



CAPSTONE PROJECT REGULATIONS
FOR THE
MS IN BUSINESS ANALYTICS
MS IN FINANCE
MS IN TECHNOLOGY MANAGEMENT & INNOVATION
2019-2020

Last updated: November 27, 2019

1. MISSION AND OBJECTIVES

The capstone project is an individual consulting field assignment, which business Master of Science (MS) students undertake as professional consultants to a client organization.

- **Students undertake the project towards the end of their studies.** They must use the spectrum of knowledge and skills they have acquired. They should interact with different client stakeholders including decision makers, analysts, functional experts and vendors.
- **The client may be a company or any other host** (e.g. research institute, government, charity).
- **Students may work as an external consultant, intern or employee.** They may work onsite or remotely. The work must be individual; joint work requires approval of the program head.
- **The project must answer a real client need with clear and valuable outcomes.** It must be feasible within the project timeline.
- **The project is confidential.** Rights to the work and deliverables produced vest in the client.

Matchmaking begins in January. See Section 4 for the project timeline and process. The timeline is somewhat flexible, but most projects run March to early June. See Appendix 1 for typical project examples, and each [program website](#) for the full curriculum.

2. STUDENT SKILLS AND POSSIBLE PROJECTS

Students are professionally and internationally diverse, and have a broad range of preexisting skills. The 2019-2020 cohort comprises 85 students from 24 countries, with 45% from Hungary. They range from early-career professionals to mid-career and senior executives, with an average age of 28 and work experience of five years.

- **MS in Business Analytics:** Students must participate in a complete analytics workflow. The program has covered a unique mix of data analytics, computer science and business including coding, statistics with ML, big data and cloud computing, and data engineering. Many students have taken specialist courses on text mining, deep learning or agile project management.
- **MS in Finance:** Students must undertake a finance-related project. The program has covered a broad range of topics in corporate finance, investments, banking, PE/VC, entrepreneurial finance, innovation and fintech. Many students have taken specialist courses in econometrics, data science and machine learning, business intelligence and coding.
- **MS in Technology Management & Innovation:** Student must undertake an IT and/or innovation-related project. The program has covered business, finance and leadership topics for

technology/IT leadership including digital strategy, e-leadership, digital transformation, digital marketing, agile project management, innovation and entrepreneurship.

3. RESPONSIBILITIES

The student owns and governs the project as a professional consultant. They

- establish the client's needs, diagnose problems, develop and execute a realistic project plan
- maintain a rich working relationship with the client throughout the project
- provide clear actionable recommendations and assisting implementation as necessary.

The client assigns a project sponsor to serve as the student's main client contact. They

- are available for professional and technical guidance. The time they spend on the project will depend on its nature and scope. We recommend weekly update meetings in person or online
- discuss the conduct of the work with the faculty supervisor and fill in the client feedback form.

The program head assigns a faculty supervisor to serve as academic contact and examiner. They

- are available for professional and technical guidance
- examine the project output and recommend a final grade.

CEU appoints a capstone project manager from senior faculty for the academic year. They

- solicit and approve high-level project proposals, do matchmaking between clients and students
- communicate project processes, requirements, deadlines and other operative issues
- guide students and clients through any legal and administrative hurdles.

4. PROJECT PROCESS AND TIMELINE

- **January-February: Prospective client submits high-level project proposal(s). Student submits expressions of interest, any preferences or requests to capstone project manager.** The capstone project manager makes initial introductions at the student's request. He must be informed at all times if the student solicits prospective clients or projects directly.
- **before March 15: CEU assigns student to client, client assigns project sponsor.**
- **before April 5: Project Initiation Document (PID) and SITS Registration.** The student works with the project sponsor to develop the draft PID, submits to the capstone project manager, program head and program coordinator. The student registers for the Spring term Capstone Project Writing course on SITS.
- **before April 20: Project begins.** CEU appoints the faculty supervisor. The project kickoff documents (PID, letter of terms, non-disclosure agreement) are finalized and approved.
- **May 10: Interim progress report.** The student submits to the faculty supervisor and program coordinator. The report should discuss the project's status, interim outcomes, work to be done, any problems or issues.
- **June 9: Final deliverables.** The student submits to the project sponsor, faculty supervisor and program coordinator.

