# Applied Quantitative Sciences

## 2020-2021 Catalog Year

This list of courses is designated for students who are pursuing the Applied Quantitative Sciences degree.

Students will complete 15 credit hours of required courses distributed across four categories:

**Statistics**, 6 hours; only 3 hours may be lower-division

**Data Skills**, 3 hours

**Technical/Professional Communication**, 3 hours

**Capstone/Project**, 3 hours

**Upper Division Major Electives**, (21 hours for standalone major, 9 hours for concurrent degree majors) – major elective hours may be filled by any upper division courses listed under the Statistics, Data Skills, Technical/Professional Communication, or Capstone/Project tables.   Major Electives are in addition to courses already counting to meet one of the four category requirements.

**Statistics**

ABS 350 Applied Statistics (3)
ACT 415 Probability for Risk Management (3)
AGB 360 Agribusiness Statistics (3)
ASM 465 Quantification & Analysis for Anthropologists (3)
BIO 415 Biometry (4)
CRJ 303 Statistical Analysis (3)
ECN 221 Business Statistics (3)
ECN 231 Honors Business Statistics (3)
EGR 280 Engineering Statistics (3)
GIS 470 Statistics for Geographers (3)
HCD 300 Biostatistics (3)
HSE 230 Statistics for Human Research I
HSE 430 Statistics for Human Research II
IEE 380 Probability & Stats Engineering Problem Solving (3)
JUS 302 Statistical Analysis for Justice Studies (3)
PAF 301 Applied Statistics (3)

PAF 301 Applied Statistics (3)
PBH 300 Biostatistics (3)
POS 401 Political Statistics (3)
PSY 230 Intro to Statistics (3)
PSY 231 Honors Introduction to Statistics (4)
PSY 330 Statistical Methods (3)
SBS 304 Social Statistics I (3)
SBS 404 Social Statistics II: Multivariate Analysis
SGS 401 Political Statistics I
SOC 390 Social Statistics I (3)
STP 226 Elements of Statistics (3)
STP 231 Statistics for the Life Sciences (3)
STP 310 Design and Analysis of Experiments (3)
STP 311 Regression and Time Series Analysis (3)
STP 420 Introductory Applied Statistics (3)
STP 421 Probability (3)
STP 425 Stochastic processes (3)
STP 427 Mathematical Statistics (3)
STP 429 Experimental Statistics (3)
STP 450 Nonparametric Statistics (3)
STP 452 Multivariate Statistics (3)
STP 460 Categorical Data Analysis (3)
STS 401 Statistics in Science Technology & Society (3)
SWU 321 Statistics for Social Workers (3)

**Data Skills**

ACO 100 All About Data (3)
ACO 102 Object-Oriented Programming (3)
ACO 220 Intro to Database Systems (3)
ACO 240 Intro to Programming Languages (3)
ACO 350 Systems Programming
ALA 235 Intro to Computer Modeling
AME 230 Programming for the Media Arts
CIS 105 Computer Applications and Information Tech (3)
CIS 235 Intro to Information Systems (3)
CIS 308 Advanced Excel in Business (3)
CIS 315 Intro to Business Data Analytics (3)
CIS 340 Business Information System Development I (3)
CIS 345 Business Information System Development II (3)
CIS 355 Business Data Warehouses & Dimension Model (3)
CIS 360 Business Data Concepts (3)
CIS 365 Business Data Systems Development (3)
CIS 375 Business Data Mining (3)
CIS 415 Big Data Analytics & Visualization in Business (3)
CIS 430 Networks and Distributed Systems (3)
CIS 450 Enterprise Analytics (3)
CPI 101 Intro to Informatics (3)
CSE 100 Principles of Programming with C++ (3)
CSE 110 Principles of Programming (3)
CSE 205 Object-Oriented Programming Languages & Data
CSE 240 Intro to Programming Languages
CSE 310 Data Structures and Algorithms

DCE 240 Media for Dance
DSC 236 Intro to Computer Modeling
EDT 180 Technological Literacy:  Problem Solving
EDT 321 Computer Literacy: Mobile Technologies
EGR 219 Computer Modeling of Engineering Systems
GIS 211 Geographic Information Science I
GIS 222 Programming Principles in GIS I
GIS 311 Geographic Information Science II
GIS 322 Programming Principles in GIS II
GIT 312 3-D Computer Graphics Modeling and Rep.
GLG 410 Computers in Geology
IEE 305 Information Systems Engineering
MHL 201 Media Literacy for Musicians
SCM 314 Analytics for Logistics
SES 130 Coding for Exploration

