



# Guide - IEM Bachelor Integration Project

*Last updated by Ba IP Coordinator, Dr. Gunn Larsen, 23 February 2022*

*Notice that the information in this booklet may be subject to change during the semester. Therefore, please pay attention to information and announcements on Nestor.*

This document describes the setup of the Ba IP and its deliverables. For questions please contact [orgbaip@rug.nl](mailto:orgbaip@rug.nl).

## Contents

1.	Setup Ba IP	2
2.	Learning Objectives Ba IP	4
3.	Proposed Rubric	5
4.	Grading according to assessment form Ba IP	10
5.	Meetings and Deliverables	11
5.1.	Start-up session/Start of project	11
5.2.	Lecture Information Literacy (L)	11
5.3.	RDP workshop/feedback	12
5.4.	Problem Analysis & Literature report (PAL)	12
5.5.	Research and Design Proposal (RDP) typically 2000 words	12
5.6.	Guidelines for reporting	13
5.7.	Intermediate Results and report outline (IR)	14
5.8.	Workshop Reporting and Academic Writing in English	14
5.9.	Preliminary Report (PR)	14
5.10.	Workshop Oral Presentation in English	15
5.11.	Workshop Poster Session	15
5.12.	Symposium & Finalization	15
5.13.	Final Report (FR)	16
6.	Conditions	17
7.	Communications	17
8.	Detailed Schedule/Planning Ba IP, semester 2, 2019/2020	18



## 1. Setup Ba IP

---

The Bachelor Integration Project (Ba IP) is a design project which finalizes the Bachelor of Industrial Engineering & Management (IEM). Founded in a real life industrial, a societal setting or in a research context, the subject of the project is related to one of the disciplines (PTL, PPT) of IEM. Students work independently on their project, coached by supervisors. This document and the Nestor website provide information on the set-up, deliverables, grading, and scheduling.

A detailed list of this setup is given in section 8. Below is the deliverables of Bachelor Integration Project listed. The students receive time and credits to complete their Research and Design Plan (RDP) deliverable. This is now a deliverable in the course Design Science which is given in the block before the execution of the project.

All bullets below denote a Go/No Go step (to next stage)

1. Preparation phase: Course unit Design Science
  - IEM Methods and Application Review
    - team work based on academic review paper
    - A 'Go' implies individual project selection (of Ba IP)
  - Research and Design Plan (RDP)
  - Language Proficiency (evaluated during Ba IP phase in next block)
2. Bachelor Integration Project
  - Intermediate results (IR)
  - Symposium and final report

### **Presence at meetings and workshops:**

The following sessions are compulsory: video replacing start meetings, the literature-, presentation- and academic writing workshops and all presentation sessions. In case of absence without good reason given in time and in person to the supervisor and coordinator, no other chance can be given for a presentation and the project is stopped.

### **Project format:**

*The bachelor thesis is a project. Between start and stop of the project activities have to be planned effectively and efficiently. **You are the project leader** of your assignment! This implies that you have **to take the lead** in the project, work independently, and **feel responsible** to adequately finish the project. Take a quick start and contact your supervisor ASAP.*

The length of an Integration Project is one semester, with a total study load of 15 ECTS (11 weeks of work). Ba IP projects start at the beginning of each semester, and have to be finalized within that semester, in total approximately 19 weeks. The aim of the first half (block) of the semester, about 1-3 weeks of work, is a full research and design plan, to work full-time on the design in the second block. Although projects may be clustered, all students work on their own project. Grading of the Ba IP is based on the final report, the presentation at the symposium and the poster and the learning objectives listed in section 2.



**Supervision:**

The Bachelor Integration project is assessed by a 1<sup>st</sup> supervisor and a 2<sup>nd</sup> supervisor.

The 1<sup>st</sup> supervisor acts as a coach during the Bachelor IP, both on the content of the design assignment as well as the design process which the student applies to solve the assignment. All communication on assessment is by the first supervisor.

The 2<sup>nd</sup> supervisor will provide assistance with respect to the general methodology of the project, the preparation of the RDP and the progress in particular in the first phase of the second block. Also he/she proposes grades to the supervisor.

If the 1<sup>st</sup> and 2<sup>nd</sup> supervisors value the RDP and intermediate results as inadequate, they may propose to the Ba IP coordinator to stop the Bachelor IP for this student, a go/no go decision.

