



Manual of the Interdisciplinary Module (BETA-B2HRI) of the Science Honours Academy

2016-2017

[Version June 2017]

This manual describes the content and requirements of the Interdisciplinary Module of the Science Honours Academy (SHA). The SHA community brings together all the students and staff participating in the departmental honours programmes of the Science Faculty, namely, Biology, Chemistry, Information and Computer Sciences, Mathematics, Molecular Life Sciences, Pharmaceutical Sciences and Physics.

Students can choose from a collection of extracurricular activities from the interdisciplinary module of the SHA, for which they receive 7.5 ECTS in total. These activities, organised by the students themselves, include interdisciplinary groups projects, participation in symposia on interdisciplinary research topics, masterclasses on academic and practical skills, and a trip to internationally renowned universities or laboratories. The language of communication is English.

Further information can be found in the SHA Website <http://www.uu.nl/sciencehonours>.

This document aims to inform

- Honours students
- 1st year Honours and regular students considering joining an Honours Programme
- Academic staff involved in the SHA
- Representatives of partners or sponsors from technology and science based companies

Below is a table of contents of this manual with a brief overview of each section.

Section	Page
I. <u>Objectives and Requirements</u> <i>The SHA challenges its honours students to be aware of the motives and causes of the increasing role of interdisciplinary approaches in scientific research and offers them the possibility to develop the necessary skills to cooperate and communicate outside their own scientific field of expertise, to gain international experience, and to develop networking and leadership skills.</i>	2
II. <u>Organisation</u> <i>All the activities within the SHA interdisciplinary component are organised by student committees and Student Board, monitored by the SHA Coordinator and the Admin and Student Adviser. The departmental honours coordinators advise individual students to plan their personal progress. Students are required to obtain at least 7.5 ECTS.</i>	5
III. <u>Activities</u> <i>The programme of the interdisciplinary component consists of several activities organised by the students. These activities include amongst others symposia on interdisciplinary research topics, skills workshops, a trip to internationally renowned universities or laboratories, and research projects involving interdisciplinary strategies.</i>	7
IV. <u>Contacts</u> <i>SHA Director, SHA Coordinator, SHA Education manager, SHA Student Board and departmental honours coordinators.</i>	9

I. Objectives and Requirements

Objectives

The Science Faculty of Utrecht University offers honours programmes in each of its scientific departments. Each disciplinary honours programme, Biology, Chemistry, Information and Computer Sciences, Mathematics, Pharmaceutical Sciences and Physics, has its own format and priorities. See the respective manuals for details under the Students item at <http://www.uu.nl/sciencehonours>.

The students from all the departmental programmes come together in the interdisciplinary module in order to work in joint activities in which they have the freedom to explore new challenges and skills beyond the borders of their disciplinary programmes. The activities in the interdisciplinary module are developed to meet the following objectives:

- Building a strong interdisciplinary community
- Familiarize students with interdisciplinary approaches to scientific research
- Prepare the students to cooperate and communicate at an academic level outside their own area of expertise
- Stimulate global awareness and a deeper understanding on the ways science can contribute to deal with the societal challenges of our time
- Develop networking and leadership skills
- Provide the students with international experience

In Section III we describe several of the activities that have been developed by the students to achieve these objectives.

Requirements

The number of credits required to complete the SHA interdisciplinary module is 7.5 ECTS. These credits are part of the 15 ECTS that honours students are required to acquire in addition to the 180 ECTS from their regular bachelors programme.

For CPS students who started their bachelors in 2014-2015 there is the possibility to earn only 5 ECTS at the interdisciplinary programme and 10 ECTS in their disciplinary programme.

The interdisciplinary SHA module is registered in OSIRIS with code BETA-B2HRI. Each departmental programme is to ensure that all their honours students are registered under this course code during their second and third year bachelor studies.

Students discuss their effort with their departmental coordinators and are recommended to keep a portfolio of their honours activities including the interdisciplinary activities. The student's progress within the interdisciplinary module will be monitored by the SHA Student Board and registered on blackboard.

