

## Application checklist for Admission to Master's programme in Psychology - February 2025

(For students with a Bachelor in Psychology obtained outside the Netherlands)

To qualify for the master's degree in Psychology at the University of Groningen, it is required to have sufficient knowledge and skills regarding Psychology and Research Methodology, at a level equivalent to that of a Dutch research-based university's Bachelor in Psychology. In the form below, you'll find the criteria you need to meet and space to provide information on the courses you've taken that fulfill these requirements. All information on these criteria can be found on our [website](#).

### Process

The admission board will assess your application based on the checklist and accompanying documentation you provide. We frequently encounter poorly completed checklists, so **it's crucial that you thoroughly meet all the requirements for your chosen track(s) and provide detailed documentation**. Due to time constraints, our evaluation policy is to reject applications when in doubt or incomplete. Please note:

- Before submitting the form, review the requirements carefully and ensure that you meet them to avoid any disappointments. In case you are not sure about the required criteria, you can look up [course information](#) from the Psychology Bachelor of the University of Groningen.
- The requirements are outlined in European Credits (EC). For reference, a Dutch Bachelor's programme at a research-based university consists of 180 EC, completed over three years, with a full study load equaling 60 EC per year. Credits from other systems will be estimated, as accurately as possible (for instance on the basis of the total number of credits and the official duration of the curriculum).
- In addition to your first choice for a track (via Studielink), you can specify a second choice in this checklist. We recommend making this choice carefully, as you can only graduate in one master's track. Once you have been placed in a track, you cannot switch to another track before the start or during the master's program.
- Most master's tracks have more admissible students than available places, so a selection procedure (including a selection test) therefore applies. However, some tracks do not require this process and offer direct admission. The selection test will take place on site in Groningen. Only students who are completing or have completed a bachelor's degree outside the EEA and still live outside the EEA are eligible for an online selection test, which will be administered under online supervision. For more information see our [website](#).
- Please note: The requirements are **not just 'guidelines'**. **They should be satisfied completely, EACH AND EVERY ONE OF THEM!**

### When filling out the checklist, it is essential that you

- provide the course names and course codes **as mentioned in your transcript** in the left column
- specify the number of credits in the column under the track(s) of choice
- **Provide official course descriptions and include internet links for verification**. Ensure you submit all relevant descriptions and, if needed, additional information such as syllabi for the specific courses/modules. Enter this information below the table, in the same order as listed, rather than in the table itself.

Name	Jane Doe
Email address	Janedoe0000@gmail.com
The selection test will be held on-site in Groningen. Do you qualify for online administration of the selection test?	No
Master track you are applying for: 1 <sup>st</sup> choice and motivation for this choice	Name of 1 <sup>st</sup> choice track: Clinical Neuropsychology  Motivation (maximum 250 words): I am eager to pursue a Master in Clinical Neuropsychology at the University of Groningen due to its cutting-edge research facilities, and comprehensive curriculum that integrates theoretical knowledge with practical applications. This programme aligns perfectly with my ambition to deepen my understanding of brain-behavior relationships and to develop advanced skills in diagnosing and treating neurological disorders.
Master track you are applying for: 2 <sup>nd</sup> choice (Specify this only if you would be interested in a different track in case you are not selected for the track of your first choice).	Name of 2 <sup>nd</sup> choice track: Environmental Psychology  Motivation (maximum 250 words): I am excited to pursue a Master in Environmental Psychology at the University of Groningen due to its esteemed reputation in the field and its commitment to addressing contemporary environmental challenges. This program offers a unique blend of theoretical insights and practical research opportunities, which will enable me to explore the psychological factors influencing environmental behavior and decision-making. I am particularly drawn to the university's interdisciplinary approach and its emphasis on real-world impact.
If your transcript does not mention European Credits (ECs), then fill in the empty spaces at the right.	The standard duration of my bachelor programme is ...3..... years. The associated number of credits is .....180.....
<p><b>For statistics we are extra strict, so please verify:</b></p> <ol style="list-style-type: none"> <li>Did you follow at least 15 EC on Statistics courses?</li> <li>Do the courses you list collectively cover ALL topics in the bulleted list in reasonable depth?</li> <li>Did you provide descriptions that explicitly mention each of these topics, or did you add other material to prove that each of the topics were treated in reasonable depth?</li> </ol>	<ol style="list-style-type: none"> <li>YES / <del>NO</del></li> <li>YES / <del>NO</del></li> <li>YES / <del>NO</del></li> </ol> <p><b>If you cannot answer YES to each of these questions, your application will be rejected.</b></p>
<p>Have you already obtained your Bachelor diploma?</p> <ul style="list-style-type: none"> <li>➤ if yes, submit a copy of your diploma, including transcript in English</li> <li>➤ if not, submit a transcript of completed courses and a list of remaining courses required for your bachelor's degree, and expected graduation date</li> </ul>	