Supervision is intended to provide feedback on questions and research progress. During the project, work progress is monitored by intermediate reports and reflection on the work and presentations. Meetings between students and supervisors are both individual and in a group. Although students work on their own project, projects are often connected to other project(s), because of comparable topics or related research fields of supervisors. **Two go-no go group meetings** are scheduled for you by the organization of Ba IP. Date and time of individual meetings and, if appropriate, additional group meetings should be scheduled by students and supervisors. Students should prepare the individual appointments with their supervisor. Always prepare questions, progress report, up-to-date logbook, design plan etc. Show your supervisor you take action on his suggestions.



## 2. Learning Objectives Ba IP

---

After completion of the Ba IP the student is able to:

1. Carry out an adequate **problem** analysis, in its environment, and formulate a clear research/design objective in this context.
2. Draft a comprehensive **research design**, based on the analysis mentioned above.
3. Explore, read and understand the relevant **scientific literature** of a specific research/design topic, and internal “company” reports, as well as patents..
4. Use **engineering, technological, and business skills** to plan, execute, and reflect on the project.
5. Apply **validation, evaluation, or application** of the artifact (physical or non-physical outcome of the design/research).
6. Apply an **academic** (critical, analytical) **engineering attitude**.
7. Apply adequate **communication**, during the project, of intermediate results and design steps to his/her supervisors and to propose, if needed, possible adjustment to the research/design plan.
8. Present his/her results clearly in English by means of a **written report** as well as a **presentation** and subsequent defense to an academic and professional audience with questioning and answering about all issues related to the project and its results.



### 3. Proposed Rubric

The rubric is included here in order to help get an idea of what is typically expected of you during the Ba IP. For the RDP phase, we will use the condensed one page RUBRIC in Design Science.

1: Problem Analysis	
<p>Learning Objectives:</p> <ul style="list-style-type: none"><li>1: Carry out an adequate <b>problem</b> analysis, in its environment, and formulate a clear research objective in this context.</li><li>3: Explore, read and understand the relevant <b>scientific literature</b> of a specific research/design topic, and internal “company” reports, as well as patents.</li></ul>	
<p>Assessment form item (See section 4)</p> <ul style="list-style-type: none"><li>A. Design quality</li></ul>	
<b>Excellent</b>	Problem analysis is commensurable with existing descriptive and numerical data, is falsifiable, and has been <b>thoroughly tested</b> . The symptoms of difficulty and the underlying causes have been <b>entirely determined</b> and made quantifiable where possible. Furthermore, the problem statement itself contains a <b>clear call</b> for action and describes the discrepancy between desired and actual conditions. In addition to this, the system under study is described accurately. Finally, when applicable the stakeholder analysis, scope, and goals are set and thoroughly discussed. In research oriented projects, the broader relevance and application of the research is <b>entirely determined</b> .
<b>Good</b>	Problem analysis is commensurable with existing descriptive and numerical data, is falsifiable, has been <b>tested</b> . The symptoms of difficulty and the underlying causes have been <b>determined</b> and made quantifiable where possible. Furthermore, the problem statement itself contains a <b>call</b> for action and describes the discrepancy between desired and actual conditions. In addition to this, the system under study is described accurately. Finally, the project stakeholder analysis, scope, and goals are set and discussed. In research oriented projects, the broader relevance and application of the research is <b>discussed</b> .
<b>Satisfactory</b>	Problem analysis is commensurable with existing descriptive and numerical data, is falsifiable, <b>but no testing</b> has been performed. The symptoms of difficulty and the underlying causes have been <b>determined</b> and made quantifiable where possible. Furthermore, the problem statement itself contains a <b>call</b> for action and describes the discrepancy between desired and actual conditions. In addition to this, the system under study is described accurately. Finally, when applicable the stakeholder analysis, scope, and goal are set and discussed.
<b>Below expectation</b>	Problem analysis is <b>not</b> commensurable enough, and an existing descriptive and numerical <b>data is not evident</b> . The problem is <b>not</b> falsifiable, and <b>no testing</b> has been performed. The symptoms of difficulty and the underlying causes have <b>not</b> been determined and <b>not</b> made quantifiable where possible. Furthermore, the problem statement itself <b>does not</b> contain a <b>call</b> for action and <b>does not</b> describe the discrepancy between desired and actual conditions. In addition to this, the system under study is <b>not</b> thoroughly described. Finally, the stakeholder analysis, scope, and goals <b>are not set</b> .



## 2: Research Design

### Learning Objectives:

- 2: Draft a comprehensive **research design**, based on the analysis mentioned above
- 3: Explore, read and understand the relevant **scientific literature** of a specific research/design topic, and internal “company” reports, as well as patents.

