Minor
Data Driven Business Lab

Minor Regulation 2021-2022   30 EC

Are you triggered by what data can do for the world we live in, or willing to learn?

Unlock doors and peek into the complex and exiting world of companies riding the perfect wave! In the minor "Data Driven Business Lab" we have laid out a landscape in which you can define individual goals, competencies, and personal skills, working in a team of international diversity. Focus on your own qualities and strive for excellence and adventure!

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Approved by: Curriculum owner

Content of the minor

Join this minor if you want to see, in real life what the impact of data can be for a company or government. Learn how it can support, change, or even disrupt business models.

Imagine any company, not so many years ago. This company generated its own data and reports, based on its trusted single source and examining the past. Yet the world this company lived in geared up, moved on, and moved up. Now everything is generating data, from phone calls to smart devices, from blogs to video feeds. The world now is a complex challenge, where data is available, abundant, and everywhere, and internal company data is but part of the new truth. Can these datasets be unlocked, combined, and used for potential business benefit? Can they trigger many small decisions fast instead of large decisions at snail pace…

A changing of mindset and context: that is what we are going to discover together.

So how does this minor thing work?

In our "Data Driven Business Lab" you will be working with professionals in the field of (big) data on real world assignments form our innovation partners. An ample set of assignments and more; work in a group yet create your own personal profile that will guide you to the finish. Are you ready for it? Bend your brain on excellent topics and focus on the tools that you want to explore, be it applied research or more practical application of ethics, (big/open) data, programming language oriented towards data science (R, Python), data analysis tools (Tableau, Power BI), hyperautomation (NLP, no-code/low-code, process mining) and many others, which can vary depending on project demands. Match business needs, with any mix of topics and any team.

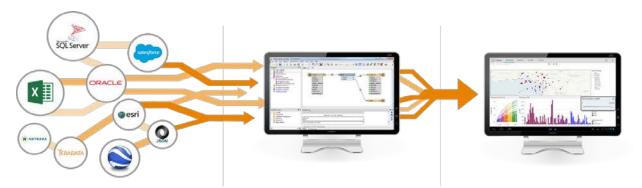**Will you join? Smile and swim the data lakes with us!**

Figure 1 - From source to visualization

What we offer

- A real and authentic assignment in this field of work at renowned companies – you choose which project to take.

- You can apply for a project or maybe even inject your own suitable project; the requirements can be discussed (think of complexity and required knowledge).

- No "lesson program" (!) We will help you set up your personal learning activities.

- Guidance to help you decide which skills and practical knowledge is needed to finish your project and meet your learning goals.

- No limitation to what you could learn.

- Guidance and coaching throughout your project to keep you on track

  o from the partner in innovation

  o from a dedicated process coach

  o from content coaches on specific subjects

What we expect

- A self-aware student, who takes control of his/her study and wants to explore the field of Data Driven Business, Business Intelligence, Big Data and Data Visualization.

- You can set your own goals and plan your own progress; coaches help you to get to the desired level for this minor. You are in the lead which workshops lead to the result and completion of these goals.

- You have a basic understanding of business processes, the role and application of IT in companies and within business processes.

- You have an open mind to explore new possibilities, software and dare to fail, learn from that experience and grow in your professional performance.

- You want to work on your professional skills, like communication, presenting, working in groups, open mindedness, project management, (peer)feedback, etc.

The mandatory learning goals

- The student will be able to explain how data is flowing through an organization and which applications support the business processes and can show this within a project.

- The student will be able to explain how KPI's and/or data visualization effect the business processes and can show KPI's and/or data visualizations within a project.

- The student can talk about internal, external and open data, which has an impact on a company and can use this data within a project.

- The student can explain at least one of the following concepts:

    o Big Data

    o BI

    o Blockchain

    o AI and/or Machine Learning

    o Hyperautomation

  and is able to apply those principles within a project.

- The student can analyze a dataset by applying basic descriptive statistics techniques.

- The student shows ownership, is coachable and shows resilience.

You will need to provide sufficient proof of reaching the complete set of learning goals at the end of the minor. The projects provided by companies will be the main carrier for gathering this evidence. You will probably need additional knowledge to put in practice and get the needed proof. This can be done by attending educational units, follow online course, share information with fellow students (set up workshops), read books, etc. The possibilities are endless. See "Passing the Minor" for more details.

Education components (see article 16 general section of the TER)

The educational activities of this minor fully depend on the wants and needs of the student.

This minor consists out of three parts, which run in parallel and complement each other.