	Track(s) of your choice and specific requirements				
	Clinical Forensic Psychology & Victimology	Clinical Neuropsychology	Ontwikkelingspsychologie	Theory & History of Psychology	All Other Tracks (ASP, EP, WOP, ACN, TDC)
<i>Please mention course names and codes as indicated in your transcript</i>	<i>EC</i>	<i>EC</i>	<i>EC</i>	<i>EC</i>	<i>EC</i>
<b>Substantive courses: at least 60 EC</b>					
These are courses psychological theories and application (e.g. Introduction to psychology, Social Psychology). This does not involve general courses like philosophy or history, meta topics, or general skills courses. Courses about research methodology, statistical techniques, study skills, etc. should also not be mentioned here.					
At most 15 EC of the 60 EC can be compensated by non-psychology courses that are very relevant for the master track of your choice. For example, a course on Environmental policy for the track Environmental Psychology.					
<b>Introduction to psychology</b>		<b>5 EC</b>			<b>5 EC</b>
<b>Social and cross-cultural psychology</b>		<b>5 EC</b>			<b>5 EC</b>
<b>Personality and individual differences</b>		<b>5 EC</b>			<b>5 EC</b>
<b>Cognitive Psychology</b>		<b>5 EC</b>			<b>5 EC</b>
...					
...					
...					
<b>Track specific courses</b> For more information see <a href="#">website</a> Out of 60 EC:	<i>Clinical Psych. courses</i> At least 20 EC	<i>Clinical NeuroPsych courses</i> At least 10 EC	<i>Ontwikkelingspsych. cursussen</i> Ten minste 10 EC	Not needed	Not needed
<b>Introduction to Clinical Neuropsychology</b>		<b>5 EC</b>		Not needed	Not needed
<b>Clinical Neuropsychology</b>		<b>5 EC</b>		Not needed	Not needed
<b>Developmental Neuropsychology</b>		<b>5 EC</b>		Not needed	Not needed
				Not needed	Not needed
				Not needed	Not needed
				Not needed	Not needed

	<i>Bachelor Thesis or comparable written treatise at least 9 EC</i>	Course(s) on Psychopathology at least 5 EC		Not needed	Not needed
<b>Psychopathology: symptoms, classification and diagnosis</b>		<b>5 EC</b>			
				Not needed	Not needed
				Not needed	Not needed
<b>Track relevant non-psychology courses</b>					
At most 15 EC may be replaced by track relevant non-Psychology courses					
<b>Global Environmental governance</b>					<b>5 EC</b>
<b>Total number of credits</b>					
<b>Practical skills on communication with and diagnosis of patients/clients: at least 5 EC.</b>					
Structuring a conversation in a psychological setting with a patient/client from the relationship-building phase to the assessment phase, based on training including role-play and feedback. An internship in itself is not sufficient, unless it meets the requirements of training including role-play and feedback. For example see University of Groningen course <a href="#">Communication and diagnostic skills</a> .					
<b>Communication and Diagnostic skills</b>		<b>5 EC</b>		Not needed	Not needed
				Not needed	Not needed
<b>Reliability and Validity of Psychological assessment instruments: at least 5 EC</b>					
Here you should specify course(s) devoted to at least classical test theory, Cronbach's alpha, item analysis and validity of tests. Sometimes these topics were treated in a general methodology course. Then you must show by providing documents detailing the contents of the course material that a substantial amount of time was devoted to these topics.					
For example see University of Groningen course <a href="#">Test Theory and Application</a> .					
<b>Test theory</b>		<b>5 EC</b>			<b>5 EC</b>

**Statistics: at least 15 EC in which you were at least taught on the following topics (in reasonable depth):**

- Basic descriptive statistical techniques
- Basic graphical statistical techniques
- Basic inferential statistical techniques (confidence intervals, significance testing)
- Nonparametric statistics
- Simple and Multiple regression
- Logistic regression
- ANOVA (One- and Two way designs)
- Repeated measures ANOVA
- ANCOVA
- Moderator analysis (= regression analysis including interactions of quantitative predictors)

Mere application of statistical techniques within research methodology or other courses, or within a thesis is not taken into account for the 15 EC. Also note that psychometric techniques for determining estimates of test reliability or validity (e.g. factor analysis) are not taken into account here either.

