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Information
regarding the Kartografie-Labor BSc (LV 103-0241-00L),
regarding the Cartography Lab MSc (LV 103-0747-00L).

1. Project description and administrative issues

The *Kartografie-Labor BSc* and the *Cartography Lab MSc* are both semester projects where students independently implement a challenging cartographic project. The final product may be a solitary static map for printed or digital use, a poster or a brochure with cartographic visualisations, a web application with integrated maps (e.g., story map), or even a physical model with cartographic image.

The *Kartografie-Labor BSc* is offered on Bachelor level, the *Cartography Lab MSc* on Master level. Detailed descriptions of the respective requirements are given in chapter 2. It can be taken individually or in small groups of two or max. three students.

Independently determining the thematic content, the methods, and the workflow is part of the project. Likewise, the topic of the final product (see below) is to be determined by the students themselves but must be discussed in advance with the contact person (contact person see below). The product to be developed may also be an integral part of another work (e.g., map supplement for a master's thesis).

The final product (map, web application, concept, analysis, research, etc.), the technical report, and the work behaviour will be graded (see chapter 6). Group work will be graded individually, if the individual contributions to the final product and to the technical report can be clearly attributed to the individual students. If this is not possible, the entire project will be graded as a whole, and all students will receive the same grade.

The *Kartografie-Labor BSc* and the *Cartography Lab MSc* are offered in the spring and fall semester. They official start on the first day of the semester. The effective start can be defined by the students themselves. The submission deadline is two weeks after the end of the semester. The exact dates are determined by the contact person.

The *Kartografie-Labor BSc* and the *Cartography Lab MSc* are rewarded with 6 ECTS (180 SWS) each. They may both be absolved in either German or English.

2. Requirements

Requirements for the *Kartografie-Labor BSc*
Requirements for the *Kartografie-Labor BSc* are the successful completion of the following courses:
- Kartografie Grundzüge;
- Kartografie II.

Requirements for the *Cartography Lab MSc*
Requirements for the *Cartography Lab MSc* are the successful completion of the following courses:
- Kartografie Grundzüge;
- Kartografie II;
- Recommended: Application Development in Cartography or Research Topics in Cartography.

For students joining the specialisation *Cartography* at Master level, at least the completion of the course *Application Development in Cartography* is required.

3. Example of a project workflow

The following steps illustrate an exemplary project workflow and the aspects to be considered for the development of a product (here illustrated for a static map). For other products, the workflow may be adjusted. The submission of a concept and its discussion with the supervisor(s) (see chapter 8) however is mandatory.

Step 1: Conceptual phase including choice of topic
- Choice of topic (main topic, subtopics, extent, ...).
- Purpose of visualisation (target audience, form of the map product, publication, ...).
- context (single product, part of a publication, …).
- Rough design (product format, scale, colours, base map, ...).
- Infrastructure (software, hardware, printing, ...).
- Further use of the product (e.g., for publication, transfer to third parties, …).
- Time schedule.

Intermediate product: written concept (to be discussed with the supervisor(s); see chapter 8).
- 2-3 pages.
- Starting position, goals, methods, workflow, individual stages, relevant data, potential intermediate and/or final results, schedule, etc.
- Additionally, sketches, tables, images, etc.
- The concept, marked with name and date, must be submitted to the supervisor(s) *bevor* the discussion.

Step 2: Acquire and prepare relevant data
- Current base maps (printed maps, digital maps, orthophotos, satellite images, ...).
- Older maps.
- Digital datasets (GIS, DB, digital geodata, statistical data, ...).
- Aerial images, satellite images, photos.
- statistics, chronicles, records.
- Literature, similar projects.

Step 3: Map compilation
- Map layout.
- Legend draft.

Step 4: Map design
- Processing the data (extraction, scanning, vectorisation, image processing, ...).
- Define workspace.
- Base map (design, integration).
- Structure of layers, styles, colours, symbols.
- Generalisation of data.
- Cartographic design of map elements (geometry, shape, symbols, text, …).
- Additional map information (title, subtitle, legend, scale and/or scale bar, sources, imprint with author(s), course, date, ...).

Step 5: Printing
- Print preparation (structuring the file, interim file, ...).
- Possibly pre-print (format conversion, colour separation, …).
- Print (offset, laser printer, ...).

Step 6: Considerations for further use or presentation
- Further derived maps, figures, data transfer, etc.

4. Technical Report

Description and scope
Part of the *Kartografie-Labor BSc* and the *Cartography Lab MSc* is to write a technical report. It describes all relevant processes and decisions during the planning and execution of the project as well as the results and lessons learnt.

The report is to be written in accordance with the common good practices regarding scientific writing. Figures and tables incl. meaningful captions are to be included where appropriate and must be referenced. ETH's citation etiquette must be followed:
https://ethz.ch/content/dam/ethz/main/education/rechtliches-abschluesse/leistungskontrollen/plagiat-zitierknigge.pdf.

The report should be between 8 to 10 pages (A4), incl. cover page, table of contents, table of figures, references, but excl. appendices and map supplements.

Structure and content
The report should at least cover the following elements:

- **Cover page** (separate page; without page numbering)
    - *Kartografie-Labor BSc* or *Cartography Lab MSc* (plus semester of execution).
    - Institute of Cartography and Geoinformation, ETH Zurich.
    - Possibly ETH logo and chair logo (request from supervisors).
    - Map title, possibly subtitle of the topic.
    - Author(s) (incl. study programme and semester, email address)
    - Lead: Prof. Dr Lorenz Hurni.
    - Supervisors IKG: [(title), given name and family name].
    - Place and date of submission.
    - Possibly representative map excerpt or appropriate cover image.