1. Coaching at Fontys

Coaches will help guide you to define and fulfill choices. They will support you in setting up your personal learning goals, which are optional besides the mandatory learning goals. A tool for peer-to-peer feedback will be used to continuously measure your learning journey and makes your progress regarding all learning goals visible.

2. Educational activities at Fontys

All educational activities are organized (or set-up) by students and provided by coaches and partners from Fontys, by companies supporting our education (Partners in Innovation) or by students themselves. These educational activities all pertain to subjects which deal with Data Driven Business. At the end of the minor, a student should at least have achieved the minor learning goals. There is no limitation to the educational units, which can be followed.

These educational activities could take form in e.g.:

- E-Learning (e.g. MooC)

- Master classes (skill training)

- Workshops

- Coaching

3. Project at a company

You will work in multidisciplinary and international teams and apply the knowledge you have learned in the educational activities (or from your domain knowledge). The variety of the team members should bring different views on a solution and would make an end product of higher quality. We are in contact with numerous companies who are willing to provide the students with projects and a working environment.

Enrolment in the education components

In this minor signing up for educational activities is planned from the moment of educational need. Which means there should always be a student driven demand to learn a specific subject and/or get answer to a question.

You will need to act / ask for the required educational activities – this process will be guided by the process and content coaches and together with partner organizations. If there are specific (project) needs students should announce that as soon as possible, for the third party to provide the right educational unit. Together with the lecturers, the content of the educational unit is set-up and planned in the weeks. In other words, the format of the program is determined by demand.

Time-Line of the Minor

This is a minor in full time education, meaning expected workweek of 40 hours. In a normal situation, on-site hours are between 9h and 16h daily. There is no expectation of "homework", but it could be the case that extra schooling on specific subjects is needed to partake sufficient in specific projects. Hence it will be a project need, rather than an educational need.

The overview below gives a general indication. Thake note that there could be projects which will not follow this timeline, which are exceptions.

Week 1:   Kick-off week

Week 5:   Finishing Project Plan (create Infographic)

Week 6:   Project Plan Presentation (Event)

Week 11/13:   Mid Term Review

Week 17:   Wrapping up Projects

Week 18/19:   Project Review & End Presentations (Event)

Note! *Due to COVID-19, the minor will follow all general rules and regulations that are communicated by Fontys in general (and more specifically Fontys ICT). Please take in consideration that we adjust our program accordingly.*

Passing the Minor (see article 19 (3) general section of the TER)

To complete the minor and receive 30 EC the student:

1. Has to have a **personal profile** (peer reviewed) and accommodated proof of work in which the student supports the learning journey of the learning goals: which are at minimal required goals as stated above and optional are the personal learning goals. The student should deliver evidence that the learning goals are met in both process as content. This will be rated for completeness, content and professionalism by the process and content coaches, and where applicable the partner organizations.

2. Has personally **pitched the learning journey** to the process and content coaches. The main carrier for the learning goals will be the projects, but also other learning activities can be included. This will be rated by process and content coaches on integrity, complexity of content and answering of questions about the process and theory.

3. Achieved **positive participation and progress**; this is a combination of peer-feedback of the group, observations from the process coach and feedback from content coaches and the partner organizations. This will be rated by process and content coaches on through insight of theory, practical application of theory, commitment, attitude, depth of work, originality and the value of work (see rubrics)– the evidence for these factors needs to be delivered by the student.

As mentioned in the "Time-Line" there will be two intermediate presentation moments on the project, the project presentation (week 6) and the midterm-review (week 11-13). These moments can help steer the project in the right direction. The projects are not graded at those times, but give you, the process and content coaches, and partner organizations a clear view on the project group progress and are focused on content, process, and self-regulation. During the weeks, the project is running, students are free to ask feedback from peers, process and content coaches, and the company (as agreed in the project). This is all input for the individual assessment in week 18 and the student should deliver evidence (read: peer reviewed profile and proof of work).

Due to the fact that the projects are running the entire period, steering and feedback is given throughout the process, and the product is a multi-person goal, repairs can only take place in a next semester by re-doing a project.

To clarify what needs to be done for a **good** review, as attributes to the learning goals, and pass the minor:

Personal (peer reviewed) profile & proof of work	
Completeness	Learning activities of the student can easily be traced back to content and content is unique and complete.
Quality of content	Actions entered by the student and feedback given by the student have been described clearly, thoroughly, and correctly.
Professionalism	The student has often gathered feedback from process and content coaches to validate the work.
Pitched the learning Journey	
Critical self-reflection	Work done is clearly traceable to the student and handled with integrity, meaning the student has a critical self-reflection.

