

# **Guidelines: PhB Science (Hons) - Advanced Studies Courses**

The PhB Science (Honours) program requires completion of a minimum six Advanced Studies projects taken as either an Advanced Studies Course (ASC) or an Advanced Studies Extension (ASE). Of the six projects required, at least three must be ASCs.

## What is an ASC?

An ASC is a course individually designed by a PhB student in discussion with their ASC instructor. The course should be designed with a strong research focus customised to the student's specific interests and skills. Inventiveness and creativity is encouraged in the development of these courses, with the purpose of allowing students to drive their own exploration of science and develop a strong base in research.

Example formats for ASCs include:

- an individually supervised empirical research project with a researcher or research team
- an individually supervised reading/theoretical project
- a small group seminar/reading course.

ASCs can be completed during any semester or session. Most PhB students don't enrol into an ASC until the second semester of their first year.

Instructors:	Academic staff from the Joint Colleges of Science; Health and Medicine can act as ASC
	instructors.

Academic visitors to the ANU and scientists employed outside of ANU can also act as ASC instructors with the approval of the PhB Convenor. Where an ASC instructor is not affiliated with ANU, an ANU co-marker is required.

Students are encouraged to work with different labs/groups and to explore new areas. To encourage this, it is expected that you undertake each ASC project with a different instructor.

As a guideline, each six-unit ASC should entail a workload of 10 hours each week or aWorkload:total of 120 to 150 hours over an entire semester/session.

ASCs are considered large projects for an undergraduate student and are part of a student's normal full-time enrolment, not an extra activity. ASC Instructors are asked to keep in mind that students are studying 24 units in each semester (normally four courses) and that the ASC is just six units of that load.

Due dates: For Advanced Studies Courses in Semester 1 and 2, all assessment items, including final reports, are due to Instructors by the last Friday before the examination period begins.

For non-standard session ASCs (Summer, Autumn, Winter, Spring) all assessment is due by no later than the last day of the session.

If your non-standard session ASC has any overlap with Semester 1 or 2, then you will need to be successful in an application for overload or enrol in no more than 18 units in that half-year period (Summer, Semester 1, Autumn or Winter, Semester 2, Spring). See information about overload at: <u>https://www.anu.edu.au/students/program-administration/enrolment/overload-your-enrolment</u>.

Submission: Students must submit final reports on Wattle via the ASC submission link for the respective session (i.e. Semester 1, Summer etc), and also, at the same time, submit a copy to their supervisor (in an email as an attachment). Students should also email their report to the co-marker, if they know who it is. If the report is marked by a panel (Biology and Physics), or the students does not know their co-marker, this is not necessary.

*Extensions:* Consistent with ANU-wide extension policy, ASC extensions will only be granted due to exceptional circumstances beyond the student's control. Exceptional circumstances that may warrant extensions include, but are not limited to:

- a. medical reasons (student injury, illness or medical condition) of such significance that completion of the assessment task was not possible
- b. family/personal reasons (family injury or illness, bereavement) of such significance that completion of the assessment task was not possible
- c. employment related reasons: where a student's employment status or employment arrangements change unexpectedly due to circumstances beyond their control of such significance that completion of the assessment task was not possible
- d. through no fault of the student, they experience abnormal, unpredictable, and unforeseen difficulties in carrying out the work (e.g. as a result of the destruction of materials during your project; unforeseen unavailability of a piece of equipment, consumables or experimental organisms)
- e. unforeseen extended absence/unavailability of supervisor.

ASC extensions will **not** be granted for the following reasons:

- a. to allow you to produce a better piece of work by having extra time to complete assessment
- b. project being more challenging/more work than anticipated
- c. where the condition or circumstances are the consequence of a student's own action or inaction, either direct or indirect
- d. mild illness or minor circumstance
- e. misreading or misunderstanding the published/agreed due dates

- f. routine activities demands of employment, family or friend problems such as relationship tension, adjustment to university life, demands of academic life, need for financial support, demands of sporting, social and extra-curricular activities, personal travel arrangements which conflict with the assessment due dates
- g. assessment items for other courses with conflicting due dates
- h. expected absence/unavailability of supervisor (this should be planned for before commencement of the project).

The relevant PhB discipline coordinator has the discretion to approve an extension of up to two weeks for any of the acceptable reasons listed above. To seek an extension, students should email their ASC instructor giving the reasons for requesting the extension, ASC Instructors should forward this email with their endorsement of the request to the PhB discipline coordinator (contact details are listed on the PhB Wattle site); and copy the email to <u>phb.science.enquiries@anu.edu.au</u>. The PhB discipline coordinator will respond to the student, instructor and

phb.science.enquiries@anu.edu.au with their decision. If there is no PhB discipline coordinator for the area in which the ASC project is undertaken, then approval should be sought from the PhB Convenor by emailing phb.science.enquiries@anu.edu.au.

