

**IAI Physics 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, quizzes, 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 ensure 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: Please provide the approximate number of sections offered yearly per each delivery mode.

Note: The submitted syllabus is required to have a date of preparation and the semester for which it was written.

Note: When online or other forms of resources are used, if the panel does not see enough detail in the syllabus to determine the appropriateness of these materials, the panel will request more information from the institution.

Note: Please detail the delivery modes for all offered lecture and lab sections (online, hybrid, face-to-face) paying particular attention to document existence of lab sections with different delivery modes. *If a course is a hybrid course, please identify total weekly hours spent on online course components, e.g., 2 hours weekly spent doing online videos, presentations, etc.*

### **Lab course submission documentation details**

Lab sheet (tabular format) must be included that documents each lab module/activity paying particular attention to activity format (e.g., hands-on, virtual, other activity) and documents if sections with different delivery modes (e.g., face-to-face, on-line, hybrid) use different formats or activities.

- **Lab manual:** Lab sheet table must list the title, author, and publication date of the lab manual used. If different lab materials are used for different delivery modes, then the information relevant to each lab manual should be included and documented. At least 2 of the 3 sample labs should be hands-on.
- **Custom Lab Manuals:** If the lab manual was created by the institution or is custom published, then the panel requires three representative sample labs modules be submitted.
- **Descriptions of labs:** Descriptions of all lab activities (not just titles) should be included for all delivery modes (e.g., face-to-face and online and hybrid). Description of the labs should include the time spent on each lab as distinct from non-lab related activities such as recitation. The type of activity (e.g. hands-on, virtual, computer simulation, field trip, programming, etc.) should be made clear from the lab activity description and also denoted in a separate column.
  - It should be clear within descriptions that experimentation and data analysis are thoroughly explored within the lab content. Data collection using interaction with physical equipment is necessary for successful completion of the course for IAI approval.

While experimental computational labs can be included in this data collection requirement, computer simulations are not likely to fulfill the requirements of hand-on lab experience.

- **Lab submission requirements**

- PER each LAB module - paying particular attention to documenting differences or similarities in actual activities used in hybrid or on-line sections to face-to-face sections.
- Document if differences exist in lab modules and lab module format for different delivery modes.
- Please provide laboratory contact hours (1 credit = 30-45 contact hours). Certain activities within a lab may not be able to be counted in lab contact hours, such as some lab exams, etc.
- The panel requires a minimum of 30 scheduled contact hours of lab and a minimum of 10 lab activities on different topics, of which no more 2 can be simulations. All 10 labs should involve the collection and analysis of data. The descriptions of labs should include clear evidence of actual lab time doing experiments. It should indicate what the experiments are, and the time spent to do that activity. Other activities that are not spent on experimentation should be mentioned with time spent on these activities.

- **Topic Specific Concerns**

- Interference and diffraction must be covered within an institution's [PHY 915A](#) or [915C](#). **If an institution offers a PHY 915 option, interference and diffraction must be included within either the institution's PHY 911, PHY 912, or PHY 915 option.**

### **Common Reasons Courses Are Not Approved**

- Course does not match description for IAI designation.
- Topical outline does not have enough detail.
- Information relevant to assess lecture was not included within a lecture/lab course submission.
- Lab activities are not described in sufficient detail.
- If a custom laboratory manual is used, 3 examples must be submitted.
- Laboratory contact hours do not meet the IAI panel's requirements.
- Lab sheet/content is inadequate.

## PHYSICS MAJOR PANEL

### Course Syllabus Checklist

- Course Description**
  - A complete description for this course is required; a catalog description may be substituted if it is sufficiently informative. The course description should compare favorably to the description given on the iTransfer website. It should include prerequisites and corequisites information.
  
- 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.
  
- Institutional or instructor evidence of reflection on teaching excellence**
  - Listing of objectives or outcomes or goals.
  
- Laboratory Contact Hours**
  - The panel requires a minimum of 30 scheduled contact hours of lab and a minimum of 10 lab activities on different topics, of which no more 2 can be simulations. All 10 labs should involve the collection and analysis of data. Certain activities within a lab may not be able to be counted in lab contact hours, such as some lab exams.
    - The descriptions of labs should include clear evidence of actual lab time doing experiments. It should indicate what the experiments are, and the time spent to do that activity. Other activities that are not spent on experimentation should be mentioned with time spent on these activities.
    - Certain activities within a lab may not be able to be counted in lab contact hours, such as some lab exams, etc.
  
- Date of Preparation of the Syllabus**
  - The submitted syllabus is required to have a date of preparation and the semester for which it was written.
  
- Topical Outline (Daily/Weekly Schedule)**
  - The Physics Major Panel will review the schedule for evidence of the content of the course for a full semester or equivalent. Provide detailed outlines of all topics, assignments and activities.
  - Do not list simply "Chapter 1, Chapter 2" etc. Listing the chapter titles from the published text is not sufficient either. More detail is required.
  - A weekly lab schedule including a concise description of each laboratory experience is required including equipment/instrumentation used. In addition, the panel requests an indication if any non "hands-on" lab experiences or instructional methodologies are used (e.g., web, videotape)