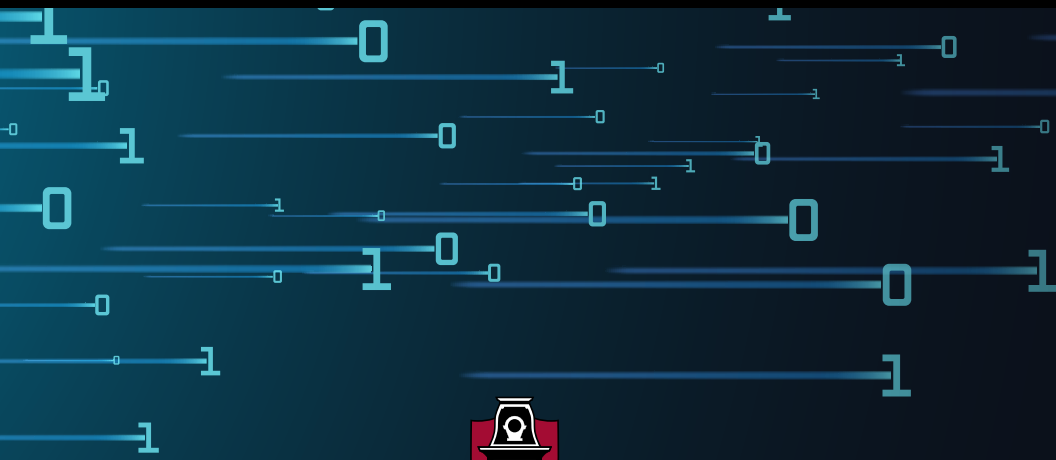
# 2020 Summer Orientation
# Student Guidebook

## FIRST-YEAR DATA SCIENCE PROGRAM



UNIVERSITY OF ARKANSAS

Data Science

College of Engineering

J. William Fulbright College of Arts and Sciences

Sam M. Walton College of Business

# First-Year Data Science Program Directory

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## This guidebook will…

- ☑ **Teach you about the First-Year Data Science (FYDS) Program**
- ☑ **Provide information to prepare for one-on-one advising**
- ☑ **Be a resource after orientation**

## Still have questions…

- ☑ **Students should contact Data Science by sending an email from their UARK account to datasci@uark.edu**

## Table of Contents

First-Year Data Science Program Overview . . . . . 2
First-Year Data Science (DASC) Courses . . . . . 3
Peer Mentoring Program . . . . . 4
Honors College . . . . . 6
Data Science Laptop Requirements . . . . . 7
State Minimum Core Requirements . . . . . 8
Credit by Advanced-Standing Programs . . . . . 10
Math and Science Requirements . . . . . 12
Determining Fall Math Class . . . . . 13
Course Scheduling for Calculus I or Higher . . . . . 14
Course Scheduling for Precalculus . . . . . 15
Course Scheduling for College Algebra . . . . . 16
Temporary Math Override Process . . . . . 17
UAConnect and Schedule Planner Guide . . . . . 18
General Information About Classes . . . . . 20
Reminders for After Orientation . . . . . 21

UNIVERSITY OF ARKANSAS | Data Science

# First-Year Data Science (FYDS) Program Overview

The First-Year Data Science Academic Program is a two-semester program required for all incoming freshmen starting in the Data Science Program (FYDS) and all transfer students who have not completed Calculus I. Students are initially declared as "Data Science First Year Students". During the spring semester, students will select their Concentration to be able to begin domain-specific courses their second year.

The two-semester curriculum includes the following:

- Introduction to Data Science
- Data Science in Today's World
- Two mathematics courses
- Composition I and Technical Composition II
- At least one university core science elective

FYDS is designed to provide proactive support for all new freshmen entering the Data Science Program. Particular emphasis is placed on academic, personal and career success, which leads to student success. The Peer Mentoring Program is a major component of helping students transition successfully into the Data Science Program.

## Peer Mentoring

To help first-year students ease the transition from high school to college, each student is paired with an upperclass data science or data science-knowledgeable student who helps with academic, professional, and personal development. Students are required to meet weekly with their Peer Mentor through the fall and spring semesters.

## Academic Advising

During orientation, students are advised one-on-one with an FYDS academic advisor. Students do not have to decide on a Data Science Concentration at that time. Advisors will help students select classes that meet requirements for multiple data science concentrations. Students will be assigned a FYDS academic advisor in early August. Until then, students can contact students can contact the Data Science Program faculty and advisors sending an email from their uark.edu email to datasci@uark.edu.

During the first week of fall classes, we will have open advising from 8:00 am – 5:00 pm to help with changes or clarifications for class schedules. Students do not need to see their assigned FYDS academic advisor during this week. In October, students will meet with their assigned FYDS academic advisor academic advisor to plan for spring classes.



# First-Year Data Science (DASC) Courses

## DASC 1001 Introduction to Data Science

## DASC 1222 Role of Data Science in Today's World

Programming Languages for Data Science, first of the two-course sequence, provides a semester-long introduction to basic concepts, tools, and languages for computer programming using Python and R, two powerful programming languages used by data scientists. This class will introduce students to computer programming and provide them with the basic skills and tools necessary to efficiently collect, process, analyze, and visualize datasets. Students will gain hands-on experience with de novo programming in R and Python, finding and utilizing packages, and working in both interactive (Jupyter and RStudio) and non-interactive (Unix) environments. And, they will gain experience communicating basic data science principles and methods to diverse audiences.