Additional milestones may be set by the client or faculty supervisor.

Students who cannot complete the capstone project by June 9, 2020 may extend the final delivery date to June 2021. They can request the extension by notifying the program head, program coordinator and faculty supervisor (if applicable) in writing. On June 30, their CEU status will be changed from "Enrolled" to "Absolutorium, thesis due". CEU can only commit to providing faculty supervision between March and June.

The capstone project must mandatorily be completed by June 9, 2019 by full-time non-EU/EEA students who seek to apply for a Hungarian [Residence Permit for the Purpose of Job-searching or Entrepreneurship](#).

Part-time students who extend their study period to June 2021 may delay the entire project process by one year. They can request the extension by notifying the program head and program coordinator.

5. FINAL DELIVERABLES

1. **Project presentation.** The student submits to the project sponsor, and separately to the faculty supervisor and program coordinator. It should have a slideshow format with 10-20 slides. While it may include some technical aspects, it should focus on the problems, way to the solutions, actionable outcomes and recommendations.

The student *may* be requested by the project sponsor, faculty supervisor or program head to do a presentation showcase. The showcase may be attended by other client stakeholders, as well as CEU faculty and students subject to the prior consent of the proposal sponsor.

2. **Project technical discussion.** The student submits this technical document (paper or presentation) to the project sponsor, and separately to the faculty supervisor and program coordinator. It is designed to the client's requirements and held confidential by the faculty supervisor and program coordinator as per the NDA. It should deliver a detailed description of all aspects of the work, including data description and methodology. It has no length constraint but must be comprehensive, well-structured, and illustrated as necessary.
3. **Public project summary.** The student submits this three-page essay to CEU's [Electronic Theses and Dissertations](#) database. It is designed for a general audience with confidential information, including the client's name if required, removed. It should summarize the work done, its benefits to the client, key outcomes, and the student's learning experience including lessons learnt.

See Appendix 2 for detailed instructions on how to submit the public project summary.

6. EXPECTATIONS / PROJECT GRADING

The project is worth a total of eight (8) CEU credits.

It is assessed in two steps by the program head on the faculty supervisor's recommendation:

- **Capstone Project Writing (4 cr):** graded on the student's initial plans, progress and professional performance, including the interim project report to be submitted by May 10.
- **Capstone Project (4 cr):** graded on the quality of the final project output and the student's professional performance.

The faculty supervisor assesses the final project output by

- requesting the project sponsor to complete the client feedback form
- giving a short written reflection on the quality of the final deliverables, the project output's relevance and potential benefits for the client, and the student's professional performance
- making a recommendation for the final grade.

7. IMPORTANT CONTACTS

- Capstone Project Manager: [György Bógel](#), Professor
- Corporate Relations Manager: [Anna Kaposvári](#)
- Head of MS in Business Analytics: [Gábor Békés](#), Assistant Professor
- Head of MS in Finance: [Péter Szilágyi](#), Associate Professor
- Head of MS in Technology Management and Innovation: [Achilles Georgiu](#), Visiting Lecturer.
- Program Coordinator for MS in Business Analytics, MS in Technology Management and Innovation: [Eszter Fuchs](#)
- Program Coordinator for MS in Finance: [Zsuzsanna Bordás](#)

Students should visit the capstone project's CEU e-learning page regularly.

APPENDIX 1: CAPSTONE PROJECT EXAMPLES

MS in Business Analytics: Students must participate in a complete analytics workflow.

