

<b>Area 2 (3 courses)</b>		
ECO 3703	International Trade	3 hrs
ECO 4704	International Macroeconomics	3 hrs
ECO 4504	Public Economics	3 hrs
ECP 4403	Industrial Organization & Game Theory	3 hrs
ECP 4302	Environ. & Natural Res. Economics	3 hrs
STA 4322	Statistical Theory II	3 hrs

## 6. Exit Requirements

- Students must earn a grade of "C" (2.0) or better in each course applied towards the major as well as a 2.0 overall average.
- Computer Competency met by ECO 4451 or COP 3223.

## 7. Foreign Language Requirements (0-8 hrs)

**Admission:** Two years of one foreign language in high school, or one year of one foreign language in college (or equivalent proficiency exam) prior to graduation.

**Graduation:** none

## 8. Electives (variable)

Select primarily from upper level courses, with departmental advisor's approval.

## 9. University Minimum Exit Requirements

- A 2.0 UCF GPA
- 60 semester hours earned after CLEP awarded
- 48 semester hours of upper division credit completed
- 30 of the last 36 hours of course work must be completed in residency at UCF
- A maximum of 45 hours of extension, correspondence, CLEP, Credit by Exam, and Armed Forces credits permitted
- Complete the General Education Program, the Gordon Rule, the CLAST, and nine hours of Summer credit (if applicable)

**Total Semester Hours Required** 120 hrs

**Related Programs:** Applied Mathematics, Statistics

**Related Minors:** Statistics, Computer Science

### Transfer Notes:

- Courses taken at community colleges do not substitute for Upper Division courses
- Courses transferred must be formally evaluated for equivalency credit. The student must provide a course syllabus and any other supporting information with his/her petition for this evaluation.

**Acceptable Substitutes** for common program prerequisites if taken prior to transferring to UCF:

- COP 3223\*: may use any programming language course with a COP prefix.

### Program Academic Learning Compacts

- Program Academic Learning Compacts (student learning outcomes) for undergraduate programs are located at: [http://www.oas.ucf.edu/aic/academic\\_learning\\_compacts.htm](http://www.oas.ucf.edu/aic/academic_learning_compacts.htm)

## Four Year Plan of Study - B.S. Mathematics, Mathematical Economics Track

<b>Freshman</b>			
1st Term	16 hrs	2nd Term	16 hrs
ENC 1101* Composition 1	3	ECO 2023* Prin Microeconomics	3
Cult-Hist I*	3	MAC 2312 Calculus II	4
SPC 1600*	3	MHF 3302 Logic and Proof	3
MAC 2311* Calculus 1	4	ENC 1102*	3
STA 2023* Stat Methods 1	3	Art/Music/Lit*	3

<b>Sophomore</b>			
1st Term	15 hrs	2nd Term	16 hrs
ECO 2013 Prin Macroeconomics	3	ECO 3101 Intermed Micro	3
PHY 2048 & 2048L Physics*	4	MAP 2302 Dif Equations	3
MAC 2313 Calculus III	4	MAS 3106 Linear Algebra	4
MAS 3105 Matrix and Lin Algebra	4	Science*	3
		Cult-Hist II*	3

<b>Junior</b>			
1st Term	15 hrs	2nd Term	15 hrs
ECO 3203 Intermed Macro	3	MAP 4103 Math Modeling	3
Psy/Soc/Ant*	3	ECO 3410 Math Economics	3
STA 4321 Stat Theory 1	3	Area 1 or 2 Elective	4
Area 1 or 2 Elective	3	Area 1 or 2 Elective	3
**Elective	3	**Elective	3

<b>Senior</b>			
1st Term	15 hrs	2nd Term	15 hrs
ECO 4412 Econometrics	3	ECO 4451 Research Methods	3
MAA 4226 Adv Calculus 1	3	Area 1 or 2 Elective	3
Area 1 or 2 Elective	3	**Elective	3
Area 1 or 2 Elective	3	**Elective	3
**Elective	3	**Elective	3

\*GEP

\*\*General electives as required to reach 120 semester hours.

## MATHEMATICS - PURE TRACK (B.S.)

College of Sciences

Department of Mathematics, MAP 207, 407-823-6284

<http://math.ucf.edu>

E-mail: [math@mail.ucf.edu](mailto:math@mail.ucf.edu)

Contact: H. Martin, MAP 215A, 407-823-5700,

E-mail: [martin@math.ucf.edu](mailto:martin@math.ucf.edu)

The Department of Mathematics offers courses identified by a suffix of H for students in the Honors Program; e.g., MAC 2311H, MAC 2312H, MAC 2313H, and MAP 2302H.

