

Basic level:

Research training in biology 10 and 15 hp (1BG224 and 1BG225)

Advanced level:

Research training in biology/applied biotechnology 10, 15 and 20 hp (1BG363, 1BG364 and 1BG365)

Instructions augusti 2014
Biology Education Centre

Start with this

- Read the course plan and the general information provided on the course pages at the Biology Education Centre (IBG) web pages (www.ibg.uu.se/courses/all/1BG363-4-5 or www.ibg.uu.se/courses/all/1bg224-5)
- Important! Read these instructions carefully.
- Important! See to it that your prospective supervisor early on gets hold of instructions and other relevant information about the course.
- Note that application, admission and registration for the course, all need to be cleared and finished before you may commence the course.
- It is never possible to register a holiday work or similar as Research training at a later time.
- Formal requirements to be eligible for:
 - research training in biology on **basic level** is biology, 80 credits equivalent to basic courses in biology within the Bachelor programme in biology.
 - research training in biology/applied biotechnology on **advanced level** is a bachelor's degree including alt 1) 60 credits biology and 30 credits chemistry or 30 credits earth sciences. alt 2) 90 credits biology.
- The three and two courses respectively cannot be combined into a more extensive course. On the other hand it is in principle possible to do more than one research training on different occasions and at different workplaces.
- Coordinators for the course are Katariina Kiviniemi Birgersson, mainly for those writing in English (E-mail katariina.kiviniemi@ibg.uu.se, Phone 018-471 48 35) and Eva Damm, principally for those writing in Swedish (E-mail eva.damm@ibg.uu.se, Phone 018-471 43 06).

Research training is not a project work or a “mini degree project”

- The purpose with Research training is for you to see how research and development, connected to biology or biotechnology, is organized and carried out in practice – both with respect to how knowledge and theory is built and experiments performed. However, you are in most cases not expected to have your own project – you are instead encouraged to learn different methods and ways to work. If possible strive for an overall knowledge about the workplace! During the training you may have several different supervisors even though one of them has the chief responsibility.

How to find a good place for Research training

- Choose something you are interested in.
- There are no explicit “Research training places”. Instead it is up to your own interest to take necessary initiatives and personal contacts to find a good place for your training.
- If you are not sure about your own interests, talk to teachers/researchers and contact companies and see what they may be able to offer. You may check our project database (<http://www.ibg.uu.se/ibg-student/project-offers>). See also information about biology research at Uppsala University (<http://www.ibg.uu.se/ibg-student/research>).
- There are lots of periodicals in the library, or on-line via the library web pages, with scientific publications from academic institutions and departments as well as companies. There you may also find contact information, with names and addresses to interesting researchers and groups.
- You can also search in databases such as Medline, other literature databases or the Internet.
- Research training can be performed at academic institutions and departments, companies or authorities and agencies provided that they have biology or biotechnology as part of their sphere of activities.

If you apply for Research training abroad

- Write a letter to a responsible person at the intended workplace where you introduce yourself and tell them who you are, what you have studied, what it is you want to do, when you want to do it and who pays for e.g. travel, accommodation and boarding. Also tell them who coordinates the research training at Uppsala University. It is also a good idea to attach a portrait photo of yourself.
- Be sure to attach a list of qualifications, resume or Curriculum vitae. If you are not sure what it should contain, search for “curriculum vitae” on the web.

- Describe the education programme you are taking at Uppsala University, e.g. as:
 - "Bachelor programme in biology and molecular biology"
 - or*
 - "Master programme in biology" or "...in biotechnology"
- Important! Make sure you have an insurance which covers also your time abroad. Contact Eva Damm for more information about this.

Good and clear communication

- It is very important that the student and supervisor try to be as clear as possible in their communication while discussing a possible Research training – in order to avoid misunderstandings. Even if you should not necessarily choose "the first one", be open and clear to alternative supervisors about your commitment, so nobody believes you have decided if you in fact have not. Expect and ask for the same clarity and transparency from the supervisor!

Once you have found a good workplace/supervisor

- Contact Katariina Kiviniemi Birgersson or Eva Damm who are the coordinators for Research training.
- The course can in principle be carried out any time of the year but application and registration need to be done during spring or fall term/semester times (or at least in close connection with them). You apply for the course on a specific application form that you can get from the course pages at the IBG web, or from one of the coordinators. A matriculate/transcript of records should be handed in along with the application.
- Fill out the application form along with your proposed supervisor. The supervisor must have become acquainted with the specific information for supervisors but preferably also with the additional general information about the course that is available on the course web page. Note that the theory task should be specified in more detail than merely as a subject area (i.e. it is not sufficient with for instance "ecology" or "molecular biology") Note! Along with the application should also be attached a short preliminary plan for the proposed work, maximum an A4 page in length. This can best be written by the supervisor or in close consultation with the supervisor. The plan should contain a short theory background for the field, a description of the specific work and techniques that the student should become acquainted with and a short time plan for the work (including time for writing the report).
- Please observe that there are two documents for your supervisor on the web: "Instructions for supervisors" as well as "Supervisors certificate and evaluation" template. Give both these documents to your supervisor well in advance! They should

be read and filled out by the supervisor. The certificate and evaluation template should be sent to the course coordinator once the training period is finished.