ECTS can be acquired with the following activities:

- 1.5 maximum for attendance to interdisciplinary symposia (0.25 ECTS/symposium)
- 0.5 maximum for attendance to interdisciplinary project presentations (0.25 ECTS/event)
- 2.0 for first time participation in the international trip (this includes a written essay or trip reportage)
- 1.0 for second time participation in the international trip (this includes a written essay or trip reportage)
- 2.5 for participating in an interdisciplinary group project (this includes a project presentation)
- 3.0 for one year membership of the SHA Student Board
- 2.0 for members of the International Trip Organising committee
- 1.0 for members of the Interdisciplinary Projects committee
- 0.5 for members of the excursion committee
- 0.75 for members of the press committee
- 0.75 for members of the receptions committee
- 0.5 for members of national trip committee per trip organised
- 0.5 for members of organising committees of interdisciplinary symposia, skills workshops, and other events or activities such as debates or seminars, (pub) quiz, ...
- 0.25-0.5 for masterclass participation
- 0.25 per attendance to national trips, debates, symposia, poster presentations (for events outside the SHA justification is required)

These credits apply to students participating in the Honours Programme in the second and third year of their bachelor programme. However, students joining the HP during their first year bachelor programme may accumulate credits by attending interdisciplinary events in block 3 and 4, e.g. symposium or project poster presentation, and include them in the required 7.5 ECTS.

Examples on fulfilling credit requirements

Honours students are to play an active role in how they acquire their ECTS both in choosing the activities in which they participate and in creating, organising and being active in new interdisciplinary SHA events. There is a good degree of freedom on how a student can gather the required 7.5 ECTS. New ideas for events and activities are encouraged and students should contact the Student Board or the SHA Coordinator to discuss their suggestions and possible implementation. Current events are built on the initiatives and the work of previous honours students.

Below we illustrate several examples of how these credits can be accumulated. Everyone is expected to be in a committee at some stage and the example depends on the type of committee a student belongs to.

Example 1: student not a member of a main committee (< 1 ECTS)

- 1.5 6 interdisciplinary symposia (max. 4 out of 6 outside of the SHA)
- 2.0 International trip
- 2.5 Interdisciplinary project
- 0.5 Event organising committee
- 0.5 Masterclass
- 0.5 Accumulated credits via national trips, skills workshop, poster presentations

Example 2: student member of a large committee (2 ECTS)

- 1.0 4 interdisciplinary symposia
- 2.0 International trip
- 2.5 Interdisciplinary project
- 2.0 International trip committee

Example 3: student member of the SHA student board (3 ECTS)

- 2.0 International trip
- 3.0 SHA Student Board
- 2.5 Interdisciplinary project

All these examples include the main activities that provide a larger number of points. These are the international trip, the interdisciplinary project, frequent attendance to symposia, and membership of student board or long-term committees. Note that attendance to the main activities during your first year in the SHA will decrease pressure on your final bachelor's year.

Language

The language of communication in the interdisciplinary component is English. The use of English acquaints the students with the language used in most international science related publications and events. Also, there is a significant number of international students participating in the SHA.

II. Organisation

Interdisciplinary component coordination

The SHA Student Board is responsible for the functioning of the SHA interdisciplinary module, activities and committees. The Student Board drafts a time-line, an overall budget and assigns students to committees.

The SHA Coordinator, Director and Admin and Student Adviser monitor the activities of the SHA interdisciplinary module and the functioning of the SHA Student Board, as well as the time-line and budget. The SHA Coordinator ensures that the activities organised by the students provide a balanced and diverse spectrum of topics across the different departmental disciplines in the SHA and monitors the quality of the activities of the interdisciplinary module. The Coordinator also monitors the content on the SHA website, keeps regular contact with the SHA student board, and works together with the departmental coordinators and the interdisciplinary project committees.

The Admin and Student Adviser provides financial and logistic advise to the SHA Student Board and the student organising committees, facilitating payments, processing refunds to student expenses, give advice on the reservation of venues and catering for interdisciplinary events, and monitor cases where students are not meeting required ECTS.

The departmental honours coordinators inform the Admin and the SHA Student Board about the honours students participating in their departmental programme and ensure that the students in their departmental programme during their 2nd and 3rd years are registered in the Osiris course code BETA-B2HRI.

Student Committees Structure

The students organise all the academic and community building activities in the interdisciplinary module of the SHA. The SHA Student Board is responsible for the formation of the different student committees and works closely with the SHA Coordinator in ensuring that the aims of the programme are being achieved. The SHA Student Board developed the structure of committees described below with the aim of providing a working structure for the interdisciplinary module and to strengthen an even integration and communication between the different disciplines in the science honours students community.