### Assessment form item (See section 4)

- A. Design quality

<b>Excellent</b>	A methodological framework is chosen and applied consequently. Furthermore, the system is modelled conceptually, and an information literacy is made such that the state of the art is <b>evidently clear</b> . Moreover, the main research and sub-research questions <b>are formulated correctly</b> , and operationalization into real <b>tasks is made</b> . Finally, the methodological approach is <b>coherent and consistent</b> .
<b>Good</b>	A methodological framework is chosen and applied consequently. Furthermore, the system is modelled conceptually, and an information literacy is given such that the state of the art is <b>clear</b> . Moreover, the main research and sub-research questions <b>are formulated correctly</b> , and operationalisation into <b>real tasks is made</b> . Finally, the methodological approach is acceptable in coherence and <b>mostly</b> consistent.
<b>Satisfactory</b>	A methodological framework is chosen and applied consequently. Furthermore, the system is modelled conceptually <b>but shows room for improvements</b> . An information literacy is given such that the state of the art is <b>clear, but not thoroughly discussed</b> . Moreover, the main research and sub-research questions <b>are mainly correct</b> . Operationalization is done but secondary tasks <b>are not well defined</b> . Finally, the methodological approach is acceptable and its coherence and <b>consistency have opportunities for improvement</b> .
<b>Below expectation</b>	No methodological framework is chosen or applied. Furthermore, the system <b>is not</b> modelled conceptually. An information literacy <b>is not</b> fully given such that the state of the art <b>is not</b> present. Moreover, the main research and sub-research questions are mainly <b>incorrect</b> . Operationalization <b>is not</b> properly done. Finally, the methodological approach <b>is not</b> acceptable because its coherence and consistency are incorrectly set.



### 3: Tools, methods and validation

Learning Objectives:

- 4: Use **engineering, technological, and business skills** to plan, execute, and reflect on the project.
- 5: Apply **validation, evaluation, or application** of the artifact (physical or non-physical outcome of the design/research).

Assessment form item (See section 4)

- A. Design quality

<b>Excellent</b>	<b>Important</b> and accurate tools and methods are used to support the design/research. Furthermore, data-gathering is taken well care of. Furthermore, <b>relevant methods are</b> incorporated to interpolate and extrapolate missing data points when necessary. In addition to this, the problem owner considers that the design/research and its validation achieve the requirements set in the project goals.
<b>Good</b>	<b>Relevant</b> tools and methods are used to support the design/research. Furthermore, data-gathering is taken well care of. <b>Methods are</b> incorporated to interpolate and extrapolate missing data points when necessary. In addition to this, the problem owner considers that the design/research and its validation achieve the requirements set in the project goals.
<b>Satisfactory</b>	<b>Limited</b> tools and methods are used to support the design. Furthermore, data-gathering is taken well care of. <b>A method</b> is incorporated to interpolate and extrapolate missing data points when necessary. In addition to this, the problem owner considers that the design/research and its validation achieve the requirements set in the project goals.
<b>Below expectation</b>	No adequate tools and methods are used to support the design. Furthermore, data-gathering is not taken well care of. <b>No methods</b> are incorporated to interpolate and extrapolate missing data points. In addition to this, the problem owner considers that the design/research and its validation <b>do not achieve</b> the requirements set in the project goals.



#### 4: Management, organization and planning

Learning Objectives:

- 7: Apply adequate **communication**, during the project, of intermediate results and design steps to his/her supervisors and to propose, if needed, possible adjustment to the research/design plan

Assessment form item (See section 4)

- B. Management of research

<b>Excellent</b>	The project was completed on the agreed time with the supervisor. Furthermore, the student has been <b>strongly</b> proactive in communication, planning and execution of tasks to achieve the goals of the project. Moreover, the coaching of the supervisors <b>is reduced to a minimum contact hours</b> due the excellent organization and independence shown by the student.
<b>Good</b>	The project was completed on the agreed time with the supervisor. Furthermore, the student is <b>not strongly</b> proactive but <b>sufficiently</b> independent during the coordination, planning and execution of tasks to achieve the goals of the project. Moreover, <b>weekly contact meetings</b> the supervisors were necessary due the management skills of the student.
<b>Satisfactory</b>	The project was completed on time <b>with a variation of 10%</b> . Furthermore, the student is <b>not proactive but sufficiently independent</b> during the coordination , planning and execution of tasks to achieve the goals of the project. Moreover, <b>almost daily contact meetings</b> with the (industrial and academic) supervisors were necessary due the <b>insufficient</b> management skills of the student.
<b>Below expectation</b>	The project was <b>not</b> completed on time. Furthermore, the student is <b>not</b> proactive and <b>not sufficiently</b> independent during the project. Moreover, <b>daily contact meetings</b> with the (industrial and academic) supervisors were necessary due to the <b>poor</b> management skills of the student.





