# Template for course descriptions (BA elective courses) at the Department of Sociology

To be completed by the lecturer and sent to [soc-studieadm@soc.ku.dk](mailto:soc-studieadm@soc.ku.dk) and [jd@soc.ku.dk](mailto:jd@soc.ku.dk).See the bottom of the document for further guidance on each point.

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# Course description:

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| **1. Contact information:**  *Name, email address, phone numbers etc.* | Merlin Schaeffer, mesc@soc.ku.dk |
| **2. Course title**  *All BA electives are to be offered in English. If the title is English, no Danish title is required.* | Multiple Regression Analysis and Fundamentals of Causal Inference |
| **3. Semester(s)**  *Autumn 2022 = E22*  *Spring 2023 = F23*  *Summer 2023 = S23* | *X Autumn 2022 = E22*  *Spring 2023 = F23*  *Summer 2023 = S23* |
| **5. Number of ECTS credits**  *- 7.5 ECTS (BSc2016)*  *- 15 ECTS (BSc2016)* | *X 7,5 ECTS*  *15 ECTS* |
| **8. Preferred exam type**  *Exam type and options depend on level and course category.   For Active Participation please describe what Active Participation will consist of!* | 1. **Completion of at least 10 of the weekly Absalon online quizzes**. Quizzes need to be handed in within two weeks after they are made available online. Completion of at least 10 of the weekly Absalon online quizzes is the prerequisite for being qualified for the written take-home exam, which is integrated with “Velfærd, ulighed og mobilitet”. Note that the quizzes are not graded and thus there is also no pass-threshold. Students simply need to complete 10 quizzes. 2. **Integrated written take-home exam with “Velfærd, ulighed og mobilitet”**: A written take-home assignment based on a set of questions that need to be answered individually or in a group of max four students. The scope of the written take-home essay is a maximum of 10 pages. For group assignments, an extra 5 pages are added per additional student. |
| **9. Teaching schedule**  *Specify the number of lessons and weeks. Standard schedule:*   * *7.5: 14x3 or 7x2/7x4* * *15: 14x3x2*   *Summer Schools in Summer 2023 will be possible in week: 31, 32, 33 and/or 34* | *X 14x3*  *7x2 / 7x4*  *14x3x2*  *Summer School (no less than 2 weeks):* |
| **10. Course content**  *Description of the course content (and objective), i.e. a description of what happens during the actual course. For example a description of the methods and theories which will be introduced, touched upon or worked with and the topics which students will be working on during the course.* | This course will provide students with a comprehensive understanding of the theory and practice of multiple regression analysis, including how to interpret regression coefficients and how to use regression analysis to test hypotheses and make predictions. In addition to learning multiple regression analysis, students in this course will also gain an understanding of the fundamental principles of causal inference. This includes distinguishing between correlation and causation, recognizing the impact of confounding variables, and learning techniques to establish causality. Students will also come to appreciate the critical role that multiple regression plays as a fundamental statistical tool in causal inference. The focus on multiple regression and causal inference entails a strong focus on different research designs, including randomized controlled trials, quasi-experimental designs, and observational studies, and how to choose the appropriate design for a given research question. To gain hands-on experience, students will learn how to use R to conduct multiple regression analysis and causal inference techniques. Thereby the students will explore how multiple regression analysis and causal inference can be applied to sociological research questions, such as the effects of social class on educational attainment or the impact of discrimination on health outcomes. Overall, this course will provide students with a strong foundation in statistical analysis and causal inference, which are essential skills for conducting sociological research. |
