vioral Sciences (see list) lective Hours lective Intro to Complex Variables I	3 3 3 3 15 3 3 4 3 3 3 16 3 3 3
Area D: Communica CXXX Mino/ Free Ele CMAT 321 CMAT 325 CMAT 421 Second Semester CMAT 322 CMAT 422 Area C: Natural Scie Area B: Social/Beha CXXX Minor/ Free E Fourth Year First Semester CXXX Minor/ Free E CMAT 423 CMAT 427	Advanced Calculus I Mathematical Prob & Stat I Modern Algebra Advanced Calculus I Hours Mathematical Prob & Stat II Advanced Calculus II nce vioral Sciences (see list) lective Hours lective Intro to Complex Variables I Intro to Toplogy I	3 3 3 3 15 3 3 4 3 3 3 16 3 3 3 3 3
Area D: Communica CXXX Mino/ Free Ele CMAT 321 CMAT 325 CMAT 421 Second Semester CMAT 322 CMAT 422 Area C: Natural Scie Area B: Social/Beha CXXX Minor/ Free E Fourth Year First Semester CXXX Minor/ Free E CMAT 423 CMAT 427 CMAT 475	Advanced Calculus I Advanced Calculus I Hours Mathematical Prob & Stat II Advanced Calculus I Advanced Calculus II Advanced Calculus II nce vioral Sciences (see list) lective Hours lective Intro to Complex Variables I Intro to Toplogy I Seminar I	3 3 3 3 15 3 3 4 3 3 3 16 3 3 3 3 3 3 3 3 3

Second Semester		
Free Elective		3
CMAT XXX	Math elective (300 or 400 level)	3
Select one of the follo	owing:	3
CMAT 443	Intro to Operations Research	
CMAT 440	Numerical Analysis	
CMAT 471	Discrete Mathematical Stucture	
CMAT 476	Seminar II	3
	Hours	12
Fifth Year		
First Semester		
Fifth Year-Pure Mathe	ematics Concentration	
CMAT 521	Real Analysis I	3
CMAT 523	Complex Variables I	3
CMAT 525	Algebra I	3
CMAT 527	Topology I	3
CMAT 675	Thesis Seminar I (or Graduate Mathematics Elective (500 or 600 level))	3
	Hours	15
Second Semester		
CMAT 522	Real Analysis II	3
CMAT 524	Complex Variables II	3
CMAT 542	Principles of Applied Math II	3
Mathematics Elective	(500 or 600 level)	3
CMAT 676	Thesis Seminar II (or Graduate Mathematics Elective (500 or 600 level))	3
	Hours	15
	Total Hours	152

Applied Mathematics Concentration

Course	Title	Hours
First Year		
First Semester		
CENG 105	College Composition I (Area D)	3
CGED 100	First Year Seminar	1
Area A: Humanitie	es/Fine Art (see list)	3
CMAT 106	Pre-Calculus II	3
Area B: Social/Be	havioral Sciences (see list)	3
Area E: Financial/	technological (see list)	3
	Hours	16
Second Semester		
CENG 106	College Composition II (Area D)	3
CGED 101	1st-Year Seminar	1
Area A: Humanitie	es/Fine Arts	3
CMAT 111	Calculus I	4
Free Elective		3
CXXX Minor/ Free	Elective	3
	Hours	17
Second Year		
First Semester		
CMAT 112	Calculus II	4
CMAT 214	Linear Algebra	3