Should students require a period of extension beyond two weeks a request must be submitted in writing to the PhB Convenor (<u>phb.science.enquiries@anu.edu.au</u>). The PhB Convenor will require written confirmation of support from the ASC instructor and copies of medical certificates or any other relevant supporting documentation.

It is the student's responsibility to apply for an extension to the submission date; only applications made before the submission date will be considered. The only exception is where a student could not reasonably be expected to have applied by the appropriate date due to illness or other medical conditions.

Please also see:

Student assessment (coursework) procedure: <a href="https://policies.anu.edu.au/ppl/document/ANUP\_004604">https://policies.anu.edu.au/ppl/document/ANUP\_004604</a>

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Special Consideration: <u>http://www.anu.edu.au/students/program-</u> administration/assessments-exams/special-assessment-consideration

Late Penalties: Assessment items submitted after the due date without approval will be penalised by five per cent of the possible marks available for the assessment task per working day or part thereof. Assessment items will not be accepted after the tenth working day from the due date. SpecialThe University has defined the conditions under which special considerationConsideration:can apply. These rules apply to PhB students in the same way as to other undergraduates<br/>and the workload of the PhB does not in itself constitute grounds for special<br/>consideration. To be considered for special consideration, you must apply by following the<br/>instructions at: <a href="http://www.anu.edu.au/students/program-administration/assessments-</a><br/>exams/special-assessment-consideration

Assessment: Prior to the start of an ASC, the student and ASC instructor must discuss and agree upon course assessment. The assessment details are then set out on the ASC Summary Form for approval by the school discipline coordinator and PhB Convenor.

An oral presentation and final report are both mandatory assessment items for an ASC. Sometimes your assessment will include assignments (e.g. solving a math problem or writing computer code). Oral presentation and laboratory components must each be weighted at no more than 20 per cent of the final mark. A minimum 60 per cent of assessment must be written task/s such as a report/s or assignment/s.

An example of appropriate assessment for an ASC would be a major essay, literature review, lab report, draft research article or similar as well as a formal seminar presentation. The proposed assessment must be appropriate for the stage of a student's program – for example, a draft article may be ideal in third year, but inappropriate in first year.

There is no expectation that an ASC will produce particular results or succeed in answering the question posed. Sometimes this happens, but as with all research, things don't always go to plan and there is nothing wrong with that. The assessment of final reports does not factor in the 'success' of the project, or whether it met the original research aims. ASCs are designed to teach students how to approach a scientific problem and often much of the project will be spent trouble-shooting. Students should not feel pressured to spend endless hours collecting more and more data. It is fine to write a wellorganised and justified report that summarises efforts made even if the initial question is not answered. The main thing is that you make a good argument for what you did, why you did it and what you conclude, even if it is just a suggestion for what to try next if nothing worked. Students should make sure to meet with their supervisor frequently (at least once a week or more often) and that you both agree on the expectations of the project.

Some guidance on marking for the seminar and report can be found in the PhB Marking Guidelines (<u>http://science.anu.edu.au/files/PhB%20Marking%20Guidelines.pdf</u>). These are rough guidelines only and depend somewhat on your area of research.

- *Final Report:* The final report should be a mini-thesis of the project. There is no specific format or length requirement, but a typical ASC final report will be around 15-20 pages. However, please note that ASC final reports in Physics, Chemistry and Biology have individual formats and length restrictions. Students should seek guidance from their supervisor on writing the report. Students should provide supervisors with a draft in advance for feedback before submitting the final report. The report should provide an introduction to the question, taking into account the current literature and a critical appraisal of the literature. This should be followed by a section on the methods used, described in enough detail so that it can be replicated by someone else. Results should then be presented with text and graphs, including statistical analysis where appropriate. At the end, major conclusions should be summarised, including details of how the findings of the project have addressed the initial question and how they fit with the literature.
- Presentations: Where possible, the final presentation should be directed at the relevant research group or a larger group of academics and students working in a related area. As each area coordinates presentations differently, the PhB School Discipline Coordinator should be approached for further information if necessary. In some disciplines a seminar series is organised towards the end of semester. This provides an excellent opportunity for students to hone presentation skills in front of a wider audience.

The presentation should include an introduction to the topic, the specific question(s) investigated, how the question was approached, what was found and how the results were interpreted. It could also include some ideas for future work. Usually presentations are 15-20 minutes long and include questions at the end.

Students should put together a draft presentation and practice with their instructor (or another person from the group) to get feedback before the real presentation. Instructors (or someone delegated by the instructor) should make an effort to guide students in giving an effective presentation by providing feedback and advice for improvement.

