

# Students' Manual - Research Component

## Research project 2021-202001050

This manual provides the introduction of the module, the tools, the detailed guidelines involved in each step for both Q1B and Q2B. The coordination team will provide an additional “schedule” file that contains the detailed deadlines for each quartile 4 weeks before the module begins. Please read them together during the module.

### Introduction of the module

The research project aims to teach students how to perform research and acquire skills in several phases of carrying out a research project. This includes defining, among others, the problem statement and motivation, the state of the art, methodology, planning, performing research, reflection, writing, (peer) reviewing, and presentation of the results. Each student needs to complete an individual research project under the supervision of a supervisor through this module. It consists of two parts: the research component (10 EC) and the reflection component (5 EC). This manual documents the detailed guidelines involved in different phases of the research component.

The research component is organized as a conference, along the lines of call for papers, ending up in a presentation at the [Twente student conference on IT \(TSCIT\)](#). It takes place twice a year, Q1B (10 weeks) and Q2B (11 weeks), and has several phases as shown in Fig.1. Phase 0 is for preparation. Before the module begins, students have to sign up to a track in Canvas and select a research topic. The first phase is from W1 to W2, and entails the research proposal. The second phase (W3-W9-Q1B or W3-W10-Q2B) is devoted to performing the research itself and finishing the research paper. In the last phase, in W10-Q1B or W11-Q2B, the conference will take place and students will present their work. The following sections introduce the detailed work and guidelines involved in each phase.

During the module, several tutorials will be given live on campus. Attendance for these sessions is compulsory and your presence will be checked (not visiting them negatively influences your grade, unless you can communicate a valid reason for non-presence to the Coordination team). The tutorials will also be made available on Canvas afterward.

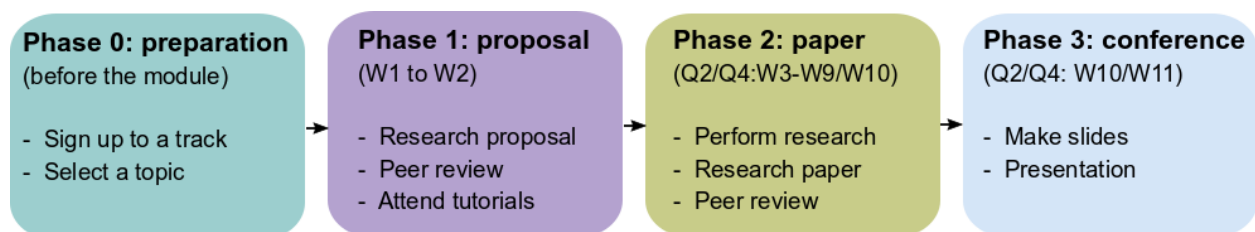


Fig.1 Four phases of the research component

The module/conference contains several tracks. Each track has a track chair. The student can

select only one track depending on their preferred research topic. Track chairs will help students find supervisors and organize regular track meetings. The track chairs are the only contact point between each track and the module coordinator. Supervisors will provide direct guidance to the students and evaluate their performance.

Note that, it is important that all mentioned deadlines including submitting proposals, reviews, and evaluation forms are met by students, supervisors, and track chairs in order to complete the module in time.

## Phase 0: Preparation

There are three tools involved in this module as shown in Fig.2 and the coordination team will make them ready at least 2 weeks before the module starts.

- 1) Canvas is used to give lectures and organize regular track meetings.
- 2) Conference website provides the detailed information of each track, the submission deadlines and guidelines, and the proceedings from the past editions. The final accepted papers will be included to the conference programme in the website, which are accessible by the public.
- 3) Easychair (link in the conference website) is used for paper submission and review.

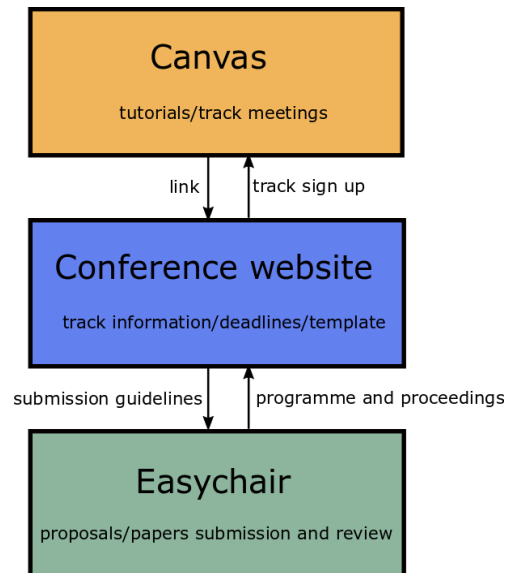


Fig.2: Three tools involved in the module

The students have to read the information of each track in the conference website to select and sign up to one track via Canvas (@tab People) **before the module starts**. Selecting a topic is **also to be done before the module starts**. Each track has a limited capacity. First come, first served! So contact the track chairs or the supervisors and arrange a topic before the module starts. Only when there is a real mismatch between the student's intended topic and selected track, is the student allowed to switch tracks. To get permission, students need to contact both their current and the potential new track chairs.