**Admission Requirements** none

### Degree Requirements

- Students who change degree programs and select this major must adopt the most current catalog.
- All mathematics courses except MAC 2311, MAC 2312, MAC 2313, and MAP 2302 must either be taken from, or approved by the Department of Mathematics at UCF.
- Departmental Residency Requirement: at least 24 semester hours of regularly scheduled 3000-4000 level courses must be taken from the UCF Mathematics Department.
- Students must earn at least a "C" (2.0) in each required course.
- Co-op or internship credit cannot be used in this major.
- Students should consult with a departmental advisor.
- Courses designated in 1 (General Ed Program) and 2 (Common Program Prerequisites) are usually completed in the first 60 hours.

### 1. UCF General Education Program (36+2 hrs)

(Note: Certain courses must be selected for this major, bringing GEP hours above 36)

A. Communication Foundations	9 hrs
B. Cultural and Historical Foundations	9 hrs
C. Mathematical Foundations	
1. Select MAC 2311	4 hrs
2. Select COP 3502C	3 hrs
D. Social Foundations	6 hrs
E. Science Foundations	
1. Select PHY 2048 & L	4 hrs
2. Select a listed course	3 hrs

### 2. Common Program Prerequisites (15 hrs)

COP 3223*	Intro to Programming with C	3 hrs
MAC 2311	Calculus with Analytic Geo I	GEP
MAC 2312	Calculus with Analytic Geo II	4 hrs
MAC 2313	Calculus with Analytic Geo III	4 hrs
PHY 2048*&L	Physics for Sci & Eng I w/lab	GEP
PHY 2049*&L	Physics for Sci & Eng II w/lab	4 hrs

\*See Transfer Notes for possible substitutes

See "Common Prerequisites" in the Transfer and Transitions Services section (pg. 46) for more information.

### 3. Core requirements (48 hrs)

PHY 2048&L	Physics for Sci & Eng I w/lab	GEP
PHY 2049&L	Physics for Sci & Eng II w/lab	CPP
One course selected from		3 hrs
ENC 3241	Writing for the Tech Professional	
ENC 3310	Magazine Writing	
ENC 3311	Advanced Expository Writing	
STA 2023	Statistical Methods	3 hrs
MHF 3302	Logic and Proof in Mathematics	3 hrs
MAP 2302	Differential Equations	3 hrs
MAS 3105	Matrix & Linear Algebra	4 hrs
MAS 3106	Linear Algebra	4 hrs
MAP 4363	Applied Boundary Value Prob I	3 hrs
STA 4321	Statistical Theory I	3 hrs
MAS 4301	Abstract Algebra I	3 hrs
STA 4322	Statistical Theory II	3 hrs

# UCF Degree Programs

COP 3502C	Computer Science I	GEP
MAA 4226	Advanced Calculus I	4 hrs
MAA 4227	Advanced Calculus II	3 hrs
MAD 4203	Applied Combinatorics	3 hrs
MTG 4302	Introduction to Topology	3 hrs
MAP 4307	Appl of Complex Variables	3 hrs

## 4. Restricted Electives (3 hrs)

Biological or physical sciences electives 3 hrs

Note: Students must satisfy course prerequisites before enrolling

Select from PCB 3044, PCB 3063, PCB 4302C, PCB 4303C, CHM 2210, CHM 2046, PHY 3101, PHY 3323, PHY 4424

## 5. Departmental Exit Requirements

- Earn a grade of "C" (2.0) or better in each course required in the degree program (sections 2-4 above)
- Participate in an exit interview.
- Computer Competency met by COP 3502C
- Before applying to graduate, the CLAST must be completely satisfied.

## 6. Foreign Language Requirements

**Admission:** Two years high school or one year college language (or equivalent proficiency exam) prior to graduation.

**Graduation:** none

## 7. Electives (variable)

Select primarily from upper level courses, with departmental advisor's approval. May be outside of the department.

## 8. University Minimum Exit Requirements

- A 2.0 UCF GPA
- 60 semester hours earned after CLEP awarded
- 48 semester hours of upper division credit completed
- 30 of the last 36 hours of course work must be completed in residency at UCF
- A maximum of 45 hours of extension, correspondence, CLEP, Credit by Exam, and Armed Forces credits permitted
- Complete the General Education Program, the Gordon Rule, the CLAST and nine hours of Summer credit (if applicable)

**Total Semester Hours Required 120 hrs**

**Related Programs:** Statistics, Applied Math, Computer Science, Engineering, Math Education

**Related Minors:** Computer Science, Engineering, Math, Physics, Statistics

### Transfer Notes:

- Lower division courses taken at community colleges do not substitute for Upper Division courses.
- Courses transferred from private and out-of-state schools must be evaluated for equivalency credit. The student must provide all supporting information.

**Acceptable Substitutes** for common program prerequisites if taken prior to transferring to UCF:

- COP 3223\*: may use any programming course with a COP prefix.
- PHY 2048\* & PHY 2049 with labs: may use any PHY, CHM or BSC course with a lab designed for science majors; however, PHY 2048 & PHY 2049 with labs are core requirements and still must be taken.