## 5: Reporting and colloquium

### Learning Objectives:

- 6: Apply an **academic** (critical, analytical) **engineering attitude**
- 8: Present his/her results clearly in English by means of a **written report** as well as a **presentation** and subsequent symposium presentation to an academic and professional audience with questioning and answering about all issues related to the project and its results.

### Assessment form item (See section 4)

- C. Colloquium/final presentation
- D. The report

<b>Excellent</b>	The report and colloquium are well-structured <sup>1</sup> : abstract, introduction (main motivation, state of the art, main contribution, and structure of the document), preliminaries with materials and methods, results, discussion of results, concluding remarks, and further research, are provided. Furthermore, the writing is easy to follow, and the references are in a standard format. The use of tables, figures and appendices is meaningful, and they are correctly formatted. Finally, the report is concisely written, and readable.
<b>Good</b>	The report and colloquium are well-structured: abstract, introduction (main motivation, state of the art, main contribution, and structure of the document), preliminaries with materials and methods, results, discussion of results, concluding remarks, and further research, are provided. Furthermore, the writing is easy to follow, and the references are in a standard format. The use of tables, figures and appendices is meaningful, and they are correctly formatted. Finally, the report is concisely written, and well readable.
<b>Satisfactory</b>	The report and colloquium are well-structured: abstract, introduction (main motivation, state of the art, main contribution, and structure of the document), preliminaries with materials and methods, results, discussion of results, concluding remarks are provided. <b>Some of the aforementioned sections</b> are not completely finalized but an artifact of the project is well documented. Furthermore, the writing is easy to follow, and the references are in a standard format. The use of tables, figures and appendices is meaningful, and are correctly formatted. Finally, the report is concisely written, and readable.
<b>Below expectation</b>	The report and colloquium are <b>not</b> well-structured. Important sections such as abstract, introduction, preliminaries with materials and methods, results, discussion of results, concluding remarks, and further research <b>are not provided</b> . Furthermore, the writing is <b>difficult</b> to follow, and the <b>references are not in any standard format</b> . The use of tables, figures and appendices <b>is not meaningful</b> , and they <b>are not correctly formatted</b> . Finally, the report is <b>not</b> concisely written, and difficult to read.

<sup>1</sup> A meaningful story is told.



#### 4. Grading according to assessment form Ba IP

---

The final grade of the Ba IP is the weighted average of all partial grades listed below. *The student can only pass if all 4 aspects are graded sufficient (6 or higher).* The full assessment form can be found on Nestor.

- A. Design quality (70%)
  - a. Problem analysis and relevance
  - b. Literature research results
  - c. Techniques and methods
  - d. Outcome of design process
  - e. Reflection
- B. Management of research (10%)
  - a. Independence
  - b. Initiative
  - c. Motivation
  - d. Planning
  - e. Collaboration
  - f. On time delivery of documents
- C. Colloquium/final presentation (10%)
  - a. Structure
  - b. Clarity
  - c. Presentation skills
  - d. Response to questions
- D. Final report (10%)
  - a. Structure and layout
  - b. Writing skills
  - c. Independence of writing
  - d. Linguistic skills



## 5. Meetings and Deliverables

---

The following section gives a brief outline of the subject of the meetings. Details of appointments and requirements can be found in the planning given in section 8. Most meetings are mandatory.

### **Assignments on Nestor:**

All deliverables have to be uploaded on time through Nestor. Under “Deliverables” we have prepared assignments where your work can be uploaded. Furthermore, the deliverables should also be handed in to your supervisor (ask your supervisor how he/she would like to receive your work) as hard copy or/and by email.

### **Projects with classified deliverables:**

Some Integration Projects contain classified information. In these projects students must upload and hand in documents for their deliverables, which are stripped of confidential items, although the content must stay complete and consistent. Contact your supervisor always when this is the case and take care to upload the documents in time.

### 5.1. Start-up session/Start of project

---

In the plenary meeting/lecture (this year replaced by a video lecture), students are informed on the set-up and requirements of the Bachelor Integration Project. Also projects are presented (this year available on Nestor) and students can indicate their preference for a project online via google forms. Shortly thereafter, students are informed on the project assignment. *Directly students make an appointment with their 1<sup>st</sup> supervisor.* In the start meeting, it is important that the supervisor and student already make appointments for the next individual meetings. Prepare yourself well with many questions, also the first scan of literature, see section 5.2, will be useful. Other sources for preparation can be to look up related papers published by your supervisor.

