

CHECK SHEET FOR THE B.S. DEGREE IN MATHEMATICS (AY 2024-25)

DEPARTMENT OF MATHEMATICS

University of Central Arkansas

DATA SCIENCE TRACK (42 HOURS)

Core Courses (21 Hours)

COURSE NO.	COURSE	CREDIT HRS	PREREQUISITE	SEMESTER OFFERED
MATH 1496	Calculus I	4	C or better in MATH 1390 and MATH 1392; or or better in MATH 1486; or equivalent	Fall, Spring
MATH 1497	Calculus II	4	C or better in MATH 1496	Fall, Spring
MATH 2341	Mathematical Computation	3	MATH 1497 or concurrent enrollment in MATH 1497	Fall
MATH 2471	Calculus III	4	C or better in MATH 1497	Fall, Spring
MATH 3320	Linear Algebra (Upper Core: I)	3	MATH 1497 or CSCI 2330	Fall, Spring

Required Courses (15 Hours)

MATH 3311	Statistical Methods	3	MATH 2341, or MATH 1496 & CSCI 1470, or consent of instructor	Fall, Spring
MATH 3392	Multivariate Analysis	3	MATH 3311 and MATH 3320 or consent of instructor	Fall
MATH 4373	Regression Analysis	3	MATH 3311 (C grade or higher) or consent of instructor	Spring
MATH 4391	Machine Learning	3	MATH 4373 or consent of instructor	Spring

Choose 1 Electives (3 Hours)

MATH 3381	Data Cleaning & Visualization	3	MATH 3311 or consent of instructor	Fall
MATH 4372	Introduction to Statistical Inference	3	MATH 4371	Spring
MATH 4374	Introduction to Stochastic Processes	3	MATH 4371 or consent of instructor	Fall
MATH 4381	Special Topics (may be taken more than once if topics differ)	3	Consent of instructor	On Demand
MATH 4392	Time Series and Forecasting	3	MATH 4373 or consent of instructor	Spring

Choose 1 Elective from above or 1 Elective below (3 hours)

MATH 3331	Ordinary Differential Equations I [Upper Core: C]	3	MATH 1497	Spring
MATH 3360	Introduction to Rings and Fields	3	MATH 2335	Fall
MATH 3362	Introduction to Group Theory	3	MATH 3320 or MATH 2335	Spring (Odd Years)
MATH 4306	Modeling and Simulation [Upper Core: Z]	3	Math 2341, Math 3320, Math 3331 and Math 4371	Spring
MATH 4315	Partial Differential Equations	3	MATH 2471 and MATH 3331	Fall
MATH 4330	Mathematical Modeling in Biology	3	MATH 3331 and MATH 2441 (C or better in both)	On Demand
MATH 4340	Numerical Methods	3	MATH 3320 and MATH 2441 or MATH 1491, CSCI 1470, and CSCI 1480 (C or better in both)	Spring
MATH 4362	Advanced Calculus I [Upper Core : Z]	3	MATH 2471 and MATH 2335	Spring (Even Years)
MATH 4375	Introduction to Topology I	3	MATH 2471 or Consent of instructor	On Demand
MATH 4385	Complex Analysis	3	MATH 2471	Spring

ANCILLARY REQUIREMENTS (6-8 HOURS)

OTHER REQUIREMENTS

MIS 4355 and MIS 4380 or CSCI 1470 and CSCI 1480 or ECON 2320 and ECON 2321 or ECON 3301 and ECON 3302 or BIOL 1440 and BIOL 1441 or INSU 3324 and ECON 2320 (or ECON 2321)	<ul style="list-style-type: none"> • MINOR REQUIRED (Computer Science Recommended) • Must complete 120 semester hours including 38 hours of General Education • GPA of 2.00 or better in each of the major and minor fields • Must have 40 hours of upper level (3000 or 4000) level courses • At least 15 hours of the major must be earned in residence
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Effective Fall 2020