## DASC 1104 Programming Languages for Data Science (R, Python)

## DASC 1204 Introduction to Object Oriented Programming for Data Science (JAVA)

Introduction to Object Oriented Programming for Data Science (JAVA) course, second of the two-course sequence, provides programming skills and object-oriented programming knowledge for functioning as a data scientist. This course provides programming techniques and hands-on experience for functioning as a data scientist which prepares students for software development for resolving real-world data science problems. It covers object-oriented programming elements and techniques in JAVA, such as primitive types and expressions, basic I/O, basic programming structures, abstract data type, object class and instance, Methods, Java File I/O, object inheritance, collections and composite objects, advanced input /output: streams and files, and exception handling. Students will gain hands-on programming experience using JAVA and experience providing effective and efficient communication of data science techniques and findings to multi-disciplinary audiences and stakeholders.

## Why do I need a Peer Mentor?

This is a great question, and one that we cannot fully answer for you. You will need to decide for yourself what kind of experience you wish to have with your Peer Mentor. What we can tell you is that your Peer Mentor is a resource for you this first year. Do you know how things work at the University of Arkansas? Do you know how things work within your data science major? Do you know how to utilize all the online functions at the university (like submitting homework through Blackboard or registering for classes)? Have you considered what the various expectations of instructors will be at the college level, and how they might vary from class-to-class? For many of you, the answer will be no—but guess what, your Peer Mentor has the knowledge and experience to guide you in the right direction. Our mentors are upperclass data science or data science-knowledgeable students who have already experienced many of the same struggles and challenges you may encounter during your first year, or even in future semesters, and they are here to listen and talk you through them.

Peer Mentors are not tutors, but they are someone you can talk to about academic or personal concerns and questions that you may have. You may come from a small town where you had a solid friend group, but now find yourself in a much larger and completely unfamiliar community - who do you turn to? Some of you will come in never having experienced any academic struggles, but now you find yourself needing to put in twice the amount of effort to stay to achieve your goals – who do you ask about adjustments? Some of you don't know which data science concentration is the right fit, and some of that has to do with not knowing all the different domains – who can you talk to about this? When it is time to start applying for internships, co-ops, research programs, or study abroad but have no idea where to start – who do you talk to about this? The answer to all of these questions: your Peer Mentor.

You are required to meet with your Peer Mentor as part of your first year GNEG courses, but what you discuss in those meetings is entirely up to you. What you can gain from those meetings will also be entirely dependent on you. Will you make the most of this opportunity? Will you remain quiet because you feel this isn't "cool"? Because you "don't see a point"? Will you believe that you don't need help, or struggle with the idea of asking for help because it might make you look or feel "stupid?" One of the very first challenges you will have to overcome at college is realizing that you must have the courage to ask for help. Let your Peer Mentor be that bridge to finding you the help you need to succeed at the University of Arkansas and within the Data Science Program!

## How will I know who my Peer Mentor is?

After your one-on-one advising for orientation, you will finish registering for classes. Once you have your schedule, you will then complete a peer mentor match survey. You will be matched with a survey based on different factors such as common data science degree, starting Math Placement, personality similarities, and other likes and interests. This matching process is not designed to be perfect or flawless, and sometimes you get paired with a mentor who is studying a different field than you will be, but even so you were matched based on some common factor(s). Regardless of why you were matched, you all share the bond of pursuing an Data Science degree here at the University of Arkansas! You will meet your Peer Mentor virtually from 7-8 PM on Thursday, August 27.

## What kinds of topics will Peer Mentors cover in one-on-one meetings?

The transition from high school level studying and course work to the university level is expected to be a challenge for the majority of our incoming students, but many underestimate the true degree of difficulty in this change — even the best and brightest students can struggle during their first year, and the struggle isn't always academic. To help students adjust to this new and often demanding workload, Peer Mentors will guide their mentees through topics such as time management, developing relationships with professors, and effective study habits. Peer Mentors help students build an understanding of the campus resources and strengthen first-year students professionally, through resume building and interview prep. While there will always be a topic of the week to cover, ultimately these meetings are dependent upon your needs and questions during that given week –Peer Mentors are here to be a resource and guide FOR YOU!

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"I once arrived to a peer mentor meeting incredibly disheartened with a failing exam grade and felt as though I could not possibly make it through. However, Brianna shared her freshman experience where she too failed an exam. She told me that I am not defined by an exam grade and to keep going forward. At the end of the semester I was able to pull my grades up and received an A in the class I was sure I was going to fail."

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"One week, I felt very discouraged about finding an internship, so she [my mentor] shared a few experiences with me about her personal journey in dealing with companies (failure and success) which was encouraging. I realized that every failure brings me one step closer to my next success. Because of this, I feel more confident in attending the next career fair or seeking an internship on my own."