### 5.2. Lecture and 4h workshop Information Literacy (L)

---

For your project you will need to gather information from a number of sources. These will include scientific articles, books, but also other sources like industry reports, annual reports, websites, etc. To be effective in your search you need to find out what are the important key words to use and approach the information search in a systematic way.

In order to ensure everyone are on level there will be a 4h workshop with the following content:

- Starts with 1h lecture (compulsory)
- Test on Nestor after lecture (a score  $\geq 7/10$  is required) see deadline on Nestor
- Work on L deliverable
- Library staff will be present some time for questions
- Upload your L deliverable on Nestor in line with the deadline on Nestor

The L deliverable is meant to teach you how to do referencing, and staff from the library are available for giving feedback on the assignment (not your supervisors). This is to ensure you can do it correctly in your final report and find literature efficiently to get your research forward.



### 5.3. RDP peer-review/workshop/feedback

Often students have questions how to structure their project and how to make a good RDP. A workshop will be organized to prepare this deliverable. As preparation you will peer review the video presentation of your peers. The 2<sup>nd</sup> supervisor will provide assistance in the general approach of the project. The setup will be similar to the setup with Part 1 in Design Science (DS), where peer review has a central role.

- Prepare a 5 minute video presentation and upload for peer review
  - Intro to your problem, problem statement, stakeholder analysis, system description, SMART goal, and envisioned final deliverable.
- Peer review according to the same RUBRIC as in the group work Part 1 in DS
- Workshop meeting
  - Show 5 minutes video
  - Discuss peer review (More info about the setup will follow on Nestor)

### 5.4. Problem Analysis & Literature report (PAL)

Arrange a meeting with your 1<sup>st</sup> supervisor to discuss your PAL as soon as possible after the deadline for the PAL (see appendix). At this point, the student has become familiar with the subject of design using the available literature overview, see above. The required report to prepare for this meeting provides a Problem Analysis – the problem put into context: the (management-) question, problem- and stakeholder analysis, system description, problem definition and goal statement. Will you aim for design science, research or a design? For details of the Problem Analysis, see course RDM.

Table 1 Content RDP

Item	Description
1	Working title
2	Introduction: How to engage the reader. Start with relevance. (Also when your project is research oriented. What is the future application/need?) Define the research and/or design topic: brief description of the question or problem (why is it difficult/important, what has been done before?)
3	Problem analysis (choose appropriate tools from RDM such as) <ul style="list-style-type: none"><li>• problem owner</li><li>• stakeholder analysis? (goals and constraints)</li><li>• product/system description?</li><li>• literature review</li></ul>
4	Design (research) goal
5	Research problem and (sub)questions
6	Cycle choice / Design steps
7	Resources needed: <ul style="list-style-type: none"><li>• data acquisition</li><li>• type of modelling</li><li>• a first exploration of relevant literature resources</li></ul>
8	Rigorous literature is expected all over the RDP in order to justify all the sections: introduction (motivation, state of the art, and contribution), system description, scope, goal, question and sub questions, methods and tools, deliverable and validation process.



9	Description of scientific validation process of your artifact/results
10	Quick risk analysis / feasibility
11	Planning second block (40h/week)

### 5.5. Research and/or Design Proposal (RDP) typically 2000 words

At the end of the first half of the semester, the design proposal is completed and presented in a group meeting to both supervisors and fellow students. The aim of the design proposal is to convince supervisors (and stakeholders) that the research and design phase of the Ba IP will provide an adequate and sound solution which will be able to meet the stakeholder's requirements. *The report is uploaded to Nestor. Table 1 provides key elements of the design proposal.* The deadline for uploading this document to Nestor can be found in the schedule/planning of the course. Note that the RDP should convince 1<sup>st</sup> and 2<sup>nd</sup> supervisors: although it is not necessary to have completed the final answers to the topics at this moment, the student should demonstrate that he/she understands the problem and the design objective at hand and proposes a realistic plan and, as a consequence, can be expected to be capable to pass the Ba IP.

In the **RDP-meeting**, each student presents (10 min) the problem analysis and literature scan, the research and design plan, and the planning of the project by means of a presentation. The group may provide ideas and comments on the design plan.

