

GEORGE MASON UNIVERSITY - COLLEGE OF SCIENCE
B.S. DEGREE IN BIOLOGY
CONCENTRATION IN BIOINFORMATICS
(1200 Exploratory Hall, 703-993-1050)
2019-2020 Catalog

Completed	MASON CORE REQUIREMENTS (27)	Course	Grade
	ENGH 101 (100) (3)		
	COMM (3) (100 or 101)		
N/A	Quantitative Reasoning (satisfied by completion of major requirements)	XXXX	XXXX
	Literature (3)*		
	Fine Arts (3)*		
	Western Civilization HIST 100 or HIST 125 (3)		
	Social and Behavioral Science (3)		
N/A	Natural Science Sequence (satisfied by completion of major requirements)	XXXX	XXXX
	Global Understanding (3) ^{2,4*}		
N/A	Information Technology (satisfied by completion of major requirements)	XXXX	XXXX
	ENGH 302 (C or better) (3)		
	Synthesis (3)		

*A listing of courses satisfying many of the general education requirements can be found on the reverse side of this sheet

MAJOR REQUIREMENTS: BIOLOGY [CORE] (21)

	BIOL 213 (4) Cell Biology		
	BIOL 214 (4) Introduction to Biostatistics		
	BIOL 311 (4) General Genetics (Prerequisites: BIOL 213 required, BIOL 214 is recommended)		
	BIOL 308 (5) Foundations of Ecology and Evolution (Prerequisite: BIOL 213, 214 required, BIOL 311 is recommended) Writing Intensive		
	BIOL 300 (4) Biodiversity (Prerequisite: BIOL 213, required)		

MAJOR REQUIREMENTS: BIOLOGY ELECTIVES (23)

	CDS 230 (3) Modeling and Simulation I		
	BINF 401 (3) Bioinformatics and Computational Biology I		
	BINF 402 (3) Bioinformatics and Computational Biology II		
	BIOL 312 (4) Biostatistics for Bioinformatics		
	BIOL 401 (3) Phage Discovery		
	BIOL 412 (3) Phage Genomics		
	Biology Elective lab: 305 & 306, 320, 322 & 323, 331, 332, 334, 336, 344, 345, 350, 355, 379, 385 & 486, 405, 407, 430, 431, 437, 438, 439, 452 & 453, 454 & 455, 465, 468, 472 & 473, 484 & 485, 509 & 510, 543, 538		
A. BIOL	B. BIOL	C. BIOL	D. BIOL

MAJOR SUPPORTING REQUIREMENTS (32-33)

	CHEM 211, 213 (4) and CHEM 212, 214 (4) General Chemistry		
	CHEM 313, 315 (5) Organic Chemistry I		
	CHEM 314, 318 (5) or GEOL 101 and 102 (8), or CHEM 300-400 (not 314) (3)		
	PHYS 243, 244 and 245, 246 (8)		
	One of the following MATH 111, or 113, or (MATH 123 and MATH 124)		
	CDS 130 (3) is recommended to fulfill the Computer Science requirement		

GENERAL ELECTIVES (16-17) (List courses)

MINIMUM HOURS TO GRADUATE: 120			
UPPER DIVISION CREDITS (300+ level) (minimum 45)			
Minimum GPA: (overall 2.00, Major 2.0 [Biology majors must earn a minimum grade of C in all biology core courses listed above], Supporting 2.0)			

This planning form is intended for use in consultation with your academic advisor; The Undergraduate Catalog is the official reference for program information.
 For advising appointments go to www.biology.gmu.edu 6/19