- When a complete and correctly filled out application with all supplements has been handed in, you are admitted to the course (provided of course that you are eligible). The coordinator will then register you for the course and you may commence your Research training.

Differences between the courses

- For approval and passing of all the courses, a theory examination, an oral presentation at your workplace and a written report are required. The extent and scope for all of these items are of course influenced by where the training is done, the interests of student and supervisor, the subject and topic as well as the varying lengths of the courses.
- A possible recommended pensum for the written report is roughly:
 - 3 – 5 pages for 10 hp courses
 - 4 – 6 pages for 15 hp courses
 - 5 - 8 pages for the 20 hp course
- Even though the general instructions favour an overall knowledge, the longer course variants naturally allow more opportunity also for in depth studies (without necessarily making an overall understanding more difficult to achieve). Therefore it is warmly recommended that you, at least for 1BG225 and 1BG365, also conduct short interviews with one or more researchers in the field.

The theoretical foundation

- You and your supervisor agree on suitable literature. You also jointly decide how the chosen literature is best used during the training period and how the examination of the theory task is to be carried out.
- The literature could be for instance 4-8 scientific articles, book chapters or similar. The amount and scope of the material is of course influenced by where the research training is performed and by the length of the Research training.

Presentation of the Research training at the workplace

- You must present your research training in the form of a short seminar at your workplace. The form for the seminar is jointly decided by you and your supervisor.

The written report

- Start writing well in time. Note! The report should contain a survey of the literature for the subject area.
- Leads and good general instructions can be found in the IBG booklets “Presenting science” and “How to use scientific sources...” (<http://www.ibg.uu.se/ibg-student/guide/handbooks>)
- Important! Ask for the supervision you need, also during the process of writing the report.
- You may write the report in Swedish or in English. Keep in mind that the language is very much your tool while writing the report. Therefore, take good care of the disposition, wording, grammar and spelling.
- The report should be written as a training report. The following should be clear from the report:
 - Background, where, when and for how long.
 - Describe the central activities of your workplace.
 - A short description of personnel, methods, equipment and possible research results.
 - A short description of a common work day.
 - A short description of group meetings, literature seminars, etc.
 - References to publications or similar.
- In some cases, depending on the extent and scope of the training, it can be appropriate to comply with generally accepted forms for a scientific report – ask the supervisor what is appropriate in your case! Even in such a case however, a short account of the above contents should also be included.
- Take good care with references, figures and tables. Note that you are expected to refer to all figures and tables in the running text. In addition, the figures should have legends with a title and explaining text and tables should have a title and possible explanations to make them easily intelligible. It is strongly recommended that you study the instructions in “Presenting Science”.
- Be consequent about how you give references, both when cited in the running text as well as how they are given in the reference list!
- State the source for each figure and table that you did not make yourself. Citing is allowed but not plagiarism.
- Sources for electronic media should be given stating type of media, address and date when the information was retrieved. Apart from this, see to it that they fit into the general way the references are given in the reference list as closely as possible (see “Presenting Science”).
- Layout: Give the final report a separate title page (use the template on the course web page), possible blank page(s) and pagination so it looks nice and proper in double sided

printing. Possible pagination: centre or alternate left / right; include title page (page 1) when counting the pages but do not display the page number on the title page.

- Note! Your supervisor will read and give feedback/comments on your report. It is important to rework the report with appropriate consideration to the comments from your supervisor.

Reporting

- The supervisor fills out the certificate regarding when the various course parts are accepted/passed and along with this gives detailed opinions about your performance. Thereafter the supervisor sends the certificate to the coordinator at the Biology Education Centre (IBG), Uppsala University.
- The written report, approved by the supervisor, should be handed in to the course coordinator via Urkund for assessment, *except* in the case when the supervisor considers that the information in the report requires secrecy. Be careful to check with your supervisor what applies! When both report and signed certificate has been sent to the coordinator, you may be considered having passed the course. The coordinator reports the result to Uppdok.
- The course as a whole is assessed with either of the two final judgements *not passed* or *passed*.