The descriptions you give here must make clear to us which of the above techniques you master. Please highlight them (e.g. by marking such terms in yellow, as in the example course descriptions that you can find at the end of this document). **Note**, if your university's descriptions don't mention these, you must add contents of course material (e.g., a course syllabus, or lecture slides), so that the admission board can see that you really were taught *all the above specific techniques*.

For example see University of Groningen courses [Statistics Ia](#), [Statistics Ib](#), [Statistics II](#) and [Statistics III](#).

<b>Statistics Ia</b>		<b>5 EC</b>			<b>5 EC</b>
<b>Statistics Ib</b>		<b>5 EC</b>			<b>5 EC</b>
<b>Statistics II</b>		<b>5 EC</b>			<b>5 EC</b>
<b>Statistics III</b>		<b>5 EC</b>			<b>5 EC</b>

**Psychological Research methodology: Theory and Practice: at least 10 EC**

This should include:

- Theoretical concepts and research ethics in research methodology.
- Practical training in carrying out a full research project.

This includes; deriving and formulating a research question, designing a study (which should be at least partially quantitative), collecting data, analyzing results, reporting the whole project, finishing with a discussion and conclusion section.

Please give full details on the courses on research methodology that you followed. Many students wrote a bachelor thesis or a similar report on an empirical study in which all the above research steps of the process were followed. Therefore, a very good way of proving that you have had sufficient training in practical research skills in which you covered all steps is to **UPLOAD A COPY OF YOUR (DRAFT) THESIS OR A RESEARCH REPORT WITH YOUR**

APPLICATION (EVEN IF IT IS NOT IN ENGLISH).

**Note: For Clinical Forensic Psychology & Victimology a thesis of at least 9 ECs is a strict requirement, and you must upload it.**

For your information, see University of Groningen courses [A Theoretical Introduction to Research Methods](#), [Research practicum](#) and [Research methods: theory and ethics](#).

<b>Research methods: theory and ethics</b>		<b>5 EC</b>			<b>5 EC</b>
<b>Research practicum</b>		<b>5 EC</b>			<b>5 EC</b>
<b>Bachelor thesis</b>		<b>10 EC</b>			<b>10 EC</b>

**Theory/Philosophy of Science and/or History of Psychology: at least 5 EC.**

Sometimes these topics are treated briefly in Introductory courses only. That is not enough to satisfy the requirements. If these topics have been treated within other courses, then you must show by documents detailing the contents of the course material that a substantial amount of time (summing up to 5 EC) was devoted to these topics.

For example see University of Groningen courses [Theory of Science](#) and [History of psychology](#)

<b>Theory of Science</b>		<b>5 EC</b>			<b>5 EC</b>

**Please add the course descriptions below, in the same order as listed in the table above.**

(please include links for verification in actual checklist)

**PSBE2-24 Introduction to Clinical Neuropsychology 5 EC**

Introduction to Clinical Neuropsychology

Leerdoelen After the course, the student will know and understand the possible consequences of brain damage for:

- sensation and perception
- attention and visuo-spatial functions
- executive functions
- sensorimotor system
- memory
- language
- emotion
- personality

Omschrijving The course provides an overview of the relationship between brain and behaviour from a (clinical) neuropsychological perspective. The consequences of different types of brain dysfunction and brain damage are described in terms of neuropsychological functional impairments. The students learn about the clinical manifestations of more common neuropsychological syndromes after brain damage, how these syndromes can be

assessed and impairments treated. Various case reports are presented to clarify the course contents and to illustrate how scientifically sound knowledge is translated into the applied field. These case reports also help students understand the impact neuropsychological syndromes can have on daily life.

### **PSB3E-CN01 Clinical Neuropsychology 5 EC**

Learning outcomes After the course students know:

- different forms of brain pathologies (e.g. traumatic brain injury, brain tumours, degenerative disorders and epilepsy),
- brain abnormalities underlying neurological disorders,
- clinical presentations and neuropsychological consequences of various neurological conditions, as well as mental disorders,
- methods for the assessment of neuropsychological impairments,
- approaches to the treatment of patients with neuropsychological problems due to neurological conditions and psychiatric disorders,
- consequences of neuropsychological impairments for patients and their families,
- the impact of lifestyle factors in the context of clinical neuropsychology.