Literature

ARAB 325 - Major Arab Writers/Stories
CHIN 310 - Survey of Chinese Literature
CHIN 311 - Modern Chinese Literature
CHIN 325 - Major Chinese Writers
CHIN 328 - Asian American Women Writers
CLAS 250 - Classical Mythology
CLAS 260 - Legacy of Greece and Rome
CLAS 340 - Greek and Roman Epic
CLAS 350 - Greek and Roman Tragedy
CLAS 360 - Greek and Roman Comedy
CLAS 380 - Greek and Roman Novels
ENGL 201 - Reading and Writing -Texts
ENGL 202 - Texts and Contexts
ENGL 203 - Western Literary Tradition
ENGL 204 - Western Literary Traditions
FREN 325 - Major French Writers
FREN 329 - Prob of West Civ French Lit
FRLN 330 - Topics in World Literature
GERM 325 - Major Writers
ITAL 320 - Topics Italian Film and Literature
ITAL 325 - Major Italian Writers
JAPA 340 - Topics Japanese Literature
PHIL 253 - Philosophy and Literature
RELI 235 - Religion and Literature
RUSS 325 - Major Russian Writers
RUSS 326 - Survey of Russian Literature
RUSS 327 - Survey of Russian Literature
SPAN 325 - Major Hispanic Writers

Fine Arts

ARTH 101 - Intro to the Visual Arts
ARTH 102 - Symbols and Stories in Art
ARTH 103 - Introduction to Architecture
ARTH 200 - Survey of Western Art
ARTH 201 - Survey of Western Art
ARTH 203 - Survey of Asian Art
ARTH 204 - Survey of Latin American Art
ARTH 321 - Greek Art and Archaeology
ARTH 322 - Roman Art and Archaeology
ARTH 324 - The Hellenistic World
ARTH 333 - Early Christian Byzantine Art
ARTH 334 - Western Medieval Art
ARTH 335 - Arts of Medieval England
ARTH 340 - Early Renaissance Art in Italy
ARTH 341 - Northern Renaissance Art
ARTH 342 - High Renaissance Art Italy
ARTH 344 - Baroque Art Italy, France, and Spain,
ARTH 345 - Northern Baroque Art,
ARTH 360 - 19th-Century European Art
ARTH 362 - 20th-Century European Art
ARTH 372 - 18th -19th-Century US Art
ARTH 373 - 20th-Century US Art
ARTH 376 - 20th-C Latin American Art
AVT 103 - Intro to the Artist's Studio
AVT 104 - Studio Fundamentals I
AVT 215 - Typography
AVT 222 - Drawing I
AVT 232 - Painting I
AVT 243 - Printmaking I
AVT 252 - Fundamentals of Photography
AVT 253 - Intro to Digital Photography
AVT 262 - Sculpture I
AVT 272 - Interdisciplinary Arts
DANC 101 - Dance Appreciation
DANC 119 - Dance in Afro-Latino Culture:
DANC 125 - Beginning Modern Dance
DANC 131 - Beginning Jazz Technique
DANC 145 - Beginning Ballet
DANC 161 - Beginning Tap Dance
DANC 225 - Beginning Interm Modern Dance
DANC 231 - Interm Jazz Technique
DANC 245 - Beginning Interm Ballet
DANC 301 - What is Dance?
DANC 325 - Modern/Contemporary Dance III
DANC 331 - Advanced Jazz Dance
DANC 345 - Ballet III
DANC 425 - Modern/Contemporary Dance IV
DANC 445 - Ballet IV
DANC 390 - Dance History: Pre-20th C
DANC 391 - Dance History: 20th Century
ENGL 370 - Introduction to Documentary
ENGL 371 - Television Studies
ENGL 372 - Introduction to Film
ENGL 396 - Intro to Creative Writing
FAVS 225 - The History of World Cinema
GAME 101 - Intro to Game Design
MUSI 100 - Fundamentals of Music
MUSI 101 - Intro to Classical Music
MUSI 102 - Popular Music in America
MUSI 107 - The Development of Jazz
MUSI 280 - Athletic and Ceremonial Ensemble
MUSI 301 - Music in Motion Pictures
MUSI 302 - American Musical Theater
MUSI 380 - Wind Ensemble (1 cr)
MUSI 381 - University Chorale (1 cr)
MUSI 382 - Piano Ensemble (1cr)
MUSI 383 - Symphonic Band (1cr)
MUSI 384 - Symphonic Chorus (1cr)
MUSI 385 - Chamber Singers (1cr)
MUSI 387 - Symphony Orchestra (1cr)
MUSI 389 - Jazz Ensemble (1cr)
MUSI 485 - Chamber Ensembles (1cr)
PHIL 156 - What is Art?
THR 101 - Theatrical Medium
THR 150 - Drama, Stage, and Society I
THR 151 - Drama, Stage, and Society II

