

**IAI Biological Sciences Major Panel**  
Course Approval Criteria  
Revised Fall 2025

An institutionally approved representative syllabus in electronic format is required by the panel for its review. Institutions should submit an actual and recent instructor syllabus which is not more than three years old. If the course is yet to be taught, a sample syllabus intended for future students is still required.

**The representative course syllabus and any additional submission materials must include:**

- **Institutional Name**
- **Course prefix, number, and title**
- **Course description:** Including the full catalog course description is required. The course description should compare favorably with the proposed IAI course description.
- **Number of credit hours:** For combined lecture and lab/studio courses, please include lecture credit hours, lab/studio credit hours as well as contact hours for lecture and lab/studio components. Indicate if these are semester or quarter hours.
- **Prerequisites and co-requisites:** If prerequisites are required for a course, it is preferred that the course prefix, course number, course name, and when IAI approved, the IAI code, are included in the submitted syllabus. Important note: as a rule, general education (GECC) courses in IAI should not have prerequisites. There are a few exceptions to this rule for sequences such as written composition and calculus; see panel specific information. Major courses may have prerequisites as appropriate. Co-requisite courses should show the credit hour breakdown between the two courses.
- **Textbooks, additional readings, additional course materials:** Please note if different resources are required for different delivery modes. Course materials should reflect content outcomes and requirements, and should be recently produced. For published texts, please include author, title, edition, date of publication, publisher, and the ISBN. If the course utilizes online or OER materials, please include an active hyperlink; hyperlinks cannot be embedded in the LMS nor be blocked by a password because the panel needs to have full access to the resource.
- **Delivery mode:** traditional/nontraditional, in-person/online/hybrid, etc.
- **Course Objectives:** The course objectives should clearly support the course description.
- **Assignment descriptions:** Please include a detailed description of assignments, readings, projects, etc. Assignment details should be clearly evident and referenced, and show connection to the course learning objectives. Assignments should demonstrate the rigor and scope of the course.
- **Methods of evaluating student learning:** The syllabus should state clearly how learning outcomes will be assessed, such as through objective/subjective examinations, written assignments, oral presentations, projects, etc.
- **Grading scale and assignment weighting:** Please provide a grading scale and indicate the relative weight of assignments or evaluation categories (e.g., exams, essays, projects, etc.).
- **Detailed course outline, daily/weekly/hourly schedule:** A detailed topical outline and weekly schedule that **goes beyond chapter numbers and titles from a textbook (or select readings)** must be included and it should provide specific details of topics being presented in class. This may include assignments, readings, projects, etc. as appropriate. This could be done using a few bullet points or a couple of sentences. This level of detail is also appropriate for the lab/studio outline in courses that contain a lab or studio component. The lab/studio outline should include similar information but also detail the tools, materials, equipment, and instruments being used and the outcomes or topics that the students will be exploring.

### **General Coding Practice:**

A course can only be assigned to one IAI code/description per panel. Institutions should be clear and careful in determining which IAI code is identified for any syllabus submitted for approval. The institution should also assure that the course meets the minimum semester credit hour requirement included with the IAI course description.

A student may “count” only one course per code in fulfilling transfer requirements, even though an institution may assign more than one course to a code. In some cases, however, students at schools on a quarter calendar may need to complete two courses to equate to a one-semester course. An equivalency in this circumstance would be three quarter-credits equals two semester credit hours and five quarter-credits equal three semester credit hours.

### **Panel Specific Requirements:**

Note: In order for your course to articulate as IAI BIO910 or **BIO920 or BIO 920C (lab with cadaver)**, it will need to meet the criteria described above. You should know that panel members use this document as a checklist when reviewing your course sequence.

Note: Include MATERIALS REQUIRED (for each course)

PLEASE NOTE: Submitters must include syllabi and lab descriptions from ALL the courses at their institution that comprise the introductory major’s biology course sequence. Institutions sometimes submit information for only one of the courses in a two or three course sequence. PARTIAL submissions will NOT be considered.

### **1. The Representative Instructor’s syllabus must include:**

- o **Lecture topics for the full sequence for BIO 910 MUST include (please see BIO 910 description):**
  - "Science" as a process
  - Evolution
  - Biological chemistry
  - Cell structure & function
  - Cell processes:
    - ~metabolism (e.g., respiration and/or photosynthesis)
    - ~division
  - Genetics:
    - ~ transmission (i.e., "Mendelian")
    - ~ molecular
  - Diversity:
    - ~ microorganisms including
      - viruses
      - prokaryotes
      - eukaryotes
        - ~ plants
        - ~ fungi
        - ~ animals
  - Anatomy & physiology of a sampling of animal **and** plant systems above the cellular level (**revised Fall '25**)
  - Ecology (covering a range of scales from individuals to ecosystems)

- o Lecture topics for the full sequence for BIO 920 or BIO 920C (lab with cadaver) MUST include (please see BIO 920 or 920C (lab with cadaver) description):

- Body plan and organization
- Biochemistry
- Cell Structure and Function
- Histology
- Integumentary System
- Skeletal System
- Muscular System
- Nervous System (including Central, Peripheral and Autonomic)
- Special Senses
- Cardiovascular System
- Respiratory System
- Immune System
- Digestive System
- Urinary System
- Body fluids and Acid/Base Balance
- Endocrine System
- Reproductive System

**2. Brief synopsis of each lab for BIO 910 and BIO 920 or 920C (lab with cadaver), which includes the following information:**

- o Short summary (few sentences or bullet points) describing:
  - Lab topic
  - Organisms used
  - Lab Activities: This should include a brief but detailed description of the activities that students will be engaged in during **EACH** lab period.
  - Materials and equipment used
  - Analyses and writing performed
- o Labs for the BIO 910 sequence should be chosen with respect to the following guidelines:
  - Labs utilize the methods of science to identify and investigate questions relevant to biology.
  - Activities illustrate biological concepts (microscopic to ecological).
  - Organism/s are used to demonstrate concepts.
  - A diversity of current techniques and instruments that enable the study of organisms on the biochemical, microscopic, and macroscopic levels are used. For a list of suggested techniques and instruments, visit [Modern Biology Tools - Google Docs](#).
  - Labs include a variety of quantitative measurement techniques.
  - No more than 4 labs (out of the course sequence) are computer simulations or at-home lab kits.
  - No more than 3 labs (out of the course sequence) are field trips.
- o Labs for BIO 920 or 920C (lab with cadaver) should be chosen with respect to these guidelines:
  - Labs utilize the methods of science to identify and investigate questions relevant to biology.
  - Activities illustrate biological concepts (microscopic to organismal).
  - Organism/s are used to demonstrate concepts.
  - Current techniques and instruments used.
  - Labs include a variety of qualitative and quantitative measurement techniques.
  - No more than 4 labs (out of the course sequence) are computer simulations.
  - No more than 1 lab (out of the course sequence) are field trips.
  - The panel expects at least 6 labs that incorporate physiology for the courses in this identifier.