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"Cady is the reason that I survived my first semester. When I was struggling with my classes, she led me to resources such as Class + and gave me little tips on how to thrive in my difficult classes. She suggested resources such as visiting the Physics Library or the Calc Corner. Cady saw that I was struggling, not because I was incapable of passing my classes, but because I needed extra support. She was my support system."

# Honors College

## Joining the Honors College

Incoming first-year data science students with a minimum ACT composite score of 28 or SAT combined score of 1310 AND a high school GPA of 3.5 or higher are eligible to join the Honors College their first year. Students who do not meet these criteria when they enter the University of Arkansas may apply after earning a 3.5 UofA GPA. Students must be in the Honors College to enroll in Honors courses.

Visit the Honors College website for more information and to apply online.
***honorscollege.uark.edu***

## Honors Physics

Honors students may elect to take PHYS 2054H Honors University Physics I. Students will have the same assignments as those in the regular course plus an additional project requirement. Honors University Physics I requires the students to propose and then carry out an honors project that relates to the material in the course and is of interest to the students. The project can be either a designed experiment, proof of concept model, or a research paper.

## Honors Math

Honors mathematics courses go more in depth into the underlying mathematics with proofs and a wider variety of applications. These courses are rigorous and are designed for students who want a deep understanding of mathematical concepts.

Two honors math courses are available in the fall: 1) MATH 2554H Honors Calculus I requires ACT Math score of 30 or SAT Math score of 710. 2) MATH 2574H Honors Calculus III requires an A in MATH 2564 Calculus II or 5 on the Calculus BC exam.

## Study Abroad and Research Grants

Students in the Honors College may also apply for grants to fund research or study abroad programs. One of the best times for data science students to study abroad or begin undergraduate research is the summer after their freshman year.

By the time of application, students must have 6 honors hours on the UofA campus. If you plan to study abroad after your freshman year, you must complete a total of six honors hours by the end of the spring semester. Honors credit earned from AP courses do NOT count towards these minimum honors hours requirements. Specific requirements can be found on the Honors College website.

More information about study abroad can be found at ***studyabroad.uark.edu.***



# Data Science Laptop Requirements

Data Science students will need a laptop from their very first introductory classes through their senior capstone Practicum. And, while many capabilities will be available "in the cloud" and through virtual desktops, there will also be a need for a laptop with stand-alone (local) significant processing power, substantial working memory and data storage, to complete class assignments and personal and team projects – including in-class active learning activities. The following are the *minimum* specifications for your laptop:

- Intel Core i5 8th generation or newer processor
- minimum 8GB of memory
- minimum 256GB of solid-state storage (SSD)
- rated battery life of 10 hours
- screen with a minimum resolution of 1920 x 1080
- accidental damage and handling coverage for 3 years
- 802.11ac or better Wi-Fi
- Operating System: ability to run the latest versions of Windows Pro Edition, macOS, or Linux

All software, beyond the Operating System, that you will need will be available through the University and in environments through your courses and labs. You can learn more about on the Information Technology Services website. ***its.uark.edu***

**NOTE:** *Tablet devices such as Chromebooks, iPads, and Surfaces are not sufficient to meet the above requirements for stand-alone (local) processing, working memory, and data storage.*

If you have any specific questions about this requirement or specifications, please email them to datasci@uark.edu.

# State Minimum Core Requirements

All University of Arkansas students must complete specified courses in the State Minimum Core to graduate. The information here indicates how the State Minimum Core can also satisfy the learning outcomes of the General Education Curriculum for data science degrees only. These courses must be completed by graduation and are not direct pre-requisites to any data science specific courses.

**NOTE:** *Please note the listing assumes students have no incoming credit. Advisors will help students determine how incoming credit will fulfill requirements. The listing of courses validated to satisfy Outcomes in the General Education Curriculum is dynamic, and subject to change as new courses are added and current courses are dropped. The Catalog of Studies should be checked regularly for changes to course listings associated with each outcome.* ***https://catalog.uark.edu/undergraduatecatalog/gened/generaleducation/***

## ENGLISH

- ENGL 1013 or ENGL 1013H satisfies learning outcome 1.1
- ENGL 1033 satisfies learning outcome 1.2.
  - o All data science concentrations require ENGL 1033.
  - o ENGL 1023 satisfies the State Minimum Core but not the learning outcome 1.2
- Students with ACT English scores of 30 or greater or SAT Evidence-Based Reading and Writing scores of 690 or greater are exempt from ENGL 1013 and ENGL 1023.
- Students with exemption or credit will discuss requirements in one-on-one advising.

## MATHEMATICS

- MATH 2554 Calculus I is required by all data science concentrations and satisfies learning outcome 2.1.

## SCIENCE

- Data Science degrees require at least 2 science courses satisfying learning outcome 3.4

## SOCIAL SCIENCE

- Students must satisfy the Social Science State Minimum Core with three unique courses, none of which were taken to satisfy the U.S. History/Government State Minimum Core requirement.
- One course must satisfy learning outcome 4.1.
- Courses must be taken from at least 2 departments.
- All Data Science Concentrations require ECON 2143.

## FINE ARTS

- All data science majors satisfy learning outcome 3.1 by taking one of the courses listed.