- **Content** (max. 1 page)
    - Table of contents; with page numbers of main and subchapters; hierarchically structured.

- **Introduction**
    - Short introduction with description of the problem or the (personal) motivation resp. main aim.

- **Goals of the project work**
    - Thematic goals (map type, content, scale, target audience, purpose of use, etc.).
    - Technical goals (production methods, hard- and software, etc.).

- **Data**
    - Data for base map.
    - Data for thematic content.
    - Additional data used (maps, images, statistics, own data collection, etc.).

    Important: All data sources must be referenced in the list of references (see below).

- **Technical equipment**
    - Hardware (computer, printer, scanner, etc.).
    - Software (software, programs file formats, specific settings and modes, etc. that were used).
    - Additional infrastructure.

- **Workflow and individual steps**
    - Data acquisition (acquisition, preparation, integration, etc.).
    - Data processing (transformation, cartographic implementation, etc.).
    - Design of the map and the final product.

- **Results**
    - Concise description of the final product.
    - Further use of the final product.

- **Reflection of results and (personal) experiences**
    - Critical reflection of the final product (including suggestions for further improvements).
    - Description of lessons learnt and problems with the employed methods and workflow.

- **References** (sources)

Structure suggestion: Author(s) or issuer (year). Title of the work or dataset. Further details; Institution, Publisher, pages; URL-address (last access: (Date); etc.

- **Appendices**

- **Supplements** (maps, data, etc.)

Layout und writing style
The layout and design of the report may be chosen freely. Still, the report must be written according to the typographic rules and in a reader-friendly manner (e.g., for the text body: font Arial, size 10 pt, 1.2-times line spacing; margins of 2-2.5 cm; regular page numbering; possibly informative header). The report and the table of content should be structured hierarchically and formatted in a reader-friendly way. Careful and comprehensible wording as well as correct spelling, grammar and punctuation should always be ensured.

5. Submission products

- **Final product(s)** (e.g., printed map, poster, website, application, source code, etc.).

- **Technical report** (see chapter 4).
    - One printed physical report: 8-10 pages; incl. cover page.
    - (The report does not have to be spiral bound. Loose papers in a display sleeve are also sufficient.)

- **Storage device** (e.g., USB-stick) with the following digital files:
    - Concept in original format (MS Word, LaTeX, or similar).
    - Concept as PDF-file.
    - Report in original format (MS Word, LaTeX, or similar).
    - Report as PDF-file.
    - Print-ready final product in original format (maps, flyer, poster, etc.).
    - Print-ready final product as PDF-file (maps, flyer, poster, etc.).
    - Web application, software, or application as documented source code, screenshots, etc.).
    - Data (well-structured folder with digital source data, possibly intermediate products, etc.).

Important: Give meaningful names to the storage device and all folders and files
(e.g., *CartoLab_HS22_Surname-Name_Report_2023-01-06.docx*).

- **Declaration of originality**

ETH Zurich's declaration of originality must be filled out, signed, and submitted together with the technical report. However, it does not have to be an integral part of the report, but may also be loosely attached to the report.
The PDF-form for the declaration of originality of ETH Zurich can be found here:
https://ethz.ch/content/dam/ethz/main/education/rechtliches-abschluesse/leistungskontrollen/declaration-originality.pdf

6. Grading criteria

The *Kartografie-Labor BSc* and the *Cartography Lab MSc* are assessed and graded based on four criteria with various assessment points. These four criteria are weighed differently to make up the final grade. In case content and goal of the project deviate from this structure, individual assessment points may be omitted or supplemented by others. The final grade will be rounded to quarter marks.

Criterium 1: Conceptualisation (weight: 2)
    - Project: main topic, context, problem definition, originality.
    - Objectives: phrasing, precision, limitations.
    - Working title: phrasing, meaningfulness.
    - Project structure: parts (chapters, sections), title names.
    - Methods: derivation, new approaches.
    - Positioning of project: state of development, research environment.
    - Project finalisation: critique, conclusions, outlook, lessons learnt.

Criterium 2: Final product (map, web application, concept) (weight: 4)
- Data: selection, processing, integration.
- Methodology: chosen methods, software application.
- Content: substance, meaningfulness.
- (Map) design: design, symbolisation, fine-tuning.
- Legend: structure, design, alignment.
- Layout: structure, balance, alignment.
- Implementation: functionality, interactivity, transitions.
- Typography: choices, hierarchy, font design.
- Innovation: new workflows, approaches, alternatives.
- Files: structure of graphics file, structure of code and documentation.

Criterium 3: Technical report, storage device (weight: 2)
- **Content: content substance, terminology, line of reasoning.**
- Cover page: information, formatting, design, illustration.
- Table of contents: structure, title, hierarchy, formatting.
- Illustrations: images, tables, appendices, explanations.
- References: inclusion, cross-references, directory.
- Writing style: wordings, clarity, understandability.
- Correctness: grammar, spelling, punctuation.
- Layout, design: print space, typography, line spacing.
- Storage device: completeness, structure, naming.

Criterium 4: Work behaviour (weight: 1)
- Proactivity, effort.
- Project organisation, team work (if applicable).
- Independence, support.

7. Use of IKG geodata

All geodata supplied for the intended semester projects by the institute of cartography and geoinformation continue to be the property of the respective owners. They may only be used in connection with the intended semester project. Any other use or disclosure of the geodata to third parties is not permitted.

8. Supervision

Every *Kartografie-Labor BSc* or *Cartography Lab MSc* is supervised by one or two advisors from the IKG. This supervision is coordinated together with the contact person. The supervisors will provide thematic and technical advice and support. However, the actual implementation and the timely submission of the project is the student's responsibility.

9. Contact person for administrative questions

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