THR 210 - Acting I
THR 230 - Intro to Technical Theater
THR 395 - Theater -the Life of the Mind
THR 411 - Directing on Screen
THR 412 - Performance on Screen

Social and behavioral science

AFAM 200 - Intro to African American Studies
ANTH 114 - Intro to Cultural Anthro
ANTH 120 - Unearthing the Past:
ANTH 135 - Becoming Human: Evo, Cogn, Culture
ANTH 396 - Issues in Anthropology: Social Sciences
BUS 100 - Business and Society
CONF 101 - Conflict and Our World
CONS 410 - Human Dimensions in Conservation
CRIM 100 - Intro Criminal Justice
ECON 100 - Economics for the Citizen
ECON 103 - Microeconomic
ECON 104 - Macroeconomic
ECON 105 - Environ Econ for the Citizen
ECON 110 - Intro to Economic Science
ECON 111 - Lab Methods in Economics (iw/ ECON 110)
EDUC 372 - Human Dev, Learning, and Teaching
GGS 103 - Human Geography
GOVT 101 - Democratic Theory/ Practice
GOVT 103 - Intro to American Gov
HEAL 230 - Intro to Health Behavior
HIST 121 - Form of the American Rep
HIST 122 - Development of Modern America
LING 306 - General Linguistics
PSYC 100 - Basic Concepts in Psychology
PSYC 211 - Developmental Psychology
PSYC 231 - Social Psychology
SOC 101 - Introductory Sociology
SOM 100 - Business in American Society
TOUR 311 - Women and Tourism
WMST 200 - Intro to Women and Gender Studies

Global Understanding

ANTH 302 - Peoples & Cultures of Latin America
ANTH 306 - Peoples and Cultures of Island Asia
ANTH 307 - Ancient Mesoamerica
ANTH 308 - Peoples & Cultures of the Middle East
ANTH 309 - Peoples Cultures of India
ANTH 312 - Political Anthropology
ANTH 313 - Myth, Magic, and Mind
ANTH 316 - Peoples and Cultures of the Caribbean
ANTH 331 - Refugees
ANTH 332 - Cross-cultural perspectives on globalization
ANTH 385 - Gender, Class, and Ethnicity in Latin America
ARTH 319 - Art & Archaeology of the Ancient Near East
ARTH 320 - Art of the Islamic World
ARTH 380 - African Art
ARTH 382 - Arts of India
ARTH 383 - Arts of Southeast Asia
ARTH 384 - Arts of China
ARTH 385 - Arts of Japan
ARTH 386 - The Silk Road
BUS 200 - Global Environment of Business
CEIE 100 - Environ Engineering
COMM 305 - Foundation of Intercultural Comm
COMM 456 - Comparative Mass Media
CRIM 405 - Law and Justice
DANC 118 - World Dance
DANC 318 - Global Perspect: World Dance
DANC 418 - Global Dance Intensive: Study Abroad Cuba
ECON 360 - Econ of Developing Areas
ECON 361 - Econ Dev of Latin America
ECON 362 - African Econ Development
ECON 380 - Economies in Transition
ECON 390 - International Economics
ENGL 362 - Global Voices
ENGL 366 - idea of a World Literature
FAVS 300 - Global Horror Film
FRLN 331 - Topics in World Cinema
GCH 205 - International Health
GGS 101 - Major World Regions
GLOA 101 - Intro to Global Affairs
GOVT 132 - Intro to International Politics
GOVT 133 - Intro to Comparative Politics
HIST 251 - Survey of East Asian History
HIST 252 - Survey of East Asian History
HIST 261 - Survey of African History
HIST 262 - Survey of African History
HIST 271 - Latin American History
HIST 272 - Latin American History
HIST 281 - Middle Eastern Civilization
HIST 282 - Survey of Middle Eastern Civilization
HIST 328 - Rise of Russia
HIST 329 - Modern Russia and Soviet Union
HIST 356 - Modern Japan
HIST 367 - Postwar Japan
HIST 358 - Post-1949 China
HIST 360 - History of South Africa
HIST 364 - Revolution/Radical Politics in Latin America
HIST 365 - Conquest/Colonization in Latin America
HIST 387 - Topics in Global History
HIST 460 - Modern Iran
HIST 462 - Women in Islamic Society
JAPA 310 - Japanese Culture
MBUS 305 - Managing a Global Economy
MUSI 103 - Musics of the World
MUSI 431 - Music History in Society
PHIL 243 - Global Environmental Ethics
PSYC 379 - Applied Cross-Cultural Psych
RELI 100 - Human Religious Experience

