Master Advisor: John Yoder, 101 Asmundson Hall, 530-752-1741, jiyoder@ucdavis.edu
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MAJOR IN BIOTECHNOLOGY (2013-2014)
Animal

Date:_____ID: _____Name:_____

E-mail: _____Phone:_____

☐ **English Composition Requirement.....0-8**
(See College requirement) _____ _____

☐ **Upper Division Composition** (may overlap with English Composition Requirement)…**....4**
One of: UWP 101, 102A, 102B, 102C, 102D, 102E, 102F, 102G, 102H, 102I, 102J, 102K, 102L, 104A, 104B, 104C, 104D, 104E, 104F, 104I, 104T

☐ **Breadth/General Education.....24-32**
(See University requirement)

- ☐ **General Education II**
- ☐ **General Education III**
- ☐ **IGETC**

☐ **Preparatory Subject Matter.....58-66**
☐___PLS 120 (4), Applied Statistics in Ag. Science (F); or STA 100 (4), Applied Statistics for Bio. Sciences (FWSU)
☐___BIT 1 (4), Introduction to Biotechnology (S)
☐___BIS 2A (5), Intro. Biology (FWSU)
☐___BIS 2B (5), Intro. Biology (FWSU)
☐___BIS 2C (5), Intro. Biology (FWSU)
☐___CHE 2A (5), General Chemistry (FWU)
☐___CHE 2B (5), General Chemistry (WSU)
☐___CHE 2C (5), General Chemistry (FSU)
☐___Organic Chemistry, select one of the following groups:
- ☐___CHE 8A (2), Organic Chem.: Brief Course (FSU); and
  ___CHE 8B (4), Organic Chem.: Brief Course (FWU); or
- ☐___CHE 118A (4), Organic Chem. For Health and Life Sciences (FWSU); and
  ___CHE 118B (4), Organic Chem. For Health and Life Sciences (FWSU); and
  ___CHE 118C (4), Organic Chem. For Health and Life Sciences (FWSU); or
- ☐___CHE 128A (3), Organic Chem. (FW); and
  ___CHE 128B (3), Organic Chem. (WS); and
  ___CHE 128C (3), Organic Chem. (FS).; and
  ___CHE 129A (2), Organic Chem. Lab (FW)

☐___Math, select one from the following groups:
- ☐___MAT 16A (3), Short Calculus (FWSU); and
  ___MAT 16B (3), Short Calculus (FWSU); or
- ☐___MAT 17A (4), Calculus for Bio and Med (FWS); and
  ___MAT 17B (4), Calculus for Bio and Med (FWS); or
- ☐___MAT 21A (4), Calculus (FWSU); and
  ___MAT 21B (4), Calculus (FWSU)

☐___PHY 7A (4), General Physics (FWSU)
☐___PHY 7B (4), General Physics (FWSU)

☐ **Depth Subject Matter.....16-20**
☐___BIS 101 (4), Genes and Gene Expression (FWSU) *BIS 2C; CHE 8B or 118B or 128B*
☐___BIS 104 (3), Regulation of Cell Function (FWSU) *BIS 101 and (102 or 105)*
☐___MCB 121 (3), Molecular Biology of Eukaryotic Cells (FWS) *BIS 101 and (103 or 105)*
☐___BIT 171 (3), Professionalism and Ethics in Genomics and Biotechnology (FWS) *UD standing/natural science major*
☐___192, Internship; and/or 199, Independent Research; and/or BIT 189L, Laboratory Research in Genomics and Biotechnology; (3 total*)* (FWSU) *consent of instructor*
☐___BIT 188 (3), Undergraduate Research Proposal (S) *upper div. standing* (Optional)
☐___BIT 194H (1), Honor's Undergraduate Thesis (Optional)