### Program Academic Learning Compacts

- Program Academic Learning Compacts (student learning outcomes) for undergraduate programs are located at: [http://www.oegas.ucf.edu/alc/academic\\_learning\\_compacts.htm](http://www.oegas.ucf.edu/alc/academic_learning_compacts.htm)

### Suggested Plan of Study:

One of numerous possible plans of study. See program description for all requirements. Courses with an asterisk (\*) may be replaced by alternates in the same requirement. Consult a departmental advisor for alternate, new or more appropriate selections.

### Summer

Take Math Placement Test ~ <http://mathplacement.sdes.ucf.edu/>

Freshman Year		
Fall		Spring
ANT 2000* req# 1D2-GEP	3	BSC 1005* req#1E2 GEP 3
ENC 1101 Composition I	3	ENC 1102 Composition II 3
MAC 2311 Calc Anal Geo I	4	MAC 2312 Calc Anal Geo II 4
STA 2023 Stat Methods I	3	MHF 3302 Logic and in Math 3

Sophomore Year		
Fall		Spring
COM 1000* req# 1A3-GEP	3	POS 2041* req# 1D1-GEP 3
PHY 2048 Phy for Eng Sci I	3	MAP 2302 Dif Equations 3
PHY 2048L Phy L Eng Sci I	4	MAS 3106 Linear Algebra 4
MAC 2313 Calc Anal Geo III	1	PHY 2049 Phy for Eng Sci II 3
MAS 3105 Matrix and Lin Alg	4	PHY 2049L Phy L Eng Sci II 1

Junior Year		
Fall		Spring
COP 3223 Intro to Prog C	3	COP 3502C Computer Science I 3
MAP 4363 Ap Bound Prob I	3	MUL 2010* req# 1B2-GEP 3
MAS 4301 Algebraic Struct	3	MAP 4307 App complex var 3
Elective* Check restrictions	4	PCB 3063* req# 4-ResElect 3
Elective* Check restrictions	3	Elective* Check restrictions 4

Senior Year		
Fall		Spring
AMH 2010* req# 1B1-GEP	3	ARH 2050* req# 1B3-GEP 3
ENC 3241* req# 3-Core	3	MAA 4227 Adv Calculus II 3
MAA 4226 Adv Calculus I	4	MTG 4302 Intro to Topology 3
MAD 4203 Comb Thry	4	STA 4322 Stat Theory II 3
STA 4321 Stat Theory I	3	Elective* Check restrictions 4

## MATHEMATICS EDUCATION (B.S.)

### College of Education

### Department of Teaching and Learning Principles, ED 209

<http://education.ucf.edu/mathed>

**Program Coordinators:** Dr. Janet Andreasen, ED 123Q, 407-823-5430, E-mail: [jandreas@mail.ucf.edu](mailto:jandreas@mail.ucf.edu); Dr. Erhan Haciomeroglu, ED 115L, 407-823-4336, E-mail: [erhansh@mail.ucf.edu](mailto:erhansh@mail.ucf.edu)

### Admission Requirements

- Complete the University General Education requirements or its equivalent, i.e. an AA degree from an approved Florida community college or state university
- Have a minimum 2.5 overall GPA
- Pass all four parts of the General Knowledge Test and/or CLAST examination (no alternatives or waivers are accepted).
- Complete all Education Common Program Prerequisite courses with a minimum letter grade of "C-" (1.75) or better
- Meet the Gordon Rule Requirement.
- Meet the foreign language admission requirement.

### Degree Requirements

- Students should see an advisor prior to registering for classes
- The courses designated in 1. (General Education) and 2. (Education Common Program Prerequisites) should be completed prior to admission to the major and upper division education courses.
- This is a state-approved, initial teacher preparation program designed in compliance with Florida Statutes and State Board of Education Rule 6A-5.066. Degree requirements are subject to change based on state mandates.

### 1. UCF General Education Program (36+1 hrs)

A. Communication Foundation	(9 hrs)
1. ENC 1101 English Composition I	3 hrs
2. ENC 1102 English Composition II	3 hrs
3. Prefer SPC 1600 Fundamentals of Oral Communication	3 hrs
B. Cultural-Historical Foundation	(9 hrs)
1. Prefer: AMH 2010 U.S. History 1492-1877	3 hrs
2. Prefer: PHI 2010 Introduction to Philosophy	3 hrs
3. Prefer: AMH 2020 U.S. History 1877-present	3 hrs
C. Mathematical Foundation	(7 hrs)
1. Select MAC 2311 Calculus with Analytic Geometry I	4 hrs
2. Select: STA 2023 Statistical Methods I	3 hrs
D. Social Foundation	(6 hrs)
1. Prefer: POS 2041 American National Government	3 hrs
2. Prefer: PSY 2012 General Psychology	3 hrs
E. Science Foundation	(6 hrs)
1. Prefer: PSC 1121 Physical Science	3 hrs
2. Prefer: ANT 2511 The Human Species or BSC 1005 Biological Principles	3 hrs

Note: Students are advised to take the preferred courses.