Student: Advisor: Date: 12/23/2022

# **B.S. Information Sciences + Data Science (BSIS + DS)**

*Guide for course planning for the BS IS + DS Major.* *Meet with an iSchool Advisor to confirm requirements.* <https://ischool.illinois.edu/degrees-programs/undergraduate/bs-data-science>

## General Education Requirements

GenEds required of all undergraduate students at ILLINOIS,

managed by each college (iSchool requirements listed)

*Some courses count as multiple GenEds and/or in IS Major*

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| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  **Composition I** *RHET or CMN or ESL* |  |  |  **Quantitative Reasoning I & II** |   *Completed with MATH 220/221/234 & STAT 107 & STAT 207* |  |  |
|  |  **Advanced Composition***Take After Comp. I (IS 312 & INFO 303 approved)* |  |   |  |  |  |  |
|  |  |  |   |  **Social & Behavioral Sciences** |  |  |  |
|  |  **Western** *1 Course (IS 266 Approved)* |  |   | *Completed with IS 101 & IS 202* |  |  |  |
|  |  **Non-Western** *1 Course* |  |  |  **Language other than English***Third Level Required* |  |  |  |
|  |  **U.S. Minority** *1 Course* |  |   |  |  |  |  |
|  |  |  |   |  ⏹ *Complete > In-Progress ^Future Registered* |
|  |  **Humanities & the Arts** |  |  |  |  |  |  |  |  |
|  | *6 Hours Required (IS 312 approved; IS 142 approved for iSchool majors)* |  |  |  |  |  |  |
|  |  **Natural Sciences & Tech***2 Courses Required* |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

## Information Sciences Core Requirements

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|  |  **IS 100** *Exploring the iSchool with a Human-Centered Lens (First Semester)* |  **INFORMATION SCIENCES ELECTIVES *(24 hrs)*** |
|  |  **IS 101** *Introduction to Information Sciences* |  **IS/INFO** **Any Level***(12 hr. 100 & above, may be INFO):* |
|  |  **IS 202** *Social Aspects of Info Technology (INFO 202)* |  | *[1]* **IS**  |
|  |  **IS 204** *Research Design for Information Sciences* |  | *[2]* **IS**  |
|  |  **IS 206** *Intro to Database Concepts & Applications* |  | *[3]* **IS**  |
|  |  **INFORMATION SCIENCES & CULTURE *Select One****:* |  |  *[4]* **IS**  |
|  **IS 308** *Race, Gender, & Information Technology* |  **IS Advanced***(12 hr. 300/400-level, must be IS):* |
|  **IS 309** *Computers & Culture* |  | *[5]* **IS**  |
|  **IS 310** *Computing & Humanities* |  |  *[6]* **IS**  |
|  **IS 311** *Historical Foundations of the Info. Society* |  |  *[7]* **IS**  |
| *Additional IS 308-311 may be taken to count as IS electives* |  | *[8]* **IS** |
|  *No substitutions in IS curriculum* |  *DS Core Courses (listed below) do not count as IS Electives* |

## Data Science Core Requirements

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| --- | --- | --- |
|  |  **MATH 220** *Calculus (or MATH 221 or MATH 234)* |  **MEANINGFUL RESEARCH OR DISCOVERY *(6 hrs)*** |
|  |  **MATH 227** *or***257** *Linear Algebra for DS/Computational Apps.* | *Select from experiences: IS 189/389 / INFO 199/399 Independent Study; IS 249 Practicum; IS 304 Adv. Research Design; IS 400 Colloquium; IS 199 E/EE Career Explore; IS 490 PSU Professional Skills; Study Abroad (LAS 291 & LAS 292)* |
|  |  **STAT/IS/CS 107** *Data Science Discovery* |
|  |  **STAT 207** *Data Science Exploration* |
|  |  **CS 307** *Modeling & Learning in Data Science* |  |  |
|  |  **CS 277** *Algorithms & Data Structures for Data Science (Sub: CS 225)* |
|  |  **IS 467** *Ethics & Policy for Data Science* |
|  |  **IS 477** *Data Management, Curation, & Reproducibility* |

## Additional Requirements

|  |  |  |
| --- | --- | --- |
| **123 Total Hours** |  Remaining: *In-progress:* Done:  | **Beginning Term: Expected Graduation:**  |
|  *21 Adv. Hours* |  *60 ILLINOIS Hours* |