After the meeting, the supervisors discuss the students' progress. They also formally decide whether the student's progress is satisfactory, summarized by a '**Go**' or '**No Go**' decision. This is done according to the familiar RUBRIC form DS. A 'Go' decision, possibly with some additional requirements for repair, will give entrance to the next stage. If the design proposal is not satisfactory, the supervision can decide to give a 'No Go', which implies that the student has to stop the Ba IP project, and contact the study advisor for possibilities to perform the Ba IP in the next term, with a new project. Notice, that a 'Go' decision implies that the supervision gives an indication, but not a guarantee that you will successfully finalize your Integration Project.

### 5.6. Guidelines for reporting

After the start of the second block, the student discusses an outline of the final report with their supervisor. The document could be written in Word, Google Docs, or LaTeX. Unless otherwise agreed with the supervisor, please follow the guidelines:

1. The length of the final report can be discussed with the supervisors, but a brief, clear and to-the-point reporting is expected. Typically less than 10000 words excluding appendices.
2. Layout of the report should be professional and tidy. You may agree on this with your advisor. Here is one suggestion of what you could choose:
  - Font type: Georgia.
  - Font size: 12 points.
  - Spacing between and after paragraphs: 1 line.
  - Spacing between lines: 1.25 lines.
  - Margins: "Normal" (Word template) meaning: Top, Bottom, Left, and Right at 0.98"



- Aligning of the text: free to choose. The justified or alignment to the left depends on the writer's style.
- 3. First page: Always a cover where the title is clear. It should also include the group number, and the student's information (name, last name, student number), the supervisors names and a RuG logo.
- 4. Second page: a summary/abstract of your report.
- 5. Third page: an index, with hyperlinked text to the sections and subsections of the document.
- 6. Fourth page: A list of abbreviations (optional).
- 7. Tables of figures and tables are optional.
- 8. Titles and subtitles of sections and subsections should be formatted with a different font size (14 and 13).
- 9. The figures to be used should not be pixelated but vectorized(.png, or.eps, to mention two examples). The figures should be sequentially numbered and properly linked to the document. **The contents of the figure should be exhaustively explained in its caption.**
- 10. Tables should have a 11 points font size. The table title should appear at the top of the table. All tables should be mentioned in the document.
- 11. Graphs should be clear, meaning that the font size should also be 11 points, the axis should always contain three elements: full name of the variable, symbol of the variable, and physical units in between squared brackets. For instance: Time,  $t$ , [s], or Temperature,  $T$ , [°C].
- 12. The Bibliography should be connected to Harvard Referencing Style (or preference of your supervisor) and properly hyperlinked in the document.
- 13. Please be careful with the overuse of the demonstrative pronouns: this, these, or those. By using such pronouns, you are forcing the reader to remember concepts, or ideas, and the reading of your documents become very difficult.
- 14. When writing paragraphs, please make use of linking words to smoothed the reading. The paragraphs (and sections) should be coherent and cohesive.
- 15. Last but not least, please be careful with the formalities in case you need to use mathematical expressions: the equations should be sequentially numbered, where the number is inside round brackets. Furthermore, define the equation before its number called in the document. Finally, all variables, constants, or parameters with their physical units should be defined before or after they are needed in the formula.

### 5.7. Intermediate Results and report outline (IR)

---

It is important to discuss with your supervisor which parts of the final report are to be handed in for the intermediate version of your report. In general, not all chapters of the final report will be handed in the intermediate version, but usually only some key chapters containing experimental results and discussion pages are near to completion and other chapters are outlined.

In a group meeting, the work is presented and discussed. In a short presentation (10 min, with slides), students give an overview of intermediate results in their analysis and/or design. There is also room for discussing possible solutions for problems you are encountering, new ideas and questions raised concerning the results. After consulting the 2<sup>nd</sup> supervisor, the 1<sup>st</sup> supervisor may decide to stop the project if the intermediate results are not satisfactory. This is the second **'Go' or 'No Go' decision.**



### **5.8. Workshop Reporting and Academic Writing in English**

---

The workshop 'Academic writing', scheduled in the second block, practices writing skills on the management summary/ abstract of your final reports. Students learn how to write a concise and to-the-point report, based on a draft of their final report's summary. Feedback will be given on English academic writing in the RDP.

The two language workshops are compulsory for all students and provided by an expert teacher from the language center.

**NB!! For students enrolled in Design Science:** Notice that both workshops listed in sections 5.8 and 5.10 need a pass in order to pass Part 3 of Design Science!

### **5.9. Preliminary Report (PR)**

---

In the weeks before the deadline of the final report, a draft (or parts) of the final report can be handed in and discussed with the supervisor. In a separate meeting the draft version is discussed. Make an appointment with your supervisor.