## HUMANITIES

- PHIL 3103 Ethics and the Professions is required for all Data Science Concentrations and satisfies learning outcomes 3.2 and 5.1

**English (2 courses)**

- ❑ ENGL 1013 Composition I
- ❑ ENGL 1033 Technical Composition II

**Fine Arts (1 course)**

- ❑ ARHS 1003 Basic Course in the Arts: Art Lecture
- ❑ ARCH 1003 Basic Course in the Arts: Architecture Lecture[2]
- ❑ COMM 1003 Basic Course in the Arts: Film Lecture
- ❑ DANC 1003 Basic Course in the Arts: Movement and Dance
- ❑ LARC 1003 Basic Course in the Arts: The American Landscape[2]
- ❑ MLIT 1003 Experiencing Music
- ❑ MLIT 1013 Music and Society
- ❑ MLIT 1333 Popular Music
- ❑ THTR 1003 Basic Course in the Arts: Theatre Appreciation
- ❑ THTR 1013 Musical Theatre Appreciation

**Humanities (1 course)**

- ❑ CLST 1003 Intro to Classical Studies: Greece[2]
- ❑ CLST 1013 Intro to Classical Studies: Rome[2]
- ❑ PHIL 2003 Intro to Philosophy
- ❑ PHIL 2103 Intro to Ethics

**History (1 course)**

- ❑ HIST 2003 History of the American People to 1877
- ❑ HIST 2013 History of the American People 1877 to Present
- ❑ PLSC 2003 American National Government

**Social Science (1 course to satisfy 4.1 outcome)**

- ❑ ANTH 1023 Intro to Cultural Anthropology
- ❑ COMM 1023 Communication in a Diverse World

- ❑ GEOS 2003 World Regional Geography
- ❑ HDFS 1403 Life Span Development
- ❑ HDFS 2413 Family Relations
- ❑ HIST 1113 Institutions and Ideas of World Civilizations I
- ❑ HIST 1123 Institutions and Ideas of World Civilizations II
- ❑ HIST 2093 Animals in World History
- ❑ INST 2013 Introduction to International and Global Studies
- ❑ INST 2013 Introduction to International and Global Studies
- ❑ PLSC 2013 Intro to Comparative Politics
- ❑ RESM 2853 Leisure and Society
- ❑ SOCI 2013 General Sociology
- ❑ SOCI 2033 Social Problems

**Social Science (2 courses)[1]**

- ❑ AGEC 1103 Principles of Agricultural Microeconomics
- ❑ AGEC 2103 Principles of Agricultural Macroeconomics
- ❑ ECON 2013 Principles of Macroeconomics
- ❑ ECON 2023 Principles of Microeconomics
- ❑ ECON 2143 Basic Economics: Theory and Practice
- ❑ GEOS 1123 Human Geography
- ❑ HDFS 2603 Rural Families and Communities
- ❑ HIST 2003 History of American People to 1877
- ❑ HIST 2013 History of American People 1877 to Present
- ❑ PLSC 2003 American National Government
- ❑ PLSC 2203 State and Local Government
- ❑ PSYC 2003 General Psychology

*[1] Students may also take courses in the History and Social Science 4.1 groups if they have not been used to meet requirements. One course cannot be used to meet multiple core requirements.*

*[2] These courses also satisfy learning outcome 4.1 but do not satisfy the Social Science requirement.*

# Credit by Advanced-Standing Programs

## Advanced Placement Program

AP examinations listed below are for classes specific to data science requirements for State Minimum Core. Students will discuss actual and anticipated AP scores one-on-one with an advisor during orientation. A complete list can be found in the Academic Regulations section of the Catalog of Studies. ***catalog.uark.edu***

| AP Examination | UA Course | Minimum Score |
|---|---|---|
| English | | |
| Language and Composition | English 1013 | 3C |
| Language and Composition | English 1013H | 5C |
| Math | | |
| Calculus AB | MATH 2554 | 3C |
| Calculus AB | MATH 2554H | 5C |
| Calculus BC | MATH 2554 & MATH 2564 | 3C |
| Calculus BC | MATH 2554H & MATH 2564H | 5C |
| Calculus AB Subscore | MATH 2554 | 3C |
| Science | | |
| Biology | BIOL 1543/1541L | 4C |
| Biology | BIOL 1543H/1541M | 5C |
| Chemistry | CHEM 1103/1101L & CHEM 1123/1121L | 4C |
| Chemistry | CHEM 1103/1101L & CHEM 1123H/1121M | 5C |
| Environmental Sciences | GEOS 1133/1131L | 3C |
| Physics 1: Algebra-Based with Cal AB or BC score of 3 | PHYS 2054 | 4C |
| Physics 1: Algebra-Based with Cal AB or BC score of 3 | PHYS 2054H | 5C |
| Physics C Mechanics | PHYS 2054 | 3 Cq[1], 4C |
| Physics C Mechanics | PHYS 2054H | 5C |
| Physics C, E & M | PHYS 2074 | 3 Cq[2], 4C |
| Physics C, E & M | PHYS 2074 | 5C |
| Fine Arts | | |
| Art History | ARHS 1003 | 3C |
| Art History | ARHS 1003H | 5C |
| Music Theory | MLIT 1003 | 3C |
| U.S. History/Government | | |
| U.S. Government and Politics | PLSC 2003 | 3C |
| U.S. Government and Politics | PLSC 2003H | 5C |
| U.S. History | HIST 2003 or HIST 2013 | 3C |
| U.S. History | HIST 2003 or HIST 2013 | 5C |
| Social Science | | |
| European History | HIST 1123 | 4C |
| Government and Politics: Comparative | PLSC 2013 | 3C |
| Human Geography | GEOS 1123 | 3C |
| Macroeconomics | ECON 2013 | 3C |
| Microeconomics | ECON 2023 | 3C |
| Psychology | PSYC 2003 | 3C |
| World History | HIST 1113 or HIST 1123 | 3C |
| World History | HIST 1113 and HIST 1123 | 5C |

