# Checksheet: B.S. in Mathematics, Applied Statistics Option (Tentative)

## Part 1  General Requirements  [43-47 credits]

### First Year Experience Course  [1 credit]

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<tr>
<td>SCI</td>
<td>I120</td>
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(Not required if student transfers with 18 or more credit hours.)

### Cultural Understanding  [3 credits]

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May be satisfied through Modern Foreign Language Requirement. See General Education Common Core Course Options for Math Majors for acceptable courses.

### Computer Science  [3-4 credits]

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Grade of C or better required. Course must be in a higher level programming language. Approved courses include CSCI 23000, N305, N311, N331, N335, N345. CSCI 23000 recommended. See advisor for approval of course not on list.

### Life and Physical Sciences  [13 credits]

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At least 4 courses selected from BIOL, CHEM, GEOL, PHYS, or AST. PHYS 15200 (or a more advanced physics course) must be one of the 4 required science courses. At least 1 course must contain a laboratory. See General Education Common Core Course Options for Math Majors list for acceptable courses. Grade of C- or better required in each course, except for at most one grade of D+ or D. The following courses are NOT acceptable: all AGR courses; AST A130; BIOL N100, N120, N200; CHEM C100, C101, C102, C110; GEOL G130; PHYS 01000, 10000, 14000, 20000, 21800, 21900.

Except for laboratory courses combined with corresponding lecture courses, 1 credit hour and, in general, 2 credit hour courses do not apply in this area.

### Additional Arts & Humanities or Social Sciences  [3 credits]

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A minimum of 120 credits must be completed for graduation. This total must include residence of at least 2 semesters at IUPUI and completion of at least 32 credits at IUPUI in courses at the 300-level or above.

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Want to learn more about careers in math? [ams.org/employment/undergrad.html](http://ams.org/employment/undergrad.html)
### Checksheet: B.S. in Mathematics, Applied Statistics Option

#### Part 2  Pure Mathematics Option Requirements

**Major Area:** A grade of C or better is required in each course.

G.P.A. in major courses must be 2.5 or above.

**Core Courses**  

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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| MATH 16500  | Anal. Geom. & Calculus I  
(F, S, SSI) (P: 15400 or 15900)                                            | 4       |
| MATH 16600  | Anal. Geom. & Calculus II  
(F, S, SSI) (P: 16500)                                                        | 4       |
| MATH 17100  | Multidimensional Math  
(F, S, SSI, SSII) (P: 15400 or 15900)                                      | 3       |
| MATH 26100  | Multivariate Calculus  
(F, S, SSI) (P: 16600 and 17100)                                           | 4       |
| MATH 26600  | Differential Equations  
(F, S, SSII) (P: 16600 & 17100, C: 26100)                                     | 3       |
| MATH 35100  | Linear Algebra  
(F, S) (P: 26100)                                                         | 3       |
| MATH 41400  | Numerical Methods  
(F) (P: 26600 & a high-level programming course)                          | 3       |
| MATH 42100** | Linear Prog & Opt Tech  
(F odd) or Discrete Mod  
(F even) or Applied Modeling  
(S) (P: 26100, PHYS 15200)                                                   | 3       |

**Probability and Statistics**  

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| STAT 35000  | 35000 or 51100  
(P: 15400 or 15900)                                                       | 3       |
| STAT 41600  | Probability  
(F) (P: 15400 or 15900)                                                   | 3       |
| STAT 41700  | Statistical Theory  
(S) (P: STAT 41600)                                                        | 3       |
| STAT 51200  | Applied Regression Anal  
(F) (P: STAT 41700)                                                        | 3       |
| STAT 42100** | Statistical Modeling Using R and SAS  
(F) (P: STAT 41700)                                                        | 3       |
| STAT        | Elective                                                                    | 3       |

**Minor Area**  

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>MATH 49200</td>
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<td>2 - 3</td>
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**Capstone Experience**  

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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| STAT 51200  | Statistical Theory  
(S) (P: STAT 41600)                                                        | 3       |
| STAT 42100** | Statistical Modeling Using R and SAS  
(F) (P: STAT 41700)                                                        | 3       |

Courses taken outside the School of Science and Liberal Arts must receive advisor's approval.

No more than 6 credits of clinical, athletic, or performing arts courses will be approved.

Independent Study (correspondence) courses for general electives up to a maximum of 12 credits may be taken with the permission of the Associate Dean for academic programs in the School of Science.

Courses taken on a pass/fail option will be applied only as general electives and not toward degree area requirements of the school or department.

**Signifies a new course that is expected to be approved for fall 2016.**