RELI 211 - Religions of the West
RELI 212 - Religions of Asia
RELI 313 - Hinduism
RELI 315 - Buddhism
RELI 341 - Global Persp on Spirituality and Healing
RELI 374 - Islamic Thought
RUSS 354 - Post-Soviet Life
SOC 120 - Globalization and Society
SOC 320 - Social Structure and Globalization
SOC 332 - Sociology of Urban Communities
SPAN 322 - Intro to Latin American Culture
SPAN 466 -Latin American Civilization/Culture
SYST 202 - Engineering Sys in a Complex World
THR 359 - World Stages
TOUR 210 - Global Understanding through Travel/Tourism
WMST 100 - Rep of Women

Synthesis Requirement

Take a synthesis course after completing at least 60 credits

ANTH 400 - Engaging the World:
ARTH 394 - The Museum
AVT 385 - EcoArt
AVT 497 - Senior Project
AVT 498 - Senior Design Project
BENG 492 - Senior Advanced Design Project I
BENG 493 - RS: Senior Advanced Design Project II
BINF 354 - Foundations in Mathematical Biology
BIOL 301 - Biology and Society (**Not for BIOL major credit**)
BIS 490 - Senior Project
BUS 498 - Capstone Course -Advanced Business Model
CEIE 490 - Senior Design Project
COMM 326 - Rhetoric of Social Movements and Political Controversy
COMM 362 - Argument and Public Policy
COMM 454 - Free Speech and Ethics
CONF 490 - Integration
CONS 490 - Integrated Conservation Strategies
CONS 491 - RS: Comprehensive Conservation Planning
CRIM 495 - Capstone in Criminology, Law and Society
CS 306 - Synthesis of Ethics/ Law for Computing Pro.
DANC 490 - Senior Dance Seminar
ECE 492 - Senior Adv Design Project I
ECE 493 - Senior Adv Design Project II
ECON 309 - Economic Problems and Public Policies
EDUC 490 - Students Teaching in Education
ENGL 305 - Dimensions of Writing and Literature
EVPP 335 - People, Plants, and Culture
EVPP 480 - Sustainability in Action
FAVS 352 - Ethics of Film and Video
FRLN 385 - Multilingualism, Identity, and Power
GAME 490 - Senior Game Design Capstone
GCH 465 - Community Health Capstone
GEOL 420 - Earth Science and Policy
GGS 303 - Conservation of Resources Environment
GGS 304 - Populations Dimensions of Global Change
GOVT 490 - Synthesis Seminar
GOVT 491 - Honors Seminar
HAP 465 - Integration of Professional Skills and Issues
HIST 300 - Introduction to Historical Method
HIST 499 - Senior Seminar in History
IT 492 - Senior Design Project I
LAS 499 - Research Seminar in Latin American Studies
MATH 400 - History of Math
MUSI 490 - Musical Communication in Context
NCLC 308 - American Landscapes in Fiction, Film, History
NURS 465 - Examination of Integration of Professional and Health care Issues
PHIL 309 - Bioethics
PHIL 343 - Issues in Environmental Ethics
PHIL 377 - Darwin: Biology and Beyond
PHIL 378 - Reason, Science, Faith in the Modern Age
PHIL 379 - Perspectives on Time
PHYS 346 - Quarks to Strings
PROV 342 - George Mason Debates
PSYC 405 - Mystery, Madness, and Murder
PSYC 406 - Psychology of Communication
PSYC 427 - Community Engagement for Social Change
RELI 490 - Comparative Study of Religions
RUSS 353 - Russian Civilization
SOC 377 - Art and Society
SOC 483 - The Sociology of Higher Education
SPAN 388 - Introduction to Latina/o Studies
SYST 495 - Senior Design Project II
THR 440 - Advanced Studies in Directing/Dramaturgy
THR 496 - Text in Production