## **Phase 1: Proposal**

This is the first phase of the research project from W1 to W2. The students have to select the preferred topics within the track, review the state-of-the-art, write and submit a research proposal. The track chairs will help students find supervisors and assign reviewers (2 peer students and the supervisor) for each proposal. The supervisors will review the proposal and provide feedback. They need to fill the summary of the comments in Easychair. The detailed comments can be added to the paper and sent to the students personally.

There will be only 1 round for the proposal, either go or no-go. The decision is made by the supervisor and will be double-checked by the track chair (if it is a no-go).

### **1.1 Topic selection and supervisor assignment**

The first track meeting is on the first day of the module to help the students get familiar with the selected track. The track chairs will possibly introduce the available research topics and discuss other possibilities with the students in case the students have not selected a topic beforehand.

Based on the discussion, every student should be able to find an interesting research topic. He/she should contact the supervisors for further information, perform an initial literature review of that topic, and identify the research problem and context. This will be discussed in the 2nd track meeting on Thursday, W1.

### **1.2 Proposal submission and peer-review**

Students have to submit the proposal to Easychair by the end of W2 following the submission guidelines in the conference website. If the student is a new user to Easychair, please sign up first. When submitting the draft proposal, the **submission type "Proposal"** has to be selected and all required fields should be filled in order to receive the right reviewers. After the submission, if students want to modify something before the deadline, they can still update the submission following the instructions in Easychair.

The proposal will be reviewed by the supervisor and two students in the same track. Peer-review of other students' work is part of the evaluation. Students need to submit the comments before 23:59 hrs, Tuesday (1-day extension if there is a holiday), W3. The module coordinator will distribute the comments to the students before 9:00 hrs, Wednesday (1-day extension if there is a holiday), W3. Only the students whose proposals get accepted can continue with this module.

## **Phase 2: Performing research and research paper**

The second phase of the research project is to perform research and complete a research paper within 7-8 weeks. There are two rounds for the paper submission: the draft version and the final version, to help the student improve the quality. The track chairs will organize regular track meetings. With these meetings, students can exchange ideas with their peers and monitor their own progress. Supervisors will review the papers and provide feedback. For the draft paper, they need to fill the summary of the comments in Easychair; while for the final paper, they

only need to provide 1-2 sentences to indicate whether the comments have been well addressed and whether the paper is acceptable now. Only the accepted papers are allowed to be presented in the conference.

Note that, the conference organizing committee will select the best papers based on the draft version (due to limited time). Students who are willing to get this award should make the paper ready at the earlier stage.

## **2.1 Performing research**

Students are expected to keep regular contact with the supervisors; each student and supervisor can agree if they would like to meet on campus or online. Track chairs will organize regular track meetings. Via these meetings, students can discuss with each other and reflect on their own progress.

## **2.2 Mobility online registration**

It is mandatory for the students to register the research projects in the application [Mobility Online \(MOL\)](#), otherwise, BOZ cannot register the final grade. Students have to start the registration before the end of W7. The information can be updated/corrected before the end of W9. Below are the instructions:

Go to [Mobility Online \(MOL\)](#), under “Graduation registration” choose the standard registration and fill in the requested information. The dates of the project are the first and last date of the module. The committee chair is the Track Chair. You don't have to name the other persons involved in your supervision. After completing the form, you need to sign and send the pdf form by email to your track chair for another signature. After signing, the track chair will send the form back and you have to upload the signed form to the system. If you can't find your track chair's name in the system, please write one email to your track chair and the module coordinator at least 3 working days before the deadline.

## **2.3 Draft paper submission and peer-review**

The Students have to submit the draft papers before 23:59 hrs, Sunday, W8-Q1B/W9-Q2B. When submitting to EasyChair, students need to fill in all required items, and select the **submission type as “Research paper”**. This is a **NEW submission**.

The draft paper will be reviewed by the corresponding supervisor and 1 track student. Please check the “best paper nomination” box if you would nominate the paper to get the best paper award and do not make your final decision. Module coordinator will distribute the review comments before 9:00 hrs, Wednesday, W9-Q1B/W10-Q2B.

## **2.4 Final paper submission and peer-review**

The students have to revise the paper according to the feedback and submit their final papers before the end of Sunday, W9-Q1B/W10-Q2B. Please **DO NOT** start a new submission: only update the previous submission.

The supervisors will review the final paper. The module coordinator will announce the notification to all students by 9:00 hrs, Wednesday, W10-Q1B/W11-Q2B. Only the students whose papers get accepted can present their work at the conference. For the rejected papers, there could be a resit with limited audience, but it needs a valid reason (e.g., birth). The organization is up to the track chairs.

If students want to make any change after receiving the comments, they can still revise the paper and upload it to Easychair (update the previous submission) before 14:00, Thursday, W10-Q1B/W11-Q2B. This version will not be reviewed but will be accessible by the public via the conference website as the camera-ready version.

### **Phase 3: Conference**

The conference will be held on the last day of the module, i.e., Friday, W10-Q1B/W11-Q2B. Students whose papers get accepted will present their work at the conference and track chairs will moderate their track sessions. The presentation requirement and detailed organization of the conference will be published in Programme and proceeding of the conference website.