The program has covered a unique mix of data analytics, computer science and business including coding, statistics with ML, big data and cloud computing, and data engineering. Many students have taken specialist courses on text mining, deep learning or agile project management. Typical examples:

- Finding relationships between an outcome (e.g. sales, downloads, clicks) and client features
- Fraud detection on a sample dataset
- Designing a decision-support model based on data
- Developing a precision solution for agriculture
- Building a predictive model of customer behavior
- Designing a data-based smart solution for production, sales, logistics, healthcare, HR etc.
- Model building to cluster clients by behavior and discovering new ways of market segmentation
- Designing the architecture of a new data warehouse
- Designing and evaluating experiments through data analysis
- Designing and evaluating a data intensive survey

MS in Finance: Students must undertake a finance-related consulting project.

The program has covered a broad range of topics in corporate finance, investments, banking, PE/VC, entrepreneurial finance and fintech innovation. Many students have taken specialist courses in econometrics, data science, data engineering, business intelligence and coding. Typical examples:

- Financial review, market survey and strategy for a company, business unit or product
- Financial planning and valuation for a new venture
- Financial markets advisory including fundraising, optimizing funding structures
- Transaction advisory and due diligence for a company or private equity firm
- Improving financial management or financial reporting processes
- Risk management benchmarking and best practice analysis
- Analysis of complex financial instruments
- Investment consulting and portfolio management
- Real estate valuation and transaction advisory
- Exploring opportunities for fintech innovation, uses of technology to improve financial services
- Preparing a business plan or (digital) marketing strategy for a new fintech venture

MS in Technology Management and Innovation: Students must undertake an IT and/or innovation-related project.

The program has covered business, finance and leadership topics for technology/IT leadership including digital strategy, e-leadership, digital transformation, digital marketing, agile project management, innovation and entrepreneurship. Typical examples:

- Preparing a project plan for a new IT service
- Conducting an IT leadership analysis and preparing a plan for improvement
- Organizational audit of the IT unit and IT processes; generating ideas for reducing costs and improving the controlling system; preparing a security audit and ideas for improvement
- Strategic and financial analysis of large-scale IT investment options
- Preparing a plan with a business case for IT outsourcing / insourcing; preparing a plan for improving vendor selection and the complete technology buying process
- Preparing a project plan for a digital marketing campaign; designing a new e-commerce marketing and sales channel
- Generating a data strategy or IoT strategy with implementation plan
- Designing a new smart system with implementation plan
- Preparing a detailed business plan for a new technology venture.

APPENDIX 2: SUBMISSION OF PUBLIC PROJECT SUMMARY

The student submits this three-page essay to CEU's [Electronic Theses and Dissertations](#) database. It is designed for a general audience with confidential information, including the client's name if required, removed. It should summarize the work done, its benefits to the client, key outcomes, and the student's learning experience including lessons learnt.

Notes:

- Please consult [this website](#) with important information before uploading the summary.
- Please make it clear on the front page that this is a capstone public project summary.
- Please ensure that the project title is relevant, properly demonstrates the work done, and is spelled correctly without any mistakes. What you see in SITS will appear on your transcript.
- ETD cannot handle documents that are shorter than ten (10) pages. Therefore, please submit the summary with any necessary empty pages at the end, otherwise you will not be able to proceed.
- ETD only accepts bookmarked PDF files. Please follow these instructions to avoid the missing bookmarks error message when uploading:
 - The title(s) in the MS Word document should be formatted with Heading styles, then proper PDF conversion settings are needed to get the PDF bookmarked.
 - If the document has a single title, it should be set to Heading 1 style; subtitles (if any) should be set to Heading 2 style etc. (Heading 1 is normally used for chapter titles.)
 - If default Heading style font settings do not fit the requirements they can be modified. (They definitely do not fit the general CEU thesis formatting requirements.)
 - In necessary please consult [How to get a bookmarked PDF from MS Word document](#).
- When uploading the summary, please choose Economics as the department.
- Once you have uploaded the summary, please inform your program coordinator. They will check and move data including the project title to SITS. You will then be asked to open SITS and check your thesis data and thesis credits in the Thesis Info section. It is critically important that the project title in ETD and SITS are identical.
- Please contact your program coordinator in case you need any assistance or further information.