**Symbols for placement and credit:**

**C** = credit

**Cq** = qualified credit (placement and credit subject to departmental review)

[1] Students who earn 3 on Physics C Mechanics can earn credit for PHYS 2054 by passing a departmental test or earning a C or higher in PHYS 2074.

[2] Students who earn 3 on Physics C, E & M can earn credit for PHYS 2074 by passing a departmental test.

[3] Students who earn a 3 on Computer Science A can earn credit for CSCE 2004 by passing a departmental test.

## International Baccalaureate (IB) and College Level Examination Program (CLEP)

Students may also earn college credit by completing IB exams or taking CLEP tests. CLEP credit can only be earned for MATH 1203 College Algebra and MATH 2554 Calculus I. No CLEP credit is awarded for MATH 1284 Precalculus.

Information on the requirements for the IB exam and CLEP tests can be found in the Academic Regulations section of the Catalog of Studies. ***catalog.uark.edu***

# Math and Science Requirements

## Math Requirements for Data Science

Progression through the math sequence is essential for students to be able to take required sophomore-level data science courses. Students who have not completed Calculus II prior to their second year may delay starting discipline-specific courses.

| Math Course | Data Science Concentrations |
|---|---|
| MATH 2554C Calculus I | Required for All Data Science Concentrations. |
| MATH 2564C Calculus II | Required for All Data Science Concentrations. |
| DASC 2594 Multivariable Mathematics for Data Scientists | Required for All Data Science Concentrations. |

## Science Requirements for Data Science

Data Science students are required to take at least two science courses with matching labs (8 total semester hours) to fulfill the State Minimum Core requirement. Only the Biomedical & Healthcare Informatics Concentration has specific science requirements as listed below.

See the Catalog of Studies for the complete list of science courses:
https://catalog.uark.edu/undergraduatecatalog/gened/stateminimum/

| Science Course | Data Science Concentrations |
|---|---|
| CHEM 1103/1101L University Chemistry I with lab | Required for Biomedical & Healthcare Informatics Concentration |
| PHYS 2054 University Physics I | Required for Biomedical & Healthcare Informatics Concentration |
| CHEM 1123/1121L University Chemistry II with lab | Required for Biomedical & Healthcare Informatics Concentration |



# Determining Initial Math Placement

Students' fall schedules will be determined by their math class. Qualifications for each math class can be met by fulfilling one of the requirements in the table below. For more information on the ALEKS Math Placement test, visit ***mathplacement.uark.edu***.

Failure to complete Calculus II prior to the start of the second year can impact the ability to take Data Science and Concentration-specific courses.

| Desired Math Course | | Qualification *(must meet one of these criteria)* | | | |
|---|---|---|---|---|---|
| **Number** | **Name** | **Prerequisite Course** *(C or better)* | **ALEKS Math Placement Score** | **ACT Math** | **SAT Math** |
| MATH 1203 & MATH 0002L | College Algebra with 2 hour lab | | <30 | <19 | <510 |
| MATH 1203 & MATH 0001L | College Algebra with 1 hour lab | | 30 | 19 | 510 |
| MATH 1203 | College Algebra | | 46 | 23 | 570 |
| MATH 1284C | Precalculus Mathematics | MATH 1203 | 60 | 26 | 620 |
| MATH 1514 | Calculus with Alg & Trig I | MATH 1203 | 60 | 26 | 620 |
| MATH 2445 | Calculus I with Review | MATH 1284C or MATH 1213 *Or 2 on the Calculus AB or BC Exam* | 70 | 28 | 660 |
| MATH 2554C | Calculus I | MATH 1284C or MATH 1213 *Or 2 on the Calculus AB or BC Exam* | 76 | 28 | 660 |
| MATH 2564C | Calculus II | MATH 2445 or MATH 2554C | | | |
| DASC 2594 | Multivariable Mathematics for Data Scientists | MATH 2564C | | | |

## Temporary Math Overrides into Higher Course

Some students may qualify for a temporary override into a higher math class than indicated by ACT or math placement scores. Temporary overrides are only granted for:
1. Pending AP credit from Calculus AB, Calculus BC, or IB Calculus exams.
2. Pending transcripts from another institution with college credit for a prerequisite.
3. Pending and verified higher ACT or SAT math scores that have not been sent to UofA