Area C: Natural Scien	ce	4
CMAT XXX	Math Elective (200 or Higher)	3
CXXX Minor/ Free ele	ective	3
	Hours	17
Second Semester		
CMAT 212	Differential Equations	3
CMAT 211	Calculus III	4
CCIS 105	Programming Principles I	4
& 105L	and Programming Principles I Lab (Area E)	
CMAT 311	Mathematical Logic	3
CXXX	Minor Elective	3
	Hours	17
Third Year		
First Semester		
Area D: Communicati	on	3
CXXX Minor/ Free Ele	ective	3
CMAT 321	Mathematical Prob & Stat I	3
CMAT 325	Modern Algebra	3
CMAT 421	Advanced Calculus I	3
	Hours	15
Second Semester		
CMAT 322	Mathematical Prob & Stat II	3
CMAT 422	Advanced Calculus II	3
Area C: Natural Scien	ce	4
Area B: Social/Behav	ioral Sciences (see list)	3
CXXX Minor/ Free Ele	ective	3
	Hours	16
Fourth Year	Hours	16
Fourth Year First Semester	Hours	16
Fourth Year First Semester CXXX Minor/ Free Ele	Hours ective	16 3
Fourth Year First Semester CXXX Minor/ Free Ele CMAT 423	Hours ective Intro to Complex Variables I	16 3 3
Fourth Year First Semester CXXX Minor/ Free Ele CMAT 423 CMAT 427	Hours ective Intro to Complex Variables I Intro to Toplogy I	16 3 3
Fourth Year First Semester CXXX Minor/ Free Ele CMAT 423 CMAT 427 CMAT 475	Hours ective Intro to Complex Variables I Intro to Toplogy I Seminar I	16 3 3 3 3
Fourth Year First Semester CXXX Minor/ Free Ele CMAT 423 CMAT 427 CMAT 475	Hours ective Intro to Complex Variables I Intro to Toplogy I Seminar I Hours	16 3 3 3 3 12
Fourth Year First Semester CXXX Minor/ Free Ele CMAT 423 CMAT 427 CMAT 475 Second Semester	Hours ective Intro to Complex Variables I Intro to Toplogy I Seminar I Hours	16 3 3 3 3 12
Fourth Year First Semester CXXX Minor/ Free Elec CMAT 423 CMAT 427 CMAT 427 CMAT 475 Second Semester Free Elective	Hours ective Intro to Complex Variables I Intro to Toplogy I Seminar I Hours	16 3 3 3 3 12
Fourth Year First Semester CXXX Minor/ Free Ele CMAT 423 CMAT 427 CMAT 475 Second Semester Free Elective CMAT XXX	Hours Pective Intro to Complex Variables I Intro to Toplogy I Seminar I Hours Math elective (300 or 400 level) Period	16 3 3 3 12 3 3 3
Fourth Year First Semester CXXX Minor/ Free Ele CMAT 423 CMAT 427 CMAT 475 Second Semester Free Elective CMAT XXX Select one of the follo	Hours ective Intro to Complex Variables I Intro to Toplogy I Seminar I Hours Math elective (300 or 400 level) owing: Intro to Complexed by the second by the	16 3 3 3 3 12 3 3 3 3 3
Fourth Year First Semester CXXX Minor/ Free Elec CMAT 423 CMAT 427 CMAT 427 CMAT 475 Second Semester Free Elective CMAT XXX Select one of the follow CMAT 443	Hours ective Intro to Complex Variables I Intro to Toplogy I Seminar I Hours Math elective (300 or 400 level) owing: Intro to Operations Research Numerical Analysis	16 3 3 3 3 12 3 3 3 3 3
Fourth Year First Semester CXXX Minor/ Free Elec CMAT 423 CMAT 427 CMAT 427 CMAT 475 Second Semester Free Elective CMAT XXX Select one of the follo CMAT 443 CMAT 440	Hours Hours Hours Hours Hours Intro to Complex Variables I Intro to Toplogy I Seminar I Hours Math elective (300 or 400 level) owing: Intro to Operations Research Numerical Analysis Disperse Methometical Stuature	16 3 3 3 3 12 3 3 3 3
Fourth Year First Semester CXXX Minor/ Free Ele CMAT 423 CMAT 427 CMAT 427 CMAT 475 Second Semester Free Elective CMAT XXX Select one of the follo CMAT 443 CMAT 440 CMAT 471	Hours Hours Hours Hours Hours Intro to Complex Variables I Intro to Toplogy I Seminar I Hours Math elective (300 or 400 level) owing: Intro to Operations Research Numerical Analysis Discrete Mathematical Stucture Seminar II	16 3 3 3 3 12 3 3 3
Fourth Year First Semester CXXX Minor/ Free Elec CMAT 423 CMAT 427 CMAT 475 Second Semester Free Elective CMAT XXX Select one of the follo CMAT 443 CMAT 440 CMAT 471 CMAT 476	Hours Hours Hours Hours Hours Intro to Complex Variables I Intro to Toplogy I Seminar I Hours Math elective (300 or 400 level) owing: Intro to Operations Research Numerical Analysis Discrete Mathematical Stucture Seminar II Usure	16 3 3 3 3 12 3 3 3 3 3 3 3