### **5.10. Workshop Oral Presentation in English**

---

The second workshop ('Oral Presentation') is used to help the student in preparing their final presentation. The project will not be completed yet, but the student can use this presentation to practice and get the recommendations for improvement to give good show on the symposium. In other words, you will present your preliminary results in your project.

The two language workshops are compulsory for all students and provided by an expert teacher from the language center.

**NB!! For students enrolled in Design Science:** Notice that both workshops listed in sections 5.8 and 5.10 need a pass (be present) in order to pass Part 3 of Design Science!

### **5.11. Workshop Poster Session**

---

In parallel to the workshop on 'Oral Presentation' there will also be a poster workshop. Based on symposium posters from previous Ba IP sessions you can develop your own ideas on how you want to present your project.

We are planning to present the final posters in a session to finalize your project. If possible physically with drinks. And there will be prizes (1x 50 euro, 2x 30euro gift cards) for the three best posters.

### **5.12. Symposium & Finalization**

---



The finalization of the Bachelor IP consists of a report, an oral presentation on the symposium, and a poster. A digital and/or a hard copy of the final report is handed over to the supervisors in time. PDF or Word versions of the final report (the corrected version), the poster, and the final oral presentation are uploaded to Nestor.

The final presentations of all Ba IP projects that are uploaded on Nestor will be assembled in a symposium. Each student gives a presentation of 15 minutes, followed by 5 min for discussion, for a wider public, i.e. professors and students, external participants and supervisors of the project, family, and friends. Also, the symposium contains a poster session in which supervisors and a poster jury will examine the posters.

Grading will take place within 10 working days after the symposium.

Grades can be interpreted as follows. An unsatisfactory grade of 5 or lower implies that the Ba IP project is not passed and a new Integration Project has to be done in the next period. In some cases, a repair program may be proposed by the supervisor, aiming to pass the Ba IP (to attain a '6'). A grade of 6 or 7 indicates you successfully finished your Integration Project. For a grade of 8 or higher, new insights and personally developed ideas should be part of the presented results. In case there is a need for repair, it should be kept in mind that all work on the Bachelor IP should be finished before the end of the semester.

### 5.13. Final Report (FR)

---

Please note that all details in the front cover are completed. Apart from the former guidelines listed in section 5.6, you are free to personalize the report.

**For publicly available reports, please add the following disclaimer:**

*This report has been produced in the framework of an educational program at the University of Groningen, Netherlands, Faculty of Science and Engineering, Industrial Engineering and Management (IEM) Curriculum. No rights may be claimed based on this report. Citations are only allowed with explicit reference to the status of the report as a product of a student project.*

**Upload of final report:**

The final report needs to be uploaded to Nestor. In order to get a grade in progress it also needs to be uploaded to [https://forms.ub.rug.nl/theses\\_fse/](https://forms.ub.rug.nl/theses_fse/) Notice that the upload to the thesis repository of FSE is done **AFTER** your supervisor agrees on the final version. *Further, if any of the mentioned deliverables in section 8 are absent on Nestor, grading cannot take place.*





## 6. Conditions

---

All conditions for the Ba IP are related to the expectation that students are committed to their project. That means that students attend their meetings, are on time at meetings, and meet deadlines for deliverables. Further, the time spent on the project should be at least 15 ECTS x 28 h/ECTS= 420 hours. The second part of the semester is scheduled as a full-time workload, implying that other activities should be minimized, including a restriction of (re)exams in the design phase. *Following courses is not an option in this phase.*

Feedback on progress is given in individual meetings and on the basis of the reflection part of the intermediate reports. When during the Ba IP project, the supervisor judges the student's input as insufficient, the student will be excluded from further participation in this semester's Integration Project. Both group meetings during the semester function as a stage in which a Go/No Go decision is taken. Note that in a specific case, after a 'Go' decision the supervisor can decide to end the Ba IP project, in case the student does not show enough commitment. After termination, the student should contact the study advisor to make an appointment for a new Ba IP project on a new topic.

## 7. Communications

---

**Nestor** is the central communication tool during the Integration Project.

Emails to the organization should be sent to [orgbaip@rug.nl](mailto:orgbaip@rug.nl)

Good luck with your Integration Project!



## 8. PReliminary Detailed Schedule/Planning Ba IP, semester 2, 2021/2022

Notice that the schedule can be subject to changes. Please keep an eye on Nestor.