| **11. Intended learning outcome**  **Important – new requirements for description of objectives**  The description of objectives consists of the learning outcome at the end of the course. Learning outcomes are defined in the Programme Order in terms of knowledge, skills and competences.  Consequently, the description of objectives/learning outcomes must be subdivided into:   * knowledge, * skills and * competences.   The attached instructions (from HEALTH) serve as a source of guidance and inspiration on how to formulate the description of objectives, including the use of appropriate terms and active verbs.  *The level for the description of objectives must be aligned with the level (BA/MA) at which the course is primarily targeted.* | **Knowledge**  The course introduces students to multiple regression analysis, the fundamentals of causal inference, and their application to sociological research questions. Thereby, students gain knowledge of:  - Multiple linear regression and all their important parameters,  - Statistical hypothesis tests and their use in multiple regression analysis,  - Assumptions of multiple OLs regression,  - Randomized controlled trials,  - Instrument variable regression,  - Interaction effects,  - Polynomials,  - Regression discontinuity designs.  **Skills**  The course gives students the opportunity for practical mastery of regression analysis in R. Accordingly, upon completion of the course students will be able to:    - Conduct multiple regression analysis in R,  - Correctly interpret regression coefficients,  - Use statistical hypothesis tests to answer sociological questions,  - Select relevant control variables for a multiple regression analysis,  - Specify and correctly interpret interaction effects,  - Specify and correctly interpret polynomials to specify non-linear relationships,  - Conduct instrument variable regression in R,  - Conduct regression discontinuity designs in R,  - Compare model fit,  - Conduct model checks,  - Visualize and communicate multiple regression results,  - Critically evaluate the results of multiple regression analysis.  **Competence**  After completing this course, students will be able to:  - Evaluate the effects of policies, organizational innovations, and so on.  - Identify different causal factors explaining a phenomena,  - Distinguish mere correlations from actual causal relationships,  - Use knowledge and skills for research and consulting,  - Analyze various types of data and quickly gain a working understanding of new data sources,  - Write reports that involve advanced statistical data analysis,  - Acquire further advanced quantitative methods training in factor analysis, multilevel modelling, panel data analysis, or computational sociology. |
| **12. Teaching and learning methods**  *The types of instruction are described here, e.g. lectures, class instruction, exercises and excursions.* | The three-hour weekly lecture contains two conventional lectures of 45 minutes, and two 20 minutes exercises where students solve tasks using R. In addition to the weekly lecture, there are also weekly tutorials taught by student instructors where lecture materials and exercises are reviewed in smaller groups. On top of that there are weekly online quizzes on Absalon that give automated feedback. |
| **13. Feedback** *A description of how peer-feedback is an integrated part of the lectures* | Weekly mandatory online quizzes will give students automated feedback on single tasks. Moreover, students will get further feedback in weekly tutorials given by student instructors. The latter will also be helping with feedback throughout the exam period up until submission of their final integrated exam. |
| **14. Literature**  *In this field, indicate which teaching materials will be used, primarily by listing the main literature. The teacher uploads the full curriculum to Absalon. See also the workload table below.* | De Veaux, Richard, Paul F. Velleman, and David E. Bock. 2021. Stats. Data and Models. Boston: Pearson & Addison Wesley.  Angrist, Joshua D., and Jörn-Steffen Pischke. 2014. Mastering ‘Metrics: The Path from Cause to Effect. Princeton University Press. |
| **15. Recommended academic qualifications**  *The specific competences which students must possess (or which it would be advantageous for students to possess) in order to be able to participate in the course may be indicated here.* | Students should have a completed “Intro til R” and “Basic Statistics”, or other courses that cover the same content. |
| **16. IT requirements, if any**  *Is there a need for IT rooms? (As standard, all rooms are equipped with network connection and projector)* | Own laptop with running and updated versions of RStudio and R. |
| **17. Comments, if any**  *Here you can provide particular information in relation to the course.* |  |