#### **3.1 Conference programme**

After the draft paper notification, the coordination team will prepare the draft conference programme. The track chair will arrange the presentation order in their track depending on the availability of the supervisors. The coordination team will finalize the programme after receiving the decisions of final papers before 18:00, Wednesday, W10-Q1B/W11-Q2B. Students can visit the conference programme to find their presentation slots at the “Programme and Proceedings” section of the conference website. The module coordinator will make the camera-ready versions downloadable by the public before 15:00, Thursday, W10-Q1B/W11-Q2B.

#### **3.2 Best paper nomination and award**

The best paper nominations will be selected based on the quality and peer-review results of the draft paper. Out of the nominations, the best award will be announced during the conference and will receive the certificate from the organization committee. Students who are willing to get this award have to make their papers ready at an earlier stage.

#### **3.3 Test presentation**

Track chairs will organize a rehearsal session during the track meeting in W10-Q1B/W11-Q2B for the students to test their presentations. This can be also done earlier during any of the track meetings. In order to avoid trouble during the conference, this session is mandatory for the students to attend.

#### **3.4 Uploading accepted papers to UT student theses system**

Students need to upload the accepted papers to the official website of [UT theses system](#) right after the conference. The assignment will be marked as finished after BOZ receives the thesis and the plagiarism check report.

#### 4. Final grading

The supervisors and track chairs are responsible for giving grades to the students. The final grade is determined by the scientific quality (50%), paper writing (20%), oral presentation (10%) and the overall process (20%), weighted accordingly. It can be any value between 1.0 and 10.0. An insufficient grade (5 or lower) means the student should repair or repeat this module. The grading rubric for each item is shown below.

Note that the grades will be forwarded to BOZ within 2 weeks after the module ends. BOZ will further check whether you have registered for MOL and uploaded your thesis to the UT system, then ask the examination office to register your grade in Osiris and prepare the diploma if this is your last module.

##### 1. Scientific Quality rubric (weight: 50%)

- bad (1.0-3.0): There are unacceptable errors or omissions in the reported work. The results will not generate interest from any direction
- insufficient (3.5-5.0): No clearly identifiable scientific method can be identified in the reported work. The results are potentially interesting for some stakeholder(s), but are insufficiently mature to be very useful
- sufficient (5.5-7.0): The reported work is at a sufficient level, corresponding to the (courses in the) bachelor programme. Results are sufficiently interesting to some stakeholder(s), although they require further processing
- good (7.5-8.5): The reported work goes beyond that which can be expected and contains some truly new or original results. These results are interesting and can be used straight away by some stakeholder(s). The work is publishable with some polishing or extra effort.
- excellent (9.0-10.0): The reported work contains very good results and already have demonstrable major impact for some stakeholder(s). It is directly publishable with very minor revisions.

##### 2. Paper writing rubric (weight: 20%)

- bad (1.0-3.0): The report shows extensive signs of plagiarism, or is barely readable because of bad structure, frequent textual mistakes and/or missing explanations.
- insufficient (3.5-5.0): The report shows signs of plagiarism, or is hard to read: its structure, use of language and completeness leave ample room for improvement.
- sufficient (5.5-7.0): The report is mostly readable, of sufficient quality, and contains all expected parts
- good (7.5-8.5): The report is well-written, a pleasure to read and has a natural flow
- excellent (9.0-10.0): The report reads like a polished research paper, written masterfully

##### 3. Oral Presentation rubric (weight: 10%)

- bad (1.0-3.0): The presentation was very hard to understand for all the audience; questions did not receive useful answers
- insufficient (3.5-5.0): The presentation was targeted either too high or too low, or left clear room for improvement in style and fluency; answers left room for improvement
- sufficient (5.5-7.0): The presentation was a reasonable representation of the work; questions were answered sufficiently well
- good (7.5-8.5): The presentation was a pleasure to attend and gave a good all-round overview of the work; questions received well-thought-out answers
- excellent (9.0-10.0): The presentation was pure entertainment, leaving everybody feeling that they learned a lot.

#### 4. Overall Process rubric (weight: 20%)

- bad (1.0-3.0): The student has either not sought badly needed guidance, or has not appropriately picked up urgent suggestions, or (on the contrary) has had to rely on constant guidance; does not attend any of the tutorial and does not submit any of the peer-review before the deadline
- insufficient (3.5-5.0): The student was not very responsive to guidance or (on the contrary) has needed significant guidance; miss some of the tutorials without valid reasons and/or does not submit all peer-review before the deadline
- sufficient (5.5-7.0): The student has mostly found a reasonable balance in seeking and using guidance; attend all tutorials and submit all peer-review before the deadline
- good (7.5-8.5): The student showed proper initiative, was mostly in control, and figured out most practical issues him/herself; attend all tutorials and submit all peer-review before the deadline
- excellent (9.0-10.0): The student ran the whole show with very little or no guidance, and was a pleasure to supervise; attend all tutorials and submit all peer-review before the deadline