**Research and Analysis**

AML 406 Directed Reading & Research in App Math (3)
ASB 302 Ethnographic Field Study
ASM 338 Anthropological Field Session (1-12)
ASM 365 Doing Archeology (3-4)
BCH 392 Intro to Research Techniques (1-3)
BIO 314 Research Colloquium in Biology & Society I (2)
BIO 435 Research Techniques in Animal Behavior (3)
BIO 489 School of Life Sciences Research Fellow (1)
CHM 392 Intro to Research Techniques (1-3)
COM 308 Advanced Research Methods in Communication
COM 408 Quantitative Research Methods in Com.
CRJ 302 Research Methods
CSM 402 Assessment & Eval of Community Services (3)
EDS 302 Design Inquiry & Undergraduate Research (3)
ENG 390 Methods of Inquiry (3)
ETH 310 Critical Research Methods (3)
FAS 361 Research Methods (3)
FAS 390 Supervised Research Experience (1 – 3)
GCU 485 International Field Studies (1 – 12)
GCU 496 Geographic Research Methods (3)
GLG 451 Field Geology I (3)
GLG 489 Field Geochemistry (3)
GPH 491 Geographic Field Methods (3)
HCR 301 Research Methods Health Care Professionals (3)
HSE 290 Experimental Methods in Human Systems Res.
HSE 390 Quantitative Research Methods
HST 300 Historical Inquiry (3)
HST 495 Methods of Historical Inquiry (3)
ISS 301 Integrative Social Science Research Methods
JUS 301 Research in Justice Studies (3)
MAT 495 Undergraduate Research
MKT 352 Marketing Research
PAF 302 Public Service Research Methods (3)
POS 301 Empirical Political Inquiry (3)
PSY 290 Research Methods (4)

PSY 390 Experimental Psychology (3)
SGS 305 Research Methods (3)
SOC 391 Research Methods (3)
STS 301 Research in Science and Technology Studies (3)
TCL 304 Transborder Research Methods

**Technical and Professional Communication**

ART 116 Intro to Digital Media (3)
COM 222 Argumentation
COM 225 Public Speaking
COM 250 Communication and the Workplace (3)
COM 259 Communication in Business & the Professions (3)
COM 312 Communication, Conflict and Negotiation
COM 353 Professional Communication
COM 422 Advanced Argumentation
COM 453 Communication in Training and Development
COM 459 Theory & Methods of Social Media Networks (3)
CRJ 300 Oral and Written Communication for Criminal Jus.
EDS 200 Design Literacy & Communication (3)
ENG 301 Writing for the Professions (3)
ENG 302 Business Writing
ENG 417 Virtual Worlds for Global Communication
FMP 255 Media Authorship (3)
FMS 351 Emerging Digital Media (3)
GIT 135 Graphic Communication
GIT 303 Digital Publishing (3)
HCD 310 Health Communication
HCR 406 Health Literacy for Healthcare Professionals (3)
IAP 361 Digital Editing & Media Literacy (3)
JMC 310 Public Relations
JMC 415 Writing for Public Relations
MCO 435 Social Media
NTR 351 Nutrition Communication
OGL 340 Organizational Skills
TWC 301 Fundamentals of Writing for Digital Media (3)
TWC 347 Written Communication for Managers (3)
TWC 411 Principles of Visual Communication (3)
TWC 414 Visualizing Data and Information (3)

**Capstone**

***484 Internship
***492 Honors Directed Study
***493 Honors Thesis
AME 485 Digital Culture Capstone I
AME 486 Digital Culture Capstone II
ASB 452 Community partnerships for Global Health (3 – 9)
BMI 481 Capstone I
BMI 482 Capstone II
CIS 440 Capstone in Information Systems
CSE 423 systems Capstone Project I

CSE 424 Systems Capstone Project II
CSE 485 Computer Sciences Capstone Project I
CSE 486 Computer Sciences Capstone Project II
ECN 475 Capstone in Economics
FAS 390 Supervised Research Experience (1-3)
FAS 460 Leadership, Research & Collaboration Comm. (3)
FAS 461 Community Action Research Exp Internship (3)
FOR 485 Forensic Science Capstone
GIT 480 Senior Project (3)
GLG 464 Solving Environmental Problems (3)
GLG 495 Undergraduate Thesis (3)
HCR 426 Health Care Coordination Capstone
HCR 449 Integrative Healthcare Capstone
HCR 463 Capstone Project
HON 492 Honors Directed Study
HON 493 Honors Thesis
HRC 480 Capstone/Practices/Approaches
HSE 477 Human Systems Engineering Capstone
IAS 480 Capstone/Practices/Approaches
IFT 401 Information Technology Capstone
IFT 402 Information Technology Capstone II
MBB 490 Capstone: Issues in Biotechnology (2)
MBB 491 Capstone: Issues in Molecular Science (2)
OGL 481 Organizational Leadership Pro Seminar I
OGL 482 Organizational Leadership Pro Seminar II
OGL 484 Internship
PAF 400 Senior Capstone Project
PAF 421 Leadership Capstone
PSY 399 Supervised Research (1-3)
PSY 477 Applied Capstone Experience (3)
SES 410 Senior Exploration Project I (3)
SES 411 Senior Exploration Project II (3)
SSH 402 Community Partnerships for Global Health (3)
TCL 305 Transborder Practicum and Field Research (3)
TWC 490 Capstone
USL 402 Service Learning: Education and Youth
USL 410 Service Learning diverse Community Issues
USL 496 Service Learning Capstone (3)
USL 497 Service Learning Capstone Project
WPC 470 Business Admin Capstone
WPC 480 Capstone Course