**Generic BSIS+DS Plan:**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **FA22** | **SP23** |  | **FA23** | **SP24** |  | **FA24** | **SP25** |  | **FA25** | **SP26** |
| *RHET 105🡪*IS 100IS 101IS 107 🡪MATH 220 | IS 202 (3)IS [1]STAT 207🡪🡨GenEds*Disc/Res.* |  | IS 204IS [2]GenEds | MATH 227IS 206IS [3]GenEds |  | IS 308-11IS [4]IS [5] *Adv.C*GenEds | CS 277 IS 467IS [6]*Disc/Res.* |  | CS 307IS [7]*Disc/Res.* | IS 477IS [8]*Disc/Res.* |
| *~14-16 hr.* | *~14-17 hr.* |  | *~14-17 hr.* | *~14-17 hr.* |  | *~14-17 hr.* | *~14-17 hr.* |  | *~14-17 hr.* | *~14-17 hr.* |

Note: Some minors may require MATH 257 instead of MATH 227, but most students in +DS will take 227

**Generic BSIS+DS Plan if CS Minor:**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **FA22** | **SP23** |  | **FA23** | **SP24** |  | **FA24** | **SP25** |  | **FA25** | **SP26** |
| *RHET 105(4)🡪*IS 100(1)IS 101(3)IS 107(4) 🡪MATH 220(5) | IS 202 (3)IS [1]CS 124🡨GenEds*Disc/Res.* |  | STAT 207IS 204IS [2]CS 128GenEds | MATH 227IS 206IS [3]CS 173GenEds |  | CS 307IS 308-11IS [4]GenEdsCS 225 | IS [5] *Adv.C*CS Adv. *Disc/Res.* |  | IS 467IS [6]CS Adv. *Disc/Res.* | IS 477IS [7]IS [8]*Disc/Res.* |
| *~14-16 hr.* | *~14-17 hr.* |  |  |  |  |  |  |  |  |  |

[**CS Minor**](https://cs.illinois.edu/academics/undergraduate/degree-program-options/minor-computer-science)**:** Declare after 30 hours complete; Take CS 225 (not CS 277). You are not allowed to use CS 307 as one of the CS Minor Advanced Electives 3/400 level from CS Minor list (must have 6 distinct advanced hours for CS Minor that do not count in major).

# **Information Sciences (IS) Electives**

*There are a number of IS electives (100-400 level) to fulfill the 24 hr. requirement. Electives may be any course not listed in the IS/DS Core Requirements. Electives vary each semester in availability (check the Course Explorer each semester for current offerings). View all IS Courses here:* [*http://catalog.illinois.edu/courses-of-instruction/is/*](http://catalog.illinois.edu/courses-of-instruction/is/)

**“Pathways”** are areas of interest, & students may focus on one pathway, or across multiple. May align with careers and/or areas of interest. *Students do not “declare” a pathway.* <https://go.ischool.illinois.edu/BSISpathways>

# **Data Science Notes**

*Many courses require prerequisites and these should be closely followed. Please discuss course planning and degree requirements with an iSchool advisor.*



**Current Course Offerings (may change over time, based on department offering course)**

|  |  |  |
| --- | --- | --- |
| Course | Offering/Restrictions | Prerequisites |
| MATH 220*or* 221 *or* 234  | **Fall** & **Spring** (& **Summer)***AP or other credit & Proficiency credit good* | Adequate ALEKS Score required |
| MATH 227 *or* MATH 257 | *MATH 227* **Spring** Only – *Designed for DS majors (majority should take)**MATH 257* **Spring** Better (*Fall Restricted*) – *take 257 for some minors/dual-degrees/pre-requisites* | MATH 227 Prerequisite: STAT 107MATH 257 Prerequisite: MATH 220 *or* 221 & CS 101 *or Equivalent programming experience* |
| STAT/IS/CS 107  | **Fall** & **Spring** | *No Prerequisites* |
| STAT 207  | **Fall** & **Spring** | STAT 107 |
| CS 307  | **Fall** Only | STAT 207 & *One of:* MATH 227, MATH 257, *MATH 225, MATH 415, MATH 416, ASRM 406* |
| CS 277*(\*CS 225 may substitute)* | *CS 277* **Spring** Only*\* CS 225 if CS Minor Fall & Spring* | STAT 207; one of MATH 220, 221, or 234*Do not take CS 277 & CS 225 (one or other)*CS 225 requires CS 124, CS 128, CS 173, & MATH 220 or 221 |
| IS 467 | **Fall** & **Spring**Major Restriction | Junior or Senior Level |
| IS 477 | **Fall** & **Spring**Major Restriction | STAT 207 & Junior or Senior Level |