

Projected Course Offerings for MS in Biotechnology and Bioinformatics Program and MS Biotechnology/MBA Dual Degree Program

**(Adjustment may occur due to budgetary and enrollment concerns)**

Term 1	Course #	Title	Units	Lab	Notes
Fall	BIOL 300	Cell Biology	4 (3 for lec and 1 for lab)	biology	Prerequisite: BIOL 201 with C or better grade Prerequisite for BIOL 504
	BINF 500	DNA/Protein Sequence Analysis	3 (lecture in lab)	computer	Prerequisite: BIOL 400 or consent of instructor Required by all degrees
	BINF 513	Programming for Bioinformatics	3 (lecture in lab)	computer	Required for Bioinformatics Emphasis; Prerequisites: BINF501 & COMP462 or instructor consent
	BIOL 504	Molecular Cell Biology	3 (lecture only)		Required for all prog except Bioinformatics Emphasis Prerequisite: BIO300 or instructor consent Elective for Bioinformatics Emphasis
	BIOL 500	Intro to Biopharmaceutical Production Operations	3 (lecture only)		Elective for all programs No prerequisite
	BIOL 509	Plant Biotechnology	4 (3 for lec and 1 for lab)	biology	Elective for all degree programs Prerequisite: BIO 400 and 422 or instructor consent
	BIOL 602	Stem Cell Technology Internship	6 (lasts 4 terms as 2 3-unit courses)	off site	Required for SCT&LM Emphasis, Prerequisite BIOL 511 and consent of instructor required
	BUS 508	Business Law	3 (lecture only)	online	Foundation for MBA No prerequisite
	BUS 502	Quantitative Methods for Decision-Making	3 (lecture only, online)	online	Foundation for MBA No prerequisite
	BUS 510	High Performance Management	3 (lecture only)		Required for the Biotech/MBA dual degree program Corequisite: BUS 520
	BUS 520	Strategy and Leadership	3 (lecture only)		Required for the Biotech/MBA dual degree program Corequisite: BUS 510
	BUS 550	The Contemporary Firm	3 (lecture only)		Required for the Biotech/MBA dual degree program Prerequisite: BUS 530 & 540
	BUS 560	The Entrepreneurial Manager	3 (lecture only)		Required for the Biotech/MBA dual degree program Prerequisite: BUS 530 & 540
	MGT 421	Human Resource Management	3 (lecture only)		Elective for all degree programs Prerequisite: MGT 307 or BUS 506
	MGT 471	Project Management	3 (lecture only)		Required for all degree programs

Prerequisite: MGT 307 or BUS 506

<b>Term 2</b>	BIOL 400	Molecular Biology	4 (3 for lec and 1 for lab)	biology	Prerequisite for BIOL 505, 506 and 509
	<b>Winter</b>				Prerequisites: BIO 300 or 302 with C or better grade
	BINF 500	DNA/Protein Sequence Analysis	3 (lecture in lab)	computer	Required by all degrees; prerequisite Bio400 or consent of instructor
	BINF 501	Biological Informatics	3 (lecture in lab)	computer	Required for Bioinformatics Emphasis Prerequisite: BIOL 431 or consent of instructor
	BINF 512	Algorithms for Bioinformatics	3 (lecture in lab)	computer	Elective for Bioinformatics Emphasis Prerequisite: BINF 500 or consent of instructor
	BIOL 503	Biotech Law and Regulation	3 (lecture only)		Required for all degree programs, Elective for MBA
	BIOL 505	Molecular Structure	4 (3 for lec and 1 for lab)	bio/comp	Required for Biotechnology Emphasis and Elective for other programs; Prerequisite: BIO 400 or instructor consent
	BIOL 506	Molecular Evolution	4 (3 for lec and 1 for lab)	biology	Elective for all programs; Prerequisite: BIOL 400 or 401 or instructor consent
	BIOL 602	Stem Cell Technology Internship	6 (lasts 4 terms as 2 3-unit courses	off site	Required for SCT&LM Emphasis, Prerequisite BIOL 511 and consent of instructor required
	BIOL 510	Tissue Culture Techniques and Stem Cell Technology	3 (1 for lec, 2 for lab, 2 labs/wk)	biology	Required for Dual degree, SCT&LM Emphasis and Elective for other Emphases, Prerequisite BIOL 504
	BIOL/BUS 610	Team Project	6 (2 lec/activities/wk)		Required for Dual degree MS Biotech and MBA Program approval
	BUS 500	Economics for Managers	3 (lecture only, online)	online	Foundation for MBA No prerequisite
	BUS 506	Principles of Management and Marketing	3 (lecture only, online)	online	Foundation for MBA No prerequisite
	BUS 530	Managing Business Operation	3 (lecture only)		Required for the Biotech/MBA dual degree program Prerequisite: BUS 510 & 520, Corequisite: BUS 540
	BUS 540	Financial Reporting and Analysis	3 (lecture only)		Required for the Biotech/MBA dual degree program Prerequisite: BUS 510 & 520, Corequisite: BUS 530
	PHYS 445	Image Analysis and Pattern Recognition	3 (lecture in lab)	computer	Elective for Bioinformatics Emphasis; Prerequisite: PHYS/COMP/MATH 345 or instructor consent
	BIOL 601	Seminar Series in Biotech/Bioinfo	1 (1 hr seminar/wk)		Required for all degree programs except SCT&LM No prerequisite
<b>Term 3</b>	BIINF 514	Statistical Methods in Computational Biology	3 (lecture in lab)	computer	Elective for Bioinformatics Emphasis and other