See page 17 for more information about overrides

# Course Scheduling for Calculus I or Higher

Students who begin in Calculus I are on track with math. The schedule below represents the recommended semester for students with no incoming credit. All students will meet one-on-one with an academic advisor to determine the best schedule that also incorporates any incoming credit.

| Fall Schedule |
|---|
| DASC 1001<br>Introduction to Data Science |
| DASC 1104<br>Programming Languages for Data Science (R, Python) |
| MATH 2554C<br>Calculus I |
| University Science Core Course OR<br>CHEM 1103<br>University Chemistry I (required for Biomedical & Healthcare Concentration; Lab is not required for data science students) |
| State Minimum Core Elective (3 hours) |
| ENGL 1013<br>Composition I |
| **14-15 hours** |

### MATH 2554C CALCULUS I

Students enrolled in MATH 2554C Calculus I will choose both a lecture and a corresponding drill section. The lecture section will meet on Mondays, Wednesdays, and Fridays in a large lecture and will be taught by a professor. Your drill section will meet on Tuesdays and Thursdays in a small lecture, taught by a graduate student. The drill section is more conducive to one-on-one student interaction. Drill attendance is required.

### MATH 2445 CALCULUS I WITH REVIEW

Students may alternatively choose MATH 2445 Calculus with Review. This class is designed for students who need to review College Algebra and Precalculus skills while mastering Calculus I concepts. This course consists of 75 minute lectures Monday through Friday in a small classroom. Students who pass MATH 2445 with a C or better will continue on to MATH 2564C Calculus II in the Spring semester.

### STUDENTS WITH CALCULUS CREDIT

Students who have or anticipate AP, IB, or transfer credit for Calculus I or higher will discuss their fall math course with an advisor.



# Course Scheduling for Precalculus

Students who begin in Precalculus have one additional semester of math. We recommend students attempt the math placement test to improve their math preparedness and possibly qualify for Calculus I. (When prompted by the math placement test software, students should select the Calculus module.) For more information on the Math Placement Test, visit ***mathplacement.uark.edu***

Students are encouraged to take Calculus II the summer before their second year. Students who have not completed Calculus II prior to their second year may delay starting Data Science- and Concentration-specific courses.

The schedule below represents the recommended semester for students with no incoming credit. All students will meet one-on-one with an academic advisor to determine the best schedule that also incorporates any incoming credit.

| Fall Schedule |
|---|
| ECON 2143<br>Basic Economics: Theory & Practice |
| MATH 1284C<br>Precalculus |
| CHEM 1103<br>University Chemistry I |
| State Minimum Core Elective (3 hours) |
| ENGL 1013<br>Composition I |
| **16 hours** |

### MATH 1514 CALCULUS WITH ALGEBRA AND TRIGONOMETRY I

A new course with limited seating will be offered this fall that provides an alternative path through Calculus I for students who start in Precalculus. This is a two-semester commitment where students must also take MATH 2514 Calculus with Algebra and Trigonometry II in the spring semester to receive Calculus I credit. The courses integrate Calculus I with Precalculus topics on an as-needed basis.

# Course Scheduling for College Algebra

Students who begin in College Algebra have two additional semesters of math. We recommend students attempt the math placement test to improve their math preparedness and possibly qualify for Precalculus or Calculus I. (When prompted by the math placement test software, students should select the Calculus module.) For more information on the Math Placement Test, visit ***mathplacement.uark.edu***

Students are encouraged to take Calculus I the summer before their second year. Students who have not completed Calculus II prior to their second year may delay starting Data Science- and Concentration-specific courses.

The schedule below represents the recommended semester for students with no incoming credit. All students will meet one-on-one with an academic advisor to determine the best schedule that also incorporates any incoming credit.

| Fall Schedule |
|---|
| MGMT 2503<br>Business Foundations<br>(Data Science section) |
| MATH 1203<br>College Algebra[1] |
| Science Elective with lab (4 hours) |
| State Minimum Core Elective (3 hours) |
| ENGL 1013<br>Composition I |
| **16 hours[1]** |

[1]Some students may be required to also take MATH 0001L or MATH 0002L which adds 1-2 more hours

All students will enroll in MATH 1203 College Algebra. ACT math, SAT math, or ALEKS math placement score will determine if students must enroll in an additional math lab. The lab requirement also determines the number of class days per week. See page 13 for the requirements.

- No Lab required - Attend lecture 3 days a week
- MATH 0001L required - Attend lecture 4 days a week
- MATH 0002L required - Attend lecture 5 days a week



# Temporary Math Override Process

Some students may qualify for a temporary override into a higher math class and possibly other courses than indicated by ACT, SAT or math placement scores. During one-on-one advising, the FYDS academic advisor will submit the temporary override for qualified students. Temporary overrides are only granted for:

1. Pending AP credit from Calculus AB, Calculus BC, or IB Calculus exams.
2. Pending transcripts from another institution with college credit for a prerequisite.
3. Pending and verified higher ACT or SAT math scores that have not been sent to UofA

Students who are granted a temporary override consent to an agreement to have the pre-requisites posted to their student account by Wednesday, August 12.