SHA Student Board: Each year a five-member Board is chosen which oversees all the committees and all interdisciplinary module activities. The SHA Student Board is monitored and advised by the SHA Coordinator and SHA Director. The Board stimulates the active student involvement in the interdisciplinary module and is the first point of contact. Membership is for one year (3.0 ECTS).

Interdisciplinary Projects Committees: These committees have four members. Two committees are required for each academic year, one for each round of projects. The committees work together with the SHA Coordinator to organise and offer group projects on interdisciplinary topics. The members plan the structure (deadline, feedback sessions, etc.), supervise the groups and organise a final poster presentation session where the results from the projects are presented. Membership is for four months (1.0 ECTS).

International Trip Committee: This committee organises the annual international trip to a European city with a rich cultural and scientific tradition. This is one of the most challenging but rewarding committees to be part of, as the aims of this trip are manifold. Organisation requires planning the journey, accommodation and meals, academic, cultural and bonding activities. Membership is on average eight to nine months and the committee has on average seven members (2.0 ECTS).

National Trip Committee: This committee organises a national trip to one of the many Dutch companies or research laboratories. In this case too, practice of interdisciplinary approaches is a major factor in the choice of the host institution. These are one-day trips. Two will take place annually, so each year there will be two trip committees. This committee consists of around four members (0.5 ECTS).

Interdisciplinary symposium committees: In addition to the above long term committees we have the committees that organise interdisciplinary symposia. Four symposia are scheduled for 2016-2017. One of the aims of these symposia is to stimulate interdisciplinary interaction and debate and bring SHA students in contact with topics and approaches outside their main discipline. Membership is in average three months and each committee has four members (0.5 ECTS).

Excursion Committee: The Excursion Committee organises at least two excursions throughout the year, for example to museums or theatre performances. It is aimed at including some cultural activities in the curriculum. This committee contains four to five people (0.5 ECTS).

Press Committee: The Press Committee records events and activities by taking pictures and writing articles for the website and the newsletter. This means that at every event or activity at least one committee member should be present. (6-7 members) (0.75 ECTS).

Masterclass Committee: The Masterclass Committee will organise a masterclass on a topic that helps to broaden the student's academic knowledge and skills. Some possible topics are: academic writing, history of science and developing leadership skills. There will be two or three masterclasses each year and for each masterclass there will be a separate committee. (4-5 members) (0.5 ECTS)

III. Activities

Outline of the activities

The objectives of the interdisciplinary module are achieved through a wide set of activities. Given the emphasis in training and skill development for future scientists in the SHA, a key operational principle is that students have a high degree of freedom and responsibility (within certain parameters) in planning, participating and contributing to the activities.

Students are encouraged to contact the SHA Student Board and/or the SHA Coordinator with proposals for alternative activities in line with the objectives of the interdisciplinary module. As not all activities are known and planned at the beginning of the study year students should stay updated with the agenda and news items on the website <http://www.uu.nl/sciencehonours>. An outline of the main activities can be found below.

Interdisciplinary Symposia

Each year a series of interdisciplinary symposia are organised by the students participating in the interdisciplinary component. The format of these events depends on the aims and topics decided by the respective organising committee in consultation with the Education Officer of the SHA Student Board. These symposia provide the opportunity to bring students in contact with leading researchers from academic institutions and science-based companies, preferably fluent in communicating to an audience outside their main discipline of expertise. Often each symposium is organized around a theme that can be related to broad societal issues (e.g. energy, water or health), technological issues (data mining, nanotechnology, quantum computing) or fundamental interdisciplinary topics such as time. The range of interdisciplinary themes over the various symposia should be evenly distributed across the different disciplines in the SHA and may even involve disciplines outside natural and life sciences.

Interdisciplinary Group Projects

This activity consists of group projects on interdisciplinary topics. The students play an active role in the choice of the topic. Each group has at most four members, preferably from at least three different departments. A student committee and a community of supervisors are available to assist the students in this group project. Project topics can range from recent development involving interdisciplinary approaches in areas such as medicine, neuroscience, nano-technology, energy, climate, food, drug innovation, sustainability, complexity or fundamental research.