Fourth Year First Semester CXXX Minor/ Free Elec CMAT 423 CMAT 427 CMAT 427 CMAT 475 Second Semester Free Elective CMAT XXX Select one of the follo CMAT 443 CMAT 440 CMAT 471 CMAT 476	Hours	16 3 3 3 12 3 3 3 3 3 3 3 12
Fourth Year First Semester CXXX Minor/ Free Elec CMAT 423 CMAT 427 CMAT 475 Second Semester Free Elective CMAT XXX Select one of the follo CMAT 443 CMAT 440 CMAT 471 CMAT 476 Fifth Year	Hours Hours Hours Hours Hours Hours Hours Hours Hous Hours	16 3 3 3 12 3 3 3 3 3 3 12
Fourth Year First Semester CXXX Minor/ Free Elec CMAT 423 CMAT 427 CMAT 475 Second Semester Free Elective CMAT XXX Select one of the follow CMAT 443 CMAT 440 CMAT 471 CMAT 476 Fifth Year First Semester	Hours Hours Hours Hours Hours Hours Intro to Complex Variables I Intro to Toplogy I Seminar I Hours Math elective (300 or 400 level) owing: Intro to Operations Research Numerical Analysis Discrete Mathematical Stucture Seminar II Hours Page Anglymic I	16 3 3 3 3 12 3 3 3 3 3 3 3 12
Fourth Year First Semester CXXX Minor/ Free Elec CMAT 423 CMAT 427 CMAT 427 CMAT 475 Second Semester Free Elective CMAT XXX Select one of the follow CMAT 443 CMAT 440 CMAT 471 CMAT 471 CMAT 476 Fifth Year First Semester CMAT 521 CMAT 522	Hours Hours Hours Hours Hours Intro to Complex Variables I Intro to Toplogy I Seminar I Hours Math elective (300 or 400 level) owing: Intro to Operations Research Numerical Analysis Discrete Mathematical Stucture Seminar II Hours Real Analysis I Complex Variables I	16 3 3 3 12 3 3 3 3 3 12 3 12
Fourth Year First Semester CXXX Minor/ Free Elec CMAT 423 CMAT 427 CMAT 427 CMAT 475 Second Semester Free Elective CMAT XXX Select one of the follow CMAT 443 CMAT 440 CMAT 440 CMAT 471 CMAT 476 Fifth Year First Semester CMAT 521 CMAT 523 CMAT 521	Hours Hours Hours Hours Hours Hours Intro to Complex Variables I Intro to Toplogy I Seminar I Hours Math elective (300 or 400 level) owing: Intro to Operations Research Numerical Analysis Discrete Mathematical Stucture Seminar II Hours Real Analysis I Complex Variables I Principles of Applied Math I	16 3 3 3 12 3 3 3 3 12 3 3 3 3 2 2
Fourth Year First Semester CXXX Minor/ Free Elec CMAT 423 CMAT 427 CMAT 427 CMAT 475 Second Semester Free Elective CMAT XXX Select one of the follow CMAT 443 CMAT 440 CMAT 440 CMAT 471 CMAT 476 First Semester CMAT 521 CMAT 523 CMAT 521 CMAT 523 CMAT 521	Hours Real Analysis I Complex Variables I Principles of Applied Math I Topology J	16 3 3 3 12 3 3 3 3 3 12 3 3 3 3 3 3 3 3 3
Fourth Year First Semester CXXX Minor/ Free Elec CMAT 423 CMAT 427 CMAT 475 Second Semester Free Elective CMAT XXX Select one of the follow CMAT 443 CMAT 440 CMAT 440 CMAT 471 CMAT 471 CMAT 521 CMAT 521 CMAT 523 CMAT 521 CMAT 523 CMAT 521 CMAT 527 CMAT 527 CMAT 675	Hours Hours Hours Hours Hours Hours Intro to Complex Variables I Intro to Toplogy I Seminar I Hours Math elective (300 or 400 level) owing: Intro to Operations Research Numerical Analysis Discrete Mathematical Stucture Seminar II Hours Real Analysis I Complex Variables I Principles of Applied Math I Topology I Thesis Seminar I (or Graduate Mathematica)	16 3 3 3 12 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
Fourth Year First Semester CXXX Minor/ Free Elec CMAT 423 CMAT 427 CMAT 427 CMAT 475 Second Semester Free Elective CMAT XXX Select one of the follow CMAT 443 CMAT 440 CMAT 440 CMAT 471 CMAT 476 Fifth Year First Semester CMAT 521 CMAT 523 CMAT 523 CMAT 524 CMAT 527 CMAT 675	Hours Real Analysis I Complex Variables I Principles of Applied Math I Topology I Thesis Seminar I (or Graduate Mathematics Elective (500 or 600 level))	16 3 3 3 12 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3

	Total Hours	152
	Hours	15
CMAT 676	Thesis Seminar II (or Graduate Elective (500 or 600 level))	3
Mathematics Ele	ective (500 or 600 level)	3
CMAT 542	Principles of Applied Math II	3
CMAT 524	Complex Variables II	3
CMAT 522	Real Analysis II	3
Second Semeste	er	