**Spring**

				programs; prerequisite: BIOL 203, MATH151 or instructor consent
BIOL 300	Cell Biology	4 (3 for lec and 1 for lab)	biology	Prerequisite: BIOL 201 with C or better grade Prerequisite for BIOL 504
BIOL 502	Techniques in Geonomics/Proteomics	3 (1 for lec, 2 for lab, 2 labs/wk)	biology	Required for all degree programs Prerequisite: BIOL 401 or instructor consent
BIOL 504	Molecular Cell Biology	3 (lecture only)		Required for all prog except Bioinformatics Emphasis Prerequisite: BIO300 or instructor consent Elective for Bioinformatics Emphasis
BIOL 508	Advanced Immunology	4 (3 for lec and 1 for lab)	biology	Elective for all programs Prerequisite: BIOL 300 or instructor consent
BIOL 511	Advanced Stem Cell Technology	3 (1 for lec, 2 for lab, 2 labs/wk)	biology	Required for SCT&LM Emphasis and elective for other emphases, Prerequisites: BIOL 427 and 510
BIOL 513	Cell Culture Facility Management	3 (lecture only)		Required for the SCT&LM Emphasis, Prerequisite BIOL 510 and consent of instructor for enrollment Elective for other programs
BIOL 600	Team Project	4 (2 lec/activities/wk)		Required for Biotechnology and Bioinformatics Program approval required
BIOL 601	Seminar Series in Biotech/Bioinfo	1 (1 hr seminar/wk)		Required for all degree programs except SCT&LM No prerequisite
BIOL 602	Stem Cell Technology Internship	6 (lasts 4 terms as 2 3-unit courses)	off site	Required for SCT&LM Emphasis, Prerequisite BIOL 511 and consent of instructor required
BUS 504	Introduction to Accounting and Finances	4 (lecture only, online)	online	Foundation for MBA No prerequisite
BUS 510	High Performance Management	3 (lecture only)		Required for the Biotech/MBA dual degree program Corequisite: BUS 520
BUS 520	Strategy and Leadership	3 (lecture only)		Required for the Biotech/MBA dual degree program Corequisite: BUS 510
BUS 550	The Contemporary Firm	3 (lecture only)		Required for the Biotech/MBA dual degree program Prerequisite: BUS 530 & 540
BUS 560	The Entrepreneurial Manager	3 (lecture only)		Required for the Biotech/MBA dual degree program Prerequisite: BUS 530 & 540

**Term 4****Summer**

BIOL 427	Developmental Biology	4 (3 for lec and 1 for lab)	biology	Prerequisite for BIOL 511 Prerequisite: BIOL 300 with C or better grade
BINF 510	Database Systems for Bioinfo	3 (lecture in lab)	computer	Required for Bioinformatics Emphasis Prereq: BINF 501 & COMP 420 or instructor consent

BINF 511	Computational Genomics	3 (lecture in lab)	computer	Required for Bioinformatics Emphasis Prerequisite: BINF 500 or instructor consent
BIOL 400	Molecular Biology	4 (3 for lec and 1 for lab)	biology	Prerequisite for BIOL 505, 506 and 509 Prerequisites: BIOL 300 or 302 with C or better grade
BIOL 502	Techniques in Genomics/Proteomics	3 (1 for lec, 2 for lab, 2 labs/wk)	biology	Required for all degree programs Prerequisite: BIOL 401 or instructor consent
BIOL 505	Molecular Structure	4 (3 for lec and 1 for lab)	bio/comp	Required for Biotechnology Emphasis and Elective for all other programs; Prerequisite: BIOL 400 or instructor consent
BIOL 507	Pharmacogenomics and Pharamacoproteomics	3 (lecture only)		Elective for for all programs; Prerequisite: BINF500, BIOL 504 or instructor consent
BIOL 510	Tissue Culture Techniques and Stem Cell Technology	3 (1 for lec, 2 for lab, 2 labs/wk)	biology	Required for Dual degree, SCT&LM Emphasis and Elective for other Emphases, Prerequisite BIOL 504
BIOL 512	Advanced Topics in Regenerative Medicine	1 (1 hr seminar/wk)		Required for the SCT&LM Emphasis, elective for other programs Prerequisite BIOL 511 or consent of instructor
BIOL 600	Team Project	4 (2 lec/activities/wk)		Required for Biotechnology and Bioinformatics Program approval required
BIOL 602	Stem Cell Technology Internship	6 (lasts 4 terms as 2 3-unit courses	off site	Required for SCT&LM Emphasis, Prerequisite: BIOL 511 and consent of instructor required
BIOL/BUS 610	Team Project	6 (2 lec/activities/wk)		Required for Dual degree Approval by MS Biotech and MBA programs req'd
BUS 500	Economics for Managers	3 (lecture only, online)	online	Foundation for MBA No prerequisite
BUS 502	Quantitative Methods for Decision Making	3 (lecture only, online)	online	Foundation for MBA No prerequisite
BUS 504	Introduction to Accounting and Finances	4 (lecture only, online)	online	Foundation for MBA No prerequisite
BUS 506	Principles of Management and Marketing	3 (lecture only, online)	online	Foundation for MBA No prerequisite
BUS 530	Managing Business Operation	3 (lecture only)		Required for the Biotech/MBA dual degree program Prerequisite: BUS 510 & 520, Corequisite: BUS 540
BUS 540	Financial Reporting and Analysis	3 (lecture only)		Required for the Biotech/MBA dual degree program Prerequisite: BUS 510 & 520, Corequisite: BUS 530
MGT 471	Project Management	3 (lecture only)		Required for all degree programs Prerequisite: MGT 307 or BUS 506
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**\* BUS 508 is waived with completion of BIOL 503. BUS 502 is waived with completion of BIOL 203 or upper-division statistics course.**

Term 1: Fall starting October - December

Term 3: Spring, starting April - June

Term 2: Winter, starting January - March

Term 4: Summer, starting July - September