- Research While many ASCs will be built around aspects of an Instructor's own current research, an
   Groups: ASC should not amount to the use of students as assistants who carry out mundane lab or
   literature review work for the benefit of the instructor. In an experimental or lab project,
   a certain amount of routine work is to be expected, but any ASC is primarily intended to
   be educational for the student. Learning to work as part of a team is an important aspect
   of education, so it is perfectly fine for a student to do a project that is part of a larger
   research program as long as the student's portion of the project is clearly defined.
- Employment: In a few, very specific instances, the research work carried out by a student as an ASC will also provide them with temporary part-time employment as a research assistant on a larger project. Any proposal to link an ASC with paid employment as a research assistant **must** be approved by the PhB Convenor. As a guide, this will only be permitted where the

instructor (who is responsible for assessment of the ASC) is **not** the supervisor of the research assistant (for project purposes). As appropriate, instructors should refer to University policy on Intellectual Property; Ownership, Protection and Commercialisation at http://policies.anu.edu.au

SummerSome areas of the ANU offer summer research scholarships for projects that areResearchsimilar to an ASC. In general, the ANU does not allow students to be paid for ASCs asScholarships:these are taken for credit. Some areas external to the ANU (e.g. CSIRO) allow<br/>students to undertake an ASC while receiving a summer research scholarship, with<br/>additional assessment for the ASC that is usually not part of a summer research scholarship.<br/>Students must discuss this with the PhB Convenor for approval before starting, and must<br/>discuss this with their supervisor.

Publications:If a student project produces publishable results then collaboration between the<br/>instructor and the student to publish these is strongly encouraged. In such cases, it may be<br/>appropriate to offer a second ASC to the student, the aim of which would be producing a<br/>submittable journal article. Please discuss these cases with the PhB Convenor if they<br/>involve a subsequent ASC with the same supervisor.

# ASCs – Step by Step:

## Step 1: Find a project

Student

PhB students have responsibility for initiating ASCs in consultation with their mentor and school discipline coordinator.

Some ways in which students can find project ideas are:

- referring to listings on the PhB Science Wattle Site
- discussion with their peers, mentor, school discipline coordinators and other academic staff.
- emailing a potential supervisor to discuss a project idea (either your own or by asking the supervisor for an available project)

#### **Step 2: Have the project approved** (due by Friday of week one)



#### Step 3: Enrol (due by Monday of week two)

 Student
 PhB students must self-enrol in their ASC course over ISIS, enrolling in the ASC course below that is next in sequence for them (SCNC2101 or SCNC3101):

 - SCNC2101: Advanced Studies Course

 - SCNC3101: Advanced Studies Course

## **<u>Step 4: Check Enrolment</u>** (due by the census date)



Before the census date, students must log into ISIS to check that their enrolment is correct and that the title of their project has been correctly entered.

If a student decides to drop the ASC before census date, in addition to dropping the course over ISIS, they must advise their instructor and send an email to <a href="mailto:phb.science.enquiries@anu.edu.au">phb.science.enquiries@anu.edu.au</a>.

#### **<u>Step 4: Regular Meetings</u>** (throughout the semester/session)



Students and their Instructors should aim to meet once each week during the semester/session for around 30 – 60 minutes on each occasion. Any difficulties should be reported to the PhB Convenor as soon as possible.

## **Step 5: Organise a meeting to complete the progress report** (*due by Friday of week six*)



Before the end of week six, the student should contact their instructor to organise a meeting to discuss their progress and complete an ASC Progress Report. The meeting should take place and the report completed prior to the end of week seven.

#### Step 6: Progress Report (due by Friday of week seven)



# Step 7: Submit Final Report(S1&2: due Friday before the examination period begins)(non-standard sessions: due by the date specified on the approved ASC<br/>Summary Form, no later than the last day of the session)

Unless an extension has been granted, students must submit their final report and all other assessment items to their ASC Instructor by the required due date. In addition to submitting the final report to their instructor in an email (as an attachment), students <u>must</u> submit an electronic copy to the submission box on the PhB Science Wattle site. Late penalties apply.

Students should also email their report to the co-marker, if they know who it is. If the report is marked by a panel (Biology and Physics), or the student does not know their co-marker, this is not necessary.

**<u>Step 8: Marking</u>** (S1&2: due by the end of the examination period) (non-standard sessions: due within three weeks of submission)



Student

At the end of the semester/session the ASC instructor and co-marker must provide an overall final mark for the ASC using the *PhB Marking Template*. This includes a written summary of the student's achievements and an assessment breakdown.

The final mark and written summary should be sent to the relevant school discipline coordinator and <u>phb.science.enquiries@anu.edu.au</u>.

\*Contact <a href="mailto:phb.science.enquiries@anu.edu.au">phb.science.enquiries@anu.edu.au</a> with any questions or concerns\*