**Course description guidelines**

**Re 2.**

The title will be stated on the graduate's certificate. If the course is offered in Danish, we need an English title for the English version of the certificate. If the course is offered in English, only the English title is used.   
**Please Note!** The course cannot change the title, if it has been offered before.

**Re 3.**

You must write in which semester(s) your course will be offered. If, for example, you want to offer your course in both E22 and F23, you do not need to submit your form twice; you should just remember to add the information in the form.

**Re 5.**

Only one exam type must be selected.

Oral exam:

* Synopsis exam. Individually or in groups. 7-point grading scale. Internal grading.

Written exam:

* Written assignment answering one or more questions posed by the lecturer. 48 hours to 3 weeks. Individually or in groups. 7-point grading scale. Internal grading.
* Term paper. Individually or in groups. 7-point grading scale. Internal grading.
* Portfolio assignment. May be handed in on an ongoing basis for feedback. Handed in collectively at the end of the course. Individually or in small groups. 7-point grading scale. Internal grading.
* Active Participation. Pass/fail.  
  You need to describe what Active Participation will consist of in your course.

**Re 6.**

The course must be organised as described below. A schedule other than the one described must be approved by the head of studies.

A standard 7.5 ECTS course is taught over 14 weeks of one weekly 3-hour session, or 7 weeks of two weekly 2-hour sessions + 7 weeks of four weekly 2-hour sessions.

A standard 15 ECTS course is taught over 14 weeks of two weekly 3-hour sessions.

**Re 7.**

Write down what students can expect to learn on the course (e.g. which subjects, methods, theories). This item is particularly important in relation to students' choice of course. The course registration is binding, so students will not be able to deregister and are obliged to pass the course chosen. It must therefore be possible for the students to make decisions which are as informed as possible, and the description under this item must therefore provide the students with a good and realistic impression of the overall course content. An actual course plan is not expected.

**Re 8.**

The description of objectives consists of the learning outcome at the end of the course. Learning outcomes are defined in the Programme Order in terms of knowledge, skills and competences.

The description of objectives for the course should be formulated in such a manner that it clearly specifies the knowledge, skills and competences on which it is based.

*The level for the description of objectives must be aligned with the level (BSc/MSc) at which the course is primarily targeted.*

This point is particularly important in relation to the student’s choice of course. Course registration is binding. Students are therefore not allowed to withdraw and are required to pass the chosen course. As such, they must be able to make the most informed decision possible. The description in this section must therefore give the student a good and realistic impression of the course.

**Re 9.**

If this box is not completed, 'class instruction' will be specified as default.

**Re 10.**Write down, how you plan the peer-feedback to be an integrated part of the lectures of the course

**Re 11.**

The specific syllabus and literature need not be stated here, but must be specified in Absalon. See also the workload form below.

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| Link to curricula: <http://sociologi.ku.dk/english/curricula/> |

# Workload

It is expected that a student generally uses 27.5 working hours per 1 ECTS:

|  |  |  |
| --- | --- | --- |
| **ECTS** | **Total number of lessons** | **Total number of student working hours** |
| 7.5 | 42 | 206 |
| 15 | 84 | 412 |

In the table below, you must indicate what you consider the students' average workload to be on the course. If the course is offered as, for example, a 7.5 and 10 ECTS course, the workload must be indicated for both ECTS levels.

The workload form must be used to give students a better idea of the course in question. The workload form is also a tool for documenting different workloads on courses with two different ECTS values. Finally, the form must be used to determine the scope of the syllabus.

|  |  |  |
| --- | --- | --- |
| **Workload\*** | | |
| **Categories** | **Explanation** | **Number of hours** |
| Total teaching hours | The total number of teaching hours is fixed and corresponds with the ECTS credits (e.g. 7,5 credits = 42 hours, see table above) | 7.5 ECTS credits |
| 42 |
| Reading the syllabus | No. of student working hours spent reading the literature on the syllabus The norm is 8–12 pages per hour. The precise extent is determined following an assessment of the curriculum’s level of difficulty. | 7.5 ECTS credits |
| 28 |
| Other preparations for classes | No. of student working hours earmarked for other study-related activities (acting as opponent on assignments, student presentations, etc.) | 7.5 ECTS credits |
| 28 |
| Written papers | No. of student working hours on ongoing assignments | 7.5 ECTS credits |
| 56 |
| Exam preparation and exams | No. of student working hours preparing for and sitting exams | 7.5 ECTS credits |
| 48 |
| Total student working hours | The total number of teaching hours is fixed and corresponds with the ECTS credits (e.g. 10 credits = 275 hours, see the table above) | 7.5 ECTS credits |
| 206 |

**PLEASE NOTE!**  
If your course is for 15 ECTS credits, please just enter the ECTS field before you insert the number of hours in the table above.