International Trip

Each year, an international trip is organised to go visit universities in another country. This is the most popular activity in the interdisciplinary module and it contributes to the international experience of the science honours students. In addition, it is an eye opener to the role of interdisciplinary approach in scientific research. It also contributes to the strengthening of the interdisciplinary honours community both socially and scientifically, by nurturing cooperative work across the departmental disciplines. Trip destinations in previous years include the universities of Prague, Copenhagen, Heidelberg, Cambridge, Oxford, ETH Zurich and CERN, Geneva.

Masterclasses

At least two times a year, the SHA offers their students masterclass to learn all kinds of academic skills. The masterclass can consist of a series of short sessions over a couple of weeks where the students are asked to reflect on their own development. The design of the workshop is specially tailored to achieve the ambition of our honours programme to develop strategies and habits that will make them innovative and responsible leaders of the future. Examples of previous masterclasses are: leadership, academic English, poster pitching and oral presentations.

IV. Contacts

- **SHA Director**

dr. A.M. (Arjen) Vredenberg (A.M.Vredenberg@uu.nl)

- Office: Buys Ballotgebouw, room 770
- Mailing address: Princetonplein 5, 3584 CC Utrecht

- **SHA Education Manager**

Ir Margot Kok (M.L.Kok@uu.nl)

- Office: Buys Ballotgebouw, room 706
- Mailing address: Buys Ballotgebouw,
Princetonplein 5, 3584 CC Utrecht

- **SHA Coordinator of the Interdisciplinary Module**

dr. F.P.M. Dignum (F.P.M.Dignum@uu.nl)

- Office: Buys Ballotgebouw, room 517
- Mailing address: Buys Ballotgebouw,
Princetonplein 5, 3584 CC Utrecht

- **SHA Admin and Student Adviser**

Hans Goedemans (J.H.J.Goedemans@uu.nl)

- Office: Buys Ballotgebouw 1.78
- Mailing address: Buys Ballotgebouw,
Princetonplein 5, 3584 CC Utrecht

The SHA student board

- **President:** Luuk Muthert (Science.sha.president@uu.nl)
- **Secretary:** Nina Thierij (Science.sha.secretary@uu.nl)
- **Treasurer:** Mark Kernkamp (Science.sha.treasurer@uu.nl)
- **Education Officer:** Willem van der Feltz (Science.sha.education@uu.nl)
- **Corporate Relations Officer:** Guido de Reijer (Science.sha.corporaterelations@uu.nl)

Departmental Coordinators

- **Coordinators of the HP Biology**

Dr. Fred Wiegant (F.A.C.Wiegant@uu.nl) & Dr. Ton Peeters (A.J.M.Peeters@uu.nl)

- Office: Kruytgebouw, room Z407 (Padualaan 8, 3584 CH Utrecht)

- **Coordinator of the HP Chemistry**

Dr. Ben Ern  (B.H.Erne@uu.nl)

- Office: Kruytgebouw, room N702 (Padualaan 8, 3584 CH Utrecht)

- **Coordinator of the HP Computer Science**

Dr. Anja Volk (A.Volk@uu.nl)

- Office: Buys Ballotgebouw, room 484 (Princetonplein 5, 3584 CC Utrecht)

- **Coordinator of the HP Information Science**

Dr. Floris Bex (F.J.Bex@uu.nl)

- Office: Buys Ballotgebouw, room 5.79 (Princetonplein 5, 3584 CC Utrecht)

- **Coordinator of the HP Mathematics**

Dr. Barbara van den Berg (B.N.vandenBerg@uu.nl)

- Office: Hans Freudenthalgebouw, room 511 (Budapestlaan 6, 3584 CD Utrecht)

- **Coordinator of the HP Pharmaceutical Sciences**

Dr. ir. Dirk Rijkers (D.T.S.Rijkers@uu.nl)

- Office: David de Wiedgebouw, room 5.66 (Universiteitweg 99, 3584 CG Utrecht)

- **Coordinator of the HP Physics**

Dr. Erik van Sebille (e.vansebille@uu.nl)

- Office: Buys Ballotgebouw, room 611 (Princetonplein 5, 3584 CC Utrecht)

- **Coordinator of the HP Molecular Life Sciences**

dr. Mike Boxem (M.Boxem@uu.nl)

- Office: Hugo R. Kruytgebouw, room O508 (Padualaan 8, 3584 CH Utrecht)