CSI & Applied Mathematics Planning Checklist (CSMAT)
DATA ANALYTICS CONCENTRATION
67 CREDIT PROGRAM

NAME: _________________________________ ID: ___________________________________

** General Education

- Arts
- Challenges for the 21st Century
- Foreign Language
- Humanities
- International Perspectives

** Mathematics & Statistics
- Mathematics & Statistics
- Natural Sciences
- Social Sciences
- US History
- Writing and Critical Inquiry

** Computer Systems and Science Core (19 Credits)

- ICSI 201: Intro to Computer Science (4) **
- ICSI 210: Discrete Structure (4) **
- ICSI 213: Data Structures (4) **
- ICSI 333: Prog. Hardware-Software Interface (4) **
- ICSI 403: Design and Analysis of Algorithms (3) **

** Pre/Co-requisite AMAT 112
** Pre-requisite ICSI 201
** Pre-requisite ICSI 213 / AMAT 220 recommended
** Pre-requisite ICSI 210 & ICSI 213 / AMAT 220 recommended

** Mathematics (15 Credits)

- AMAT 112 (4): Calculus I
- AMAT 113 (4): Calculus II
- AMAT 214 (4): Calculus of Several Variables
- AMAT 220 (3): Linear Algebra

** Pre-requisite AMAT 112
** Pre-requisite AMAT 113
** Pre-requisite AMAT 113

** Intensive System Software Development (3 Credits)

- ICSI 499: Capstone Project in CSI (3) **

** Pre-requisite at least 9 credits of 400 coursework

** Data Mining (6 Credit)

- ICSI 410: Database Systems (3)
- ICSI 431: Data Mining (3)

** Pre-requisite ICSI 210 & ICSI 213
** Pre-requisite AMAT 220 / Python and Stats recommended

** Probability for Statistics (6 Credits)

- AMAT 308 (3) [Spring] & AMAT 367 (3) OR
- AMAT 362 (3) and AMAT 363 (3)

Topics in Statistical Inference and Discrete Probability OR
Probability for Statistics and Statistics

** Advanced Level Statistics (9 Credits)

- ICSI 451: Bayesian Data Analysis (3) [Fall]
- AMAT 464: Applied Stochastic Processes (3) [Spring]
- AMAT 465: Applied Statistics (3) [Fall]

** Pre-requisite AMAT 214 and ICSI 201
** Pre-requisite One of AMAT 362 or 367 or 467
** Pre-requisite AMAT 220 and one of AMAT 308, 363, or 468

** Internship or Equivalent (3 Credits)

- ICSI 490: Internship in CSI (3) **
- ICSI 432: Network Science (3)
- ICSI 435: Artificial Intelligence (3)
- ICSI 436: Machine Learning (3)

** Permission of Internship Committee
** Pre-requisite AMAT 220 and ICSI 403 / Python and Stats recommended
** AMAT 220** or I CSI 311**; AMAT 367, ICSI 401 and ICSI 403
** AMAT 214**, AMAT 220**, AMAT 367**, and ICSI 401**.

** Electives (6 Credits)

- ICSI/ AMAT _________
- ICSI/ AMAT _________

ICSI Courses numbered 300-470 or 500-550, AMAT courses numbered 300-550

** Grade of C required to count in major

Revised 2021 March
### Year 1

- **Fall**
  - ICSI 201 (4)
  - AMAT 112 (4) (MATH)
  - ART (3)
  - WCI (3)

- **Spring**
  - ICSI 210 (4)
  - ICSI 213 (4)
  - AMAT 113 (4)
  - ELECTIVE (3)

**Total:** 14

### Year 2

- **Fall**
  - ICSI 311 (4)
  - ICSI 333 (4)
  - AMAT 220 (3)
  - FOREIGN LANG (3-5)

- **Spring**
  - AMAT 214 (4)
  - AMAT 308 (3)
  - HUMANITIES (3)
  - INTL PERSPECTIVES (3)

**Total:** 16

### Year 3

- **Fall**
  - ICSI 403 (3)
  - ICSI 410 (3)
  - AMAT 367 (3)
  - SOCIAL SCIENCES (3)

- **Spring**
  - ICSI 404 (3)
  - ICSI 431 (3)
  - AMAT 464 (3)
  - NAT SCIENCE (3)

**Total:** 15

### Year 4

- **Fall**
  - ICSI 300+ ELECTIVE (3)
  - ICSI 451 (3)
  - AMAT 465 (3)

- **Spring**
  - ICSI 490 (3) or Equivalent
  - ELECTIVE (3)
  - ELECTIVE (3)

**Total:** 15

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**COURSE RECOMMENDATIONS:**

- Year 1: 14-16 credits
- Year 2: 16 credits
- Year 3: 15 credits
- Year 4: 15 credits

Revised 2021 March