

Statistical Research Methods in Psychology, part 2, 7.5 credits

Statistiska forskningsmetoder i psykologi, del 2, 7,5 hp

Course Code/Codes	35PS047, 3.5 credits 35PS048, 4 credits
Subject Area	Psychology
School/equivalent	School of Law, Psychology and Social work
Valid from	2017-01-16
Approved	2016-12-02
Revised	--
Approved by	Head of School
Translation to English, date and signature	2017-06-14 CHT

1 Course content

Part 2 of Statistical Research Methods in Psychology provides in-depth knowledge of quantitative methods. The course discusses more advanced multivariate methods for data processing, such as general linear models; multinomial regression; discriminant analysis; path analysis; factor analysis; and a number of different person-oriented analysis methods. An extended course on meta-analysis is also provided.

The course covers the following components:

- Logistic regression and multinomial regression
- Discriminant analysis
- Repeated measurement
- MANOVA and GLM. Intervention designs
- Analyses of statistical power and effect sizes
- Path analysis
- Mediating mechanisms and moderating conditions
- Person-oriented analysis methods: Cluster analysis, Sleipner, Exacon, CFA, and person-oriented analyses for longitudinal studies
- Handling missing data and imputation
- Meta-analysis

2 Outcomes

2.1 The course in relation to the doctoral programme

The course shall primarily refer to the following intended learning outcomes for third-cycle courses and study programmes as described in the Higher Education Ordinance, i.e. the doctoral student shall demonstrate:

Knowledge and understanding

- familiarity with research methodology in general (part of outcome 2)
- familiarity with the methods of the specific field of research in particular (part of outcome 2)

Competence and skills

- the capacity for scholarly analysis and synthesis (part of outcome 3)
- the ability to identify and formulate issues with scholarly precision critically, autonomously and creatively (part of outcome 4)
- the ability to plan and use appropriate methods to undertake research and other qualified tasks within predetermined time frames (part of outcome 4)
- the ability to review and evaluate research and other qualified tasks (part of outcome 4)

Judgement and approach

intellectual autonomy and disciplinary rectitude (part of outcome 9)

The intended learning outcomes are listed in the same order as in the general syllabus for the programme.

2.2 Intended course learning outcomes

To obtain a passing grade, the doctoral student shall demonstrate:

- a high degree of familiarity with multivariate scientific methodology in general
- an advanced ability to identify and formulate scientific problems, critically and autonomously, which can be tested statistically
- advanced ability to review and evaluate statistical research methods
- in-depth understanding of basic quantitative methods, their possibilities and limitations
- extended understanding of basic and more advanced statistical theory and analysis methods
- sound ability to perform their own basic statistical analyses in research
- sound ability to apply different statistical methods on the same research problem
- extended knowledge and understanding of multivariate research methods
- extended knowledge of differences and similarities between different types of statistical methods
- sound ability to apply relevant multivariate statistical methods to their own data

3 Reading list and other teaching material

The following course readings and teaching material will be used on the course:

Compulsory reading:

Hair, Joseph. F., Anderson, Rolph. E., Tatham, Ronald. L., & Black, William. C. (2014). *Multivariate Data Analysis*. 7th edition. NJ: Prentice Hall. 730 pages.

Grimm, L.G., & Yarnold. P.R. (2000). *Reading and understanding multivariate statistics*. 2nd edition at least. Washington: American Psychological Association. 352 pages.

4 Teaching formats

Teaching on the course takes the following format:

Lectures, seminars, and computer exercises.

5 Examination

The course is assessed through the following examinations which will be graded separately:

35PS047, Statistical research methods in psychology, part 2:1, 3.5 credits
35PS048, Statistical research methods in psychology, part 2:2, 4 credits

The examinations are in the form of two hand-in assignments of 3.5 credits and 4 credits respectively.

For examinations consisting of several examination components, the following applies: If during the course it is concluded that a doctoral student is unable to complete a certain examination component, the examiner may set a substitute assignment provided that circumstances do not reasonably allow for the course component to be completed at a later date during the run of the course.

6 Grades

Examinations on third-cycle courses and study programmes are to be assessed according to a two-grade scale with either of the grades 'fail' or 'pass' (local regulations).

The grade shall be determined by a teacher specifically nominated by the higher education institution (the examiner) (Higher Education Ordinance).

To obtain a passing grade on examinations included in the course, the doctoral student is required to demonstrate that he/she attains the intended course learning outcomes as described in section 2.2. Alternatively, if the course consists of multiple examinations generating credit, the doctoral student is required to demonstrate that he/she attains the outcomes that the examination in question refers to in accordance with section 5.

A student who has failed an examination is entitled to a retake.

If an examination consists of several examination components, and a student fails an examination component, the examiner may, as an alternative to a retake, set a make-up assignment with regard to the examination component in question.

A doctoral student who has failed an examination twice for a specific course or course element is entitled, upon his/her request, to have another examiner appointed to determine the grade.

7 Admission to the course

7.1 Admission requirements

To gain access to the course and complete the examinations included in the course, the applicant must be admitted to a doctoral programme at Örebro University.

Alternatively, the applicant must be admitted to a doctoral programme at another equivalent higher education institution.

7.2 Selection

Selection between applicants who have been admitted to doctoral programmes at Örebro University and who otherwise meet the admission requirements as listed above is made according to the following order of precedence:

Priority will be given to those to whom the course is compulsory.

If no other selection criteria are specified in this section, priority shall be given to applicants with a lower number of course credits left before the award of their degree over applicants with a higher

number of remaining course credits. Should two or more students have equal number of credits, selection will be done through the drawing of lots. This also applies within any selection groups listed unless otherwise stated.

7.3 Other applicants than doctoral students admitted at Örebro University

Other applicants than doctoral students admitted at Örebro University may be given access to the course on the grounds of provisions for and/or agreements regarding contracted courses, joint degrees, national graduate schools or cooperation in other respects with other universities.

Any decisions on what such other applicants may be given access to the course are made separately and on the basis of the provisions and/or agreements that occasion the student to apply for the course.

For participation in the course in other respects, the same provisions shall apply as for doctoral students admitted to Örebro University.

8 Transfer of credits for courses, study programmes and other experience

Provisions on the transfer of credits can be found in the Higher Education Ordinance and on the university's webpage.

9 Other information

The language of instruction is English.

Transitional provisions

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