



## GENERAL CURRICULUM IN MATHEMATICS or MATHEMATICS CONCENTRATIONS

### GENERAL CURRICULUM

*This is the default curriculum for students who do not declare a concentration.*

STAT 301 <b>or</b> STAT 305 <b>or</b> STAT 425.....	4
<b>Tracks</b> <sup>4</sup> .....	24

*Choose three tracks from the following list, with at least one track chosen from the first four tracks listed. A track consists of two paired courses representing depth of study with a particular focus.*

1. MATH 413 and 414
2. MATH 482 and (483 **or** 406)
3. MATH 406 and (413 **or** 440)
4. MATH 482 and (413 **or** 440)
5. MATH 304 and 404
6. MATH 335 and 435
7. MATH 344 and (416 **or** 418)
8. MATH 350 and (341 **or** 344)
9. MATH 408 and 409
10. MATH 437 and 453
11. MATH 442 and 443
12. MATH 451 and 452

<b>Approved Electives</b> <sup>5</sup> .....	16
--	----

*Select 16 units from the following electives.*

MATH 304, 335, 341, 344, 350, 404, 406, 408, 409, 413, 414, 416, 418, 419, 435, 437, 440, 442, 443, 451, 452, 453, 459 or 460, 461&462, 470, 475<sup>6</sup>, 476<sup>6</sup>, 482, 483;  
CSC/CPE 202, 203; CSC 349; PHYS 132 or 133, 211, 301, 302, 322, 323, 405, 408;  
STAT 301, 302, 305, 425, 426, 427

---

44

### PURE MATHEMATICS CONCENTRATION

MATH 408 Complex Analysis I .....	4
MATH 413 Introduction to Analysis II .....	4
MATH 440 Topology I .....	4
MATH 482 Abstract Algebra II .....	4
Select 3 courses from the following: .....	12

MATH 406, 409, 414, 435, 483

Select from the following: .....

MATH 350;

STAT 301 **or** STAT 305 **or** STAT 425

Select 16 units from the following: .....

MATH 304, 335, 341, 344, 350, 404, 406, 409, 414, 416, 418, 435, 437, 451, 452, 453, 459 **or** 460, 461&462, 470, 475, 483

---

48

<sup>4</sup>A single course cannot be used to satisfy multiple tracks.

<sup>5</sup> Consultation with advisor is recommended prior to selecting electives; bear in mind that selections may impact pursuit of post-baccalaureate studies and/or goals.

<sup>6</sup>Maximum 8 units combined between MATH 475 and 476.

<sup>7</sup>Only students in the Applied Mathematics concentration who are pursuing a Data Science minor should select Track B. To meet pre-requisites they should also take STAT 302, 331, and 419 as their Approved Electives.

<sup>8</sup>Students who select Track B should select the Statistics Category for their Approved Electives.

## APPLIED MATHEMATICS CONCENTRATION

MATH 304 Vector Analysis .....	4
MATH 344 Linear Analysis II .....	4
MATH 350 <b>or</b> CSC/CPE 202 .....	4
MATH 408 Complex Analysis I .....	4
MATH 413 Introduction to Analysis II .....	4
MATH 416 <b>or</b> MATH 418 .....	4
MATH 451 Numerical Analysis I .....	4
STAT 301 <b>or</b> STAT 305 <b>or</b> STAT 425 .....	4
<b>Tracks</b> <sup>7,8</sup> .....	12

*Select courses from one of the following tracks:*

#### Track A:

MATH 335, 406, 409, 414, 416, 418, 437, 452, 453, 460, 461&462, 476

#### Track B<sup>7,8</sup>:

DATA 301, 401; MATH 335 **or** 453

<b>Approved Electives</b> <sup>5,9</sup> .....	12
--	----

*Select 12 units from one of the following five categories, with at least one course at the 300 or 400 level.*<sup>8</sup>

#### Physics Category:

ASTR 301, 302, 326;

PHYS 132 or 133, 211, 301, 302, 303, 318, 322, 323, 405, 408, 412, 417

#### Statistics Category:

STAT 302, 305, 323, 330, 331, 334, 416, 417, 418, 419, 421, 423, 425, 426, 427

#### Computer Science Category:

CSC/CPE 202, 203, 357; CSC 225, 349, 448

#### Mechanical Engineering Category:

ME 211, 212, 302, 326, 341

#### Economics Category:

ECON 311, 312, 313, 403, 408, 409

---

56

### MATHEMATICS TEACHING CONCENTRATION

MATH 300 Technology in Math Educ .....	4
MATH 341 Theory of Numbers .....	4
MATH 419 Intro to the History of Math .....	4
MATH 423 Adv Mathematics for Teaching .....	4
MATH 442 Euclidean Geometry .....	4
MATH 443 Modern Geometries .....	4
MATH 482 Abstract Algebra II .....	4
SCM 300 <sup>10</sup> Early Field Experience .....	4
STAT 301 Statistics I .....	4
STAT 302 <b>or</b> STAT 305 <b>or</b> STAT 425 .....	4
Select from the following: .....	8

CSC/ CPE 202;

MATH 304, 335, 344, 406, 408, 413, 416, 435, 437, 440, 451, 459 **or** 460, 461&462, 470;

PHYS 132 **or** 133, 302

---

48

<sup>9</sup> Other choices are also possible and should be pre-approved on a substitution petition in consultation with an academic advisor. Approved Electives are to be taken outside of the Mathematics department and should have significant applications to mathematics.

<sup>10</sup>SCM 300 requires 45 hours of observations at local schools. Students should plan their schedules to have a four-hour block free during elementary school hours each week.