

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

Completed	<b><u>MASON CORE REQUIREMENTS (27)</u></b>	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) <sup>2,4*</sup>		
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) <b>Cell Biology</b>		
	BIOL 214 (4) <b>Introduction to Biostatistics</b>		
	BIOL 311 (4) <b>General Genetics</b> (Prerequisites: BIOL 213 required. BIOL 214 is recommended)		
	BIOL 308 (5) <b>Foundations of Ecology and Evolution</b> (Prerequisite: BIOL 213, 214 Required, BIOL 311 is recommended) Writing Intensive		
	BIOL 300 (4) <b>Biodiversity</b> (Prerequisite: BIOL 213, required)		

**MAJOR REQUIREMENTS: BIOLOGY ELECTIVES (23)**

	BIOL305 (3) with BIOL306 (1) <b>Biology of Microorganisms</b> (lecture/lab)		
	BIOL 385 (3) <b>Biotechnology and Genetic Engineering</b>		
	BIOL 483 (4) <b>General Biochemistry</b>		
	Courses chosen from: (List choices bellow) BIOL314, 382, 401, 402. 403, 405, 411, 412, 417, 418, 420, 421, 422, 452, 453, 465, 482, 484, 486, 497 (12 credits) (Laboratories associated with these courses are required. At least one of there electives must include a laboratory)		
A. BIOL	B. BIOL	C. BIOL	D. BIOL

**MAJOR SUPPORTING REQUIREMENTS (32-33)**

	CHEM 211, 213 (4) and CHEM 212 , 214 (4) <b>General Chemistry</b>		
	CHEM 313, 315 (5) <b>Organic Chemistry I</b>		
	CHEM 314, 318 (5) <b>Organic Chemistry II</b>		
	PHYS 243, 244 and 245, 246 (8)		
	One of the following MATH 111, or 113, or (MATH123 and MATH124)		
	CDS130 (3)		

**GENERAL ELECTIVES (16-17) (List courses)**

<b>MINIMUM HOURS TO GRADUATE: 120</b>		
<b>UPPER DIVISION CREDITS (300+ level) (minimum 45)</b>		
<b>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)</b>		

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](http://www.biology.gmu.edu)

## 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-20<sup>th</sup> C  
DANC 391 - Dance History: 20<sup>th</sup> 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  
SOCI 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 Perspective: 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  
SOCI 120 - Globalization and Society  
SOCI 320 - Social Structure and Globalization  
SOCI 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 490 - 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  
SOCI 377 - Art and Society  
SOCI 483 - The Sociology of Higher Education  
SPAN 388 - Introduction to Latin/o Studies  
SYST 495 - Senior Design Project II  
THR 440 - Advanced Studies in Directing/Dramaturgy  
THR 496 - Text in Production