☐ **Specific Course Requirements.....27-35**
☐___Biochemistry, select one of the following groups:
  ☐___BIS 105 (3), Biomolecules and Metabolism (FWS) *BIS 2C; CHE 8B or 118B or 128B*
  ☐___BIS 102 (3), Structure and Function of Biomolecules (FWSU) *CHE 8B or 118B or 128B;*
  ___BIS 103 (3), Bioenergetics and Metabolism (FWSU) *BIS 102*
  ☐___ABI 102 (5), Animal Biochemistry and Metabolism (F) *CHE 8B or 118B or 128B;*
  ___ABI 103 (5), Animal Biochemistry and Metabolism (W) *ABI 102*
☐___MIC 101 (5), Introductory Microbiology (FWSU) *BIS 2A, CHE 2B (may be taken concurrently)*
☐___ANG 111 (4), Molecular Biology Lab (FU) *BIS 2C, 101, 103 or 105*
☐___MCB 182 (3), Principles of Genomics (W) *BIS 101*
☐___NPB 101 (5), System Physiology (FWSU) *BIS 2A, CHE 2B, PHY 1B or 7C strongly recommended*
☐___MCB 150 (4), Developmental Biology (F) *BIS 101;* **or** MCB 163 (3), Developmental Genetics (S) *MCB 121*
☐___ANS 170 (4), Ethics of Animal Use (S) *any basic course in composition and speech*

☐ **Restricted Electives (Select at least one course from each of the areas).....10**

A. Animal Cell Biology/Microbiology/Immunology
☐___BIT 150 (4), Applied Bioinformatics (Not being offered*) ECS 10 or 15, or PLS 21; BIS 101 and 104; PLS 120, or STA 13 or 100*
☐___BIT 161A (6), Genetics and Biotechnology Lab (WU) *PLS 152 or BIS 101*
☐___BIT 161B (4), Plant Genetics and Biotechnology Lab (S) *PLS 152 or BIS 101*
☐___BIT 188 (3), Undergraduate Research Proposal (S) *upper-div standing*
☐___EVE 100 (4), Introduction to Evolution (FWSU) *BIS 2C, and MAT 16ABC or equivalent*
☐___MIC 115 (4), Recombinant DNA Cloning and Analysis (F) *BIS 101*
☐___MIC 162 (4), General Virology (W) *BIS 102 or 105*
☐___MCB 120L (6), Biochemistry Lab (FWSU) *BIS 103 (may be taken concurrently)*
☐___MCB 160L (4), Principles of Genetics Laboratory (FWS) *BIS 101*
☐___PMI 126 (3), Fundamentals of Immunology (W) *BIS 102 or BIS 105 or consent of instructor;*
or MMI 188 (3) Human Immunology (W) *One lower-division BIS course*
☐___PMI 126L (2), Immunology Lab (W) *PMI 126 or MMI 188 or equiv.(may be taken concurrently)*
☐___PMI 127 (5), Medical Bacteria and Fungi (S) *MIC 102/102L, PMI 126 or MMI 188, MIC 101 or MIC 104/104L*
☐___PMI 128 (3), Biology of Animal Viruses (S) *BIS 102/105*
☐___MCP 200L (4), Animal Cell Culture Lab (W) *BIS 102/105 and BIS 104 or consent of instructor*
☐___NPB 132 (3) Genes, Nutrients, and Health (F) *BIS 2A*
☐___PLP 140 (4), Agricultural Biotechnology, Ethics and Public Policy (S) *high school biology*

B. Animal Reproduction and Breeding
☐___ANG 107 (5), Genetics of Animal Breeding (F) *BIS 101* (requires PTA to add)
☐___ANS 131 (4), Aquatic Animal Reproduction and Develop. (S) *MCB 150, WFC 120, 121; or COI*
☐___ANS 140 (4), Management of Laboratory Animals (F) *NPB 101*
☐___AVS 121(2), Avian Reproduction (W) *BIS 2C*
☐___NPB 121 (4) Physiology of Reproduction (W) *NPB 101*
☐___NPB 121L (1) Physiology of Reproduction Lab (W) *NPB 121 (may be taken concurrently)*
☐___EVE 102 (4), Population and Quantitative Genetics (F even yrs) *BIS 101, STA 100, and EVE 100*
☐___MCB 164 (3), Advanced Eukaryotic Genetics (S) *MCB 121*
☐___PLP 140 (4), Agricultural Biotechnology, Ethics and Public Policy (S) *high school biology*