- Students will receive an email to their UARK email address in July reminding them of the deadline.
- Students will be administratively dropped from classes associated with the override if pre-requisites are not on file by the Wednesday, August 12 deadline.
- Email communication about overrides will be sent to the students UARK email address.

## For overrides based on AP or IB credit:

- Students need to confirm with College Board and IB that test scores are being sent to the University of Arkansas.
- In July, students need to confirm that overrides based on 2020 test scores meet the requirements for the math override. See page 10-11 for minimum scores needed.

## For overrides based on college credit:

- Students should confirm that they have paid to send transcripts from the college or university where credit has been earned. Information on sending transcripts can be found on the Registrar's website ***registrar.uark.edu***.
- It is NOT the responsibility of the high school to send transcripts for students who received college credit through dual enrollment.

## Confirming that test scores or transcripts have been received:

- Students can view their posted transfer credit in UAConnect. From Student Home page, click on Academic Records tile, then click Transfer Credit to see what credits have being received and posted. In the same tile, click on Other Academics then Academic Test Summary to see ACT, SAT, AP, CLEP, IB and ALEKS test scores.
- For students who meet the requirements and transcripts or test scores have been received by the UofA by the deadline, no further action is needed.

## For overrides where the final requirements are not met:

- Students will receive an email on Wednesday, August 12 notifying them that they will be administratively dropped from any classes they are enrolled in but not eligible for.
- Students should see pages 12-15 for fall schedules based on math they will now qualify for.
- Students who qualify for a math class lower than Calculus I are encouraged to take the free online math placement test. ***mathplacement.uark.edu***
- Classes begin on Monday, August 24 and the final day to add a full semester classes is Friday, August 28.

## Questions about overrides or class schedule:

Students should contact FYDS by sending an email from UARK email to datasci@uark.edu

## UAConnect and Schedule Planner Guide

For more assistance and instructions with UAConnect and Schedule Planner, go to ***help-uaconnect.uark.edu***. Then go to Knowledge Centers > Student.

1. Log on to UAConnect ***uaconnect.uark.edu*** using your university login and password
   - Complete RazAlert info if necessary
2. From your Student Homepage, click on the **Manage Classes** tile and then **Schedule Planner** on the left side of the screen
3. Click the **Click Here** button to open Schedule Planner
   - If a new window or tab does not open, you may need to "Temporarily allow pop-ups"
4. Select **Fall 2020** for the **Term** and click **Save and Continue** button
5. Select **Select All Campuses** for the **Select Campus** and click **Save and Continue** button
6. **Uncheck Intercession** for the **Select Session** and click **Save and Continue** button
7. Click the **Add Course** button in the **Courses** section
8. Add courses by choosing the subject and course from the drop down menus. Click **Add Course** button to add the individual course.
9. Once you have added all courses including required labs, check the first checkbox in the **Courses** section.
   - See section below about courses currently on your schedule.
10. Click **Generate Schedules** button in the **Schedules** section near the bottom of the screen
11. **View** possible schedules (See section on Refining your schedule search)
12. When you find the schedule you want, click the **Send to Shopping Cart** button. Select Undergraduate for Career, then click Send to Shopping Cart button.
13. Click back on the original browser tab that says **Start Scheduler**. Then click the button that says **Course Enrollment**.
14. On the next page, you will click the **Import Cart** button to import the classes individually from Schedule Planner. You will have to click the **Next** button to accept each class.
15. Once you have accepted each class, you will be back to the page for Adding Classes. You will see those classes in the middle section labeled **Fall 2020 Shopping Cart**. Click the **Proceed to Step 2 of 3** button to add those classes.
    - If you need to change your math placement (ex. From PreCalculus to Calculus I) then you will need to **SWAP** your math classes first. See Swap instructions.
16. On the next page it will confirm all the classes in your shopping cart. Click the **Finish Enrolling** button.
    - If you get green checkmarks for each class you are done.
    - If you get any red X's, email datasci@uark.edu for assistance.

## Any classes currently on your schedule are listed in the "Current Fall 2020 Schedule" area.

To use the section of a course currently on your schedule, make sure the box is checked for the course in this area. To look at other section options, uncheck the box in this area for the course and use the Add Course functionality in steps 7 and 8 above.



## Refining your schedule search (too many options)

1. Add **Breaks** using the menu on the right of the screen
   - Use this for required practices or meetings
   - Use it to adjust times you wish to not have class (if you have options). Note that CHEM 1103 and PHYS 2054 have required class time on Tuesday and Thursday evening for tests, respectively. Do not add a break during these evenings if you intend to enroll in these courses.
2. Choose specific sections for one or more courses using the **Options** links in the **Courses** section.

## Swapping a Class in UAConnect

1. From the **Manage Classes** tile, click the **Enroll** link on the left. Then click the **SWAP** tab at the top of the page.
2. If more than one term is open for enrollment, you will have to select the **Fall 2020** term and click the **Continue** button.
3. Under the **Swap This Class** section, click the drop-down arrow to select the class you wish to drop from your current schedule.
4. Under the **With This Class** section, click the drop-down arrow next to **Select from Shopping Cart** to select the class from your shopping cart. Then click **Select** button.
5. The next screen lists both classes for you to confirm your swap. Click the **Finish Swapping** button.
   - If you get a green checkmark on the next screen, your swap worked. If you get a red X, then the swap did not happen. Possible reasons are class is closed, class conflict, or prerequisites are not met. If you need help, email datasci@uark.edu for assistance.
   - If you need to continue adding classes, then click the **Add** link at the top of the page.