PLANNING First Phase: Block 3 (part 2 of Design Science)					
DS Course week	Week num	When	To do	Deliverable	Deadline
4	9	Tuesday March 1st	<b>LECTURE:</b> Watch startup lecture on Nestor.		
4	9			Application to projects (form and instructions on Nestor).	Tuesday March 1st, 15:00
4	9	We/Th March 2nd/3rd	Aim at finishing project division. Students who passed DS without a resit, and handed in the survey is first in the selection round. It is expected that you arrange a short meeting with your 1st supervisor to discuss your idea of the embedding of the project, and your idea about the goal and deliverable. It is also possible to ask for a short meeting with the 2nd supervisor to discuss the same topics.		
5	10	Monday March 7th	<b>WORKSHOP:</b> Information Literacy. Compulsory.		
5	10			Test on Nestor + Outcome of the workshop the Preliminary Literature results (L) must be uploaded to Nestor	Tuesday March 8th, 17:00
5	10			<b>PAL</b> Upload to Nestor and email to 1st supervisor	Friday March 11th, 17:00
6	11		Upload your draft RDP to your peer review group file exchange on Nestor	<b>Draft RDP</b>	Friday March 18th, 17:00
				Upload <b>peer review</b> according to the DS rubric of the draft RDP to your group file exchange (see instructions on Nestor)	Before RDP workshop



7	12	TBA via Nestor	<b>WORKSHOP:</b> RDP workshop with group and 2nd supervisor.	Prepare 10 min presentation for the workshop: 1) Intro to your problem, 2) problem statement, 3) stakeholder analysis, 4) system description, 5) SMART goal, and 6) envisioned final deliverable	
7	12			<b>RDP</b> Upload to Nestor and provide email/hard copy to all supervisors	Friday March 25th, 12:00
8/9	13/14	TBA via Nestor	<b>MEETING:</b> RDP meeting with 1st and 2nd supervisor. First <b>GO/No GO</b> moment!	Presentation (10min), assessment according to DS RUBRIC, same content as workshop presentation	
10	15		Possibility to repair RDP		In agreement with supervisor
<b>PLANNING Second Phase: Block 4</b>					
<b>BA IP Course week</b>	<b>Week</b>	<b>When</b>	<b>Activity</b>	<b>Deliverable</b>	<b>Deadline</b>
1	16	Tuesday April 19th	<b>LECTURE:</b> Start-up of the design phase.		
1	16	Tuesday April 19th	<b>LECTURE:</b> Academic writing. Given by expert Ruben Granson, from the language center.		
1	16	TBA enrollment Nestor	<b>SESSIONS:</b> Tailored feedback by Ruben Granson on writing based on your RDP. Compulsory to pass Design Science.	Expert from the Language center will download your RDP from Nestor	
4	19			Intermediate Report ( <b>IR</b> ) Upload to Nestor and agree with all supervisors to deliver as email and or	Tuesday May 10th, 17:00



				hard copy.	
4	19	TBA via Nestor	<b>MEETING:</b> Intermediate meeting. Second <b>GO/No GO</b> moment! Compulsory.	Presentation 10 min, focus on intermediate results.	
6	22	Enroll on Nestor	<b>WORKSHOP:</b> Poster session. Poster award (gift cards 50 and 25 euro) to 1st, 2nd and 3rd best posters. Also beneficial workshop for your storyline in the report and presentation.		
6	22			Preliminary report ( <b>PR</b> ) Upload to Nestor and agree with 1st. supervisor to deliver as email and or hard copy.	Tuesday May 31st, 17:00
7	23			Image + summary for your page in symposium booklet. (Nestor)	Friday June 10th, 17:00
8	24			<b>Final report</b> Upload to Nestor and agree with supervisors to deliver as email and or hard copy. In order to receive a grade: After your supervisor has approved the final version, the report needs to be uploaded to the repository as well. See Nestor for instructions.	Friday June 17th, 17:00
9	25	Monday June 20th	<b>LECTURE:</b> presentation skills. Given by expert, Ruben Granson, from the language center. Compulsory.		
9	25		<b>SESSIONS:</b> Presentation skills. Individual feedback. Given by expert, Ruben Granson. Compulsory to pass Design Science.	Prepare a 10 min presentation about your project to present in session. (Serves as starting point for your presentation at the final symposium)	



10	26	TBA (Tuesday 28 and Wednesday 29 June)	Symposium. This can be viewed as the final exam in the course. With compulsory items	1) Presentation 15 min (upload slides on Nestor)  2) Poster	Deadline for handing in the poster is Monday June 27th, 17:00
----	----	--	--	--	---