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Individual courses in Research Training

Student instructions

This information applies to students enrolled in

- Bachelor programme in Biology (1BG224/225)
- Master programme in Biology (1BG363/364/365)
- Master programme in Bioinformatics (1MB803/804/805)
- Master programme in Applied Biotechnology (1BG363/364/365)
- Master of engineering programme in Molecular Biotechnology (1MB773/774/775)

General information about the course can be found on the Biology Education department website <http://ibg.uu.se/education/courses-programmes/individual-courses/>. This is also where you will find other documents you need to complete the research training, such as title page template and supervisor certificate.

Start with this

Before applying, ensure that you fulfil the formal requirements to be eligible. Read the course plan and the general information provided on the website. Note that application, admission and registration for the course, all need to be cleared and finished before you may commence the course. Important! See to it that your prospective supervisor early on gets hold of instructions and other relevant information about the course. These instructions for the supervisor can be downloaded from the website.

It is never possible to register a holiday work or similar as Research training at a later time. The three courses *can not* be combined into a more extensive course. It is considered part of the training to plan according to the course extent. On the other hand it is in principle possible to do more than one research training on different occasions and at different workplaces but you can only do one of the courses once. It is, however, possible to change a longer course to a shorter should the project not be doable as planned. If so, please contact the coordinator as soon as possible.

Purpose of the course

The purpose with Research training is for you to see how research and development, connected to biology/molecular biotechnology/bioinformatics 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.

If you are more interested in carrying out your own project, please consider applying for the

Project work course instead (only available for Applied Biotechnology, Biology and Bioinformatics students at the master level).

How to find a good place for Research training

Choose something you are interested in. Own initiatives are encouraged! 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/student-en/project-offers/>). See also information about biology research at Uppsala University (<http://www.ibg.uu.se/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/biotechnology/bioinformatics as part of their sphere of activities. Your training is not limited to Uppsala or Sweden.

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.

Important! Make sure you have an insurance that covers also your time abroad. Consult the information on this website: <https://www.kammarkollegiet.se/en/insurance-students-and-state-employees/student-insurance>

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

Download the application form from the website. Fill in, preferable together with supervisor, and post/email to coordinator. Scanned and signed copies are fine. 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).

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 webpage. 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 in close consultation with the student. 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 on the web “Instructions for supervisors” as well as “Supervisors certificate and opinions” Give both of these well in time to your supervisor! They should be read and filled out by the supervisor respectively. The latter should be sent/emailed directly to the course coordinator once the training period is finished. Scanned copies are fine.

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 10 hp-, 15 hp- and 20 hp-courses

For approval and passing of all three the courses, the following is required:

- theory examination,
- oral presentation at your workplace
- written report approved by the coordinator

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.

The written report (excluding title page and appendices) is stay within:

- 10 hp: 3 – 5 pages (max 5 pages of text)
- 15 hp: 4 – 6 pages (max 6 pages of text)
- 20 hp: 5 – 8 pages (max 8 pages of text)

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).

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 brief survey of the literature for the subject area, typically within the same field as the theory task. The idea with this report is that the reader should gain sufficient knowledge to be able to understand what you did during your research training.

Leads and good general instructions can be found in the IBG booklets “Presenting science” (http://www.ibg.uu.se/digitalAssets/515/a_515518-f_presenting-science-2016-en-webb.pdf) and “How to avoid plagiarism” (http://ibg.uu.se/digitalAssets/331/c_331420-l_1-k_ibg-antiplagiat-en.pdf)

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.
- § Briefly summarize your theory task
- § References to publications or similar.
- § Self-assessment of your experience during the research training.
- § What worked well and what could have been done better?

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 explaining what the figure shows, 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”. State the source for each figure and table that you did not make yourself. Citing is allowed but not plagiarism.

Be consistent in how you give references, both when cited in the running text as well as how they are formatted in the reference list! Failing to use complete and correctly formatted citations is the most common reason why a report requires a revision. 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 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/emails (scan is fine) the certificate to the coordinator at the Biology Education Centre (IBG), Uppsala University together with the report. Make clear in the email and the report of it contains confidential material.

The written report is sent by the coordinator via URKUND, *except* in the case when the information in the report requires secrecy. Sometimes the coordinator will provide additional comments for you to consider. The coordinator reports the result to LADOK.

The course as a whole is assessed with either of the two final judgements *not passed* or *passed*.