## Editing Drill or Lab Times in UAConnect

If you want to keep the lecture time but change the drill time for your math class or lab time for your physics class, you can use the **EDIT** function. From the **Enroll** page, click the **EDIT** tab at the top of the page. You will be prompted to select a drill or lab associated with your currently schedule lecture.

## Dropping a Class in UAConnect (Use SWAP when possible)

1. From the **Enroll** page, click the **Drop** tab at the top of the page
2. If more than one term is open for enrollment, you will have to select the **Fall 2020** term and click the **Continue** button.
3. Select the check box of each class you wish to drop.
4. Click the **Drop Selected Classes** button to remove class(es) from your schedule.
5. The next page will show the status of this process.
   - If you get a green checkmark on the next screen your drop worked.
   - If you get a red X, then the drop did not happen. The most common reason is the class is a co-requisite with another class on your schedule. You may need to do a SWAP instead or drop the co-requisites. If you need help, email datasci@uark.edu for assistance.

# General Information About Classes

After meeting one-on-one with an advisor and building their schedule, students should not change their schedule unless their math placement changes based on test scores or transfer credit. Sections of classes will be filling throughout the summer, which makes changes more complicated.

Most students will enroll in 16 hours for the fall semester. Students are responsible for knowing whether they have a scholarship that has specific semester or year requirements for credit hours or GPA. If there are specific semester requirements, students must be enrolled in the correct number of credit hours by the 11th day of classes (Tuesday, September 8). Students should share their scholarship requirements with their academic advisor during orientation, and again during fall advising, to ensure they are advised for the correct number of credit hours.

## Determining Credit Hours for a Course

- The last digit of a course number is the number of hours a course is worth. Example, MATH 2554C is worth 4 credit hours.
- Credit hours do not always equal hours spent in class or time required to study for the class.

**PHYS 2054 University Physics I and PHYS 2074 University Physics II**
Both PHYS 2054 and PHYS 2074 are worth 4 credit hours each. The credit hours include the lecture, lab and test time found on the schedule.

- PHYS 2054 meets for 50 minutes 3 days a week for lecture. PHYS 2074 meets 2 days a week for lecture.
- Lab for both courses meets twice a week for 1 hour and 50 minutes each day.
- Tests are given on Thursday nights from 7:30-10:30pm. Students only attend on Thursday nights for weeks when tests are given.

**CHEM 1103 University Chemistry I**
CHEM 1103 is worth 3 credit hours and is required for all Biomedical and Healthcare Informatics Concentration students and an elective for all other Concentrations. Data Science students are NOT required to take the lab (CHEM 1101L).

- Tests are given on Tuesday nights from 6:30-8:00pm. Students only attend on Tuesday nights for weeks when tests are given.
- Students will have CHEM 1103 D001 on their schedule. During the first week of classes, students will sign up for required Supplemental Instruction (SI) meetings for chemistry. These are weekly study sessions for historically challenging courses. More information can be found on Student Success website ***success.uark.edu.***

# Reminders for After Orientation

- **If you registered for College Algebra or Precalculus today, we strongly encourage you to take the Math Placement Test to increase your math preparedness and possibly your starting math class for the fall.**
- **Wednesday, August 12: Deadline for transcripts to be received for students granted a temporary math override**
- **Monday, August 24 – Friday, August 28: Open Academic Advising in FEP (First-Year Engineering Program) main office**
- **Thursday, August 27 7:00-8:00 pm: First Meeting with Peer Mentor**

## Important Academic Calendar Dates

- **Monday, August 24: First day of classes**
- **Friday, August 28: Last day to add a full semester class**
- **Sunday, August 30: Last day to drop a full semester class or all classes with 100% fee adjustment ($45 fee for withdrawing)**
- **Friday, September 4: Last day to drop a full semester class without a "W" on transcript**
- **Monday, September 7: Last day to drop a full semester class or all classes with 75% fee adjustment ($45 fee for withdrawing)**
- **Monday, September 7: Labor Day, no classes**
- **Tuesday, September 8: 11th day of classes (important date for scholarships with semester hour requirements)**
- **Monday, September 14: Last day to drop a full semester class or all classes with 50% fee adjustment ($45 fee for withdrawing)**

Full semester calendar can be found on the Registrar's website ***registrar.uark.edu***

Continue to check your university email account regularly over the summer for important information from the university and the First-Year Data Science Program.

Visit our website to learn more information about Data Science datascience.uark.edu

Visit the Information Technology Services website for technology help its.uark.edu

## Important Dates

**Wednesday, August 12**
Deadline for Math Overrides

**Monday, August 24**
First Day of Classes

**Thursday, August 27**
First meeting with Peer Mentor

**Friday, August 28**
Last Day to add a full semester course

UNIVERSITY OF ARKANSAS

Data Science

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