Complexity of content	In retrospective, the content has high substantive value and show the complexity of the work done.
Answering of questions about the process and theory	The student can answer the questions with ease, as a professional who would talk about work done.
Positive project participation and progress	
Insight of theory	The insight of theory has been valued high by the content coach.
Practical application of theory	The practical application of theory has been valued high by the content coach and partner organizations.
Commitment	The commitment to the project(s) and work has been valued high by the process coach, content coach and partner organizations.
Attitude	The attitude shown by the student has been valued as professional by the process coach, content coach and partner organizations.
Depth of work	The depth of work has been valued high by the content coach and partner organizations.
Originality	The originality of the solution has been valued high by the content coach and partner organizations.
Value of work	The work done with the project has been valued high by the partner organizations.

Based on the rubrics given above the student will pass or not pass the minor. In case of external need, the following differentiation will be made, which needs to be explicitly requested by the participating student.

- *Insufficient* (one or more rubric(s) cannot be validated)
- *Sufficient* (minimum all rubrics positive and validated)
- *Good* (all rubrics proven as stated and validated)
- *Very Good* (exceeding all rubrics as stated)

Diploma Supplement

A student who successfully completed the minor Data Driven Business Lab is adaptive, resilient and innovative in the field of business and (big) data analysis, understands the flow and value of internal and external data and knows how to process data into visualizations and can determine strategies to strengthen companies doing data-driven business.

Examination Board (see article 38 general section of the TER).

Fontys University of applied sciences, department ICT & Business acts as secretary of this minor. Therefore, the examination board of ICT & Business determines whether the student has achieved the minor and ensures that the student receives a certificate.

Contact details: fhict-examenkamerb@fontys.nl

Chairman of the Examination board is Natasja Martens and Secretary is Jolanda Liégeois.
In case of complaints regarding the examination within the minor (which cannot be solved within the minor and its participants), the student can turn to the Examination Board for further investigation. On the other hand, when there is evidence of suspicion of an irregularity committed with respect to (a component of) an examination or fraud, the Examination Board will be addressed by the lecturer.

Validity

This information is valid for the academic year September 2021 to September 2022.

Required prior qualifications

Before you can start this minor, you must have passed your foundation degrees (propaedeutic) and you must have finished an internship. This is needed for the practical knowledge of how business is run, which can provide essential insights in business processes during the minor.

To successfully take part in this minor it is necessary to have at least a basic knowledge of applied IT, and the most common tools (Word, Excel, PowerPoint). Knowledge about databases, tables and questioning those databases with SQL is a plus. If you do not have this knowledge, you can set up an educational activity created for this. This will bring you to the minimal required level of knowledge.
This study is using "Bring Your Own Device" as standard; a laptop is a minimal requirement.

Not accessible to

No exclusions known.

For students there are no other demands for participation and completion of the minor than given here in this minor regulation document.

Changelog minor regulation

Changes in respect to the Minor Regulation 2020-2021

- Changed external companies to partner organizations
- Changes experts to content coaches
- Removed diamond of ownership as part of the minor regulation
- Added new examples of data techniques in the content of the minor and learning goals
- Changed the text for applying own projects to the minor in order to avoid confusion.
- Differentiation grades on request.
- Few typing errors solved

Changes in respect to the Minor Regulation 2019-2020

- *Changed Corona Crisis regulation of Fontys*
- *Few typing errors solved*

Changes in respect to the Minor Regulation 2018-2019

- *Changed learning goal from "resilience and responsibility" to "ownership and being coachable"*
- *Changed text regarding "lessons program" based on feedback from students*
- *Added coaching model and coaching dimensions, as developed last semester*
- *Changed setup of "tools" based on feedback from students*
- *Reshuffled some text to improve readability*

Changes in respect to the Minor Regulation 2017-2018:

- *Removed graded rubrics, replaced with attributes a student should show to pass the Minor.*
  - *Students found rubrics not always clear, we no longer grade in the Minor (accomplished or not accomplished)*
  - *Evaluation process has become more holistic due to use of Peer-to-peer feedback*

- *Added Timeline & Expected working hours*
  - *Students gave notice that timeline was not always clear (what is expected and when)*
  - *Working hours vs. contact hours, students are expected to be more present in the Lab*
- *Removed Examples of Workshops o Students expected the workshops to be planned by lecturers*
  - *Now clarified that students should initiate workshops and should declare the content*
  - *Content is always student or project dependent*
- *Made minor changes in text for better readability*