Overview In this lecture the neuropsychological consequences of brain pathology will be discussed. The main focus will be placed upon common neuropsychological impairments and their impact on patients and families. Furthermore, a range of methods for the assessment and treatment of neuropsychological impairments will be introduced. Moreover, the neuropsychological profile of a range of neurological disorders including traumatic brain injury, stroke, brain tumour and epilepsy will be discussed. Contents will be illustrated by numerous case reports of patients with neurological conditions. The main emphasis will be on adult patients.

### **PSB3E-CN03 Developmental Neuropsychology 5 EC**

Developmental Neuropsychology

Learning outcomes Course Learning goals:

1. Understand the basic goals and principles of child neuropsychological assessment and intervention
2. Describe the biopsychosocial influences on brain development and their implications for child neuropsychological practice
3. Characterize the pre- and postnatal neurodevelopmental stages of the brain and their relation to psycho-developmental stages
4. Know the general diagnostic and intervention procedures for common childhood disorders affecting brain development
5. Explain how brain insults, trauma or intoxication at different developmental stages influence neurodevelopment and neuropsychological outcomes
6. Describe the etiology and neuropsychological outcomes of several common genetic, metabolic, structural, epileptic and developmental brain disorders in childhood
7. Reflect about clinical cases based on knowledge about the biopsychosocial dimensions of neurodevelopment and on the principles of assessment and intervention

Overview This course introduces the discipline of 'developmental neuropsychology'. Students will learn about the basic principles of neuropsychological assessment and intervention techniques in childhood, and how these differ from adulthood. The biopsychosocial model is central to this discipline in explaining long-term (neuropsychological) outcomes. Students will familiarize themselves with the general diagnostic and intervention procedures for common childhood disorders affecting brain development, including (but not limited to) preterm birth, traumatic brain injury, epilepsy, autism spectrum disorders, fetal alcohol spectrum disorders, Down syndrome and diabetes. Alterations in neurodevelopment and neuropsychological outcomes of these disorders are the main focus of this course.

### **PSB3E-KP01 Psychopathology: symptoms, classification and diagnosis 5 EC**

Psychopathology: symptoms, classifications and diagnosis

Learning outcomes After this course the student:

- Can describe the primary purposes of the DSM-5 and the pros and cons of using the DSM-5
- Can describe the clinical presentation of the psychological disorders as outlined in the DSM-5
- Can recognize and name the classifications and corresponding symptoms according to the DSM-5
- Can explain which (differential) classifications should be considered based on a case example
- Can name what diagnostic criteria still need to be obtained in order to draw conclusions about the absence or presence of a classification, given a case description

Overview In this course we will provide an in depth review of a broad spectrum of psychopathological conditions as defined in the leading DSM-5. The DSM-5 classification of mental disorders and the criteria for classifying these conditions will be presented. After this course you will be able to apply the DSM-5 system in determining classification of psychopathological conditions. The pros and cons of a diagnostic classification system like the DSM-5 will be discussed as well. In the lectures several (guest)lecturers with a clinical background demonstrate the characteristic features of (common) psychopathological disorders. Dvd- and patient material will be used to illustrate these conditions.

### **PSBE1-01 Introduction to psychology 5 EC**

Learning outcomes Upon successfully completing this course, students:

- know the most important definitions and terms in psychology
- know the different areas of specialization within the field of psychology, and how these are interconnected
- know the most important psychological theories and their empirical support
- can put statements made about psychology, either made within the broader programme, or outside the programme, in a scientific frame of reference.

Overview This course considers behaviour from perspectives ranging from its biological substrate to social interactions. It thus covers topics from everyday cognition to major disorders, and it emphasizes both the techniques that psychologists use and the meaning of the findings in the context of larger ideas.

Compulsory literature

Psychological Science (5th ed.) Norton. Gazzaniga, M., Heatherton, T., & Halpern, D. (2015)

<https://www.rug.nl/ocasys/gmw/vak/show?code=PSBE1-01>

### **PSBE1-02 Social and cross-cultural psychology 5 EC**

Learning outcomes By the end of this course students:

- have insight into the many different manners in which thoughts, feelings and behaviors are influenced by others,
- understand the influence of culture on social psychological processes,
- can summarize the characteristics of, as well as knowing the main theories, research and scientists of the different areas of social psychology (e.g., social cognition, intergroup relations),

- understand social psychological concepts by relating different theories and areas of social psychology to each other,
- can apply their knowledge of social and cross-cultural psychology to analyze societal examples,
- can formulate societal implications of social and cross-cultural psychology,
- are aware of the historical development of social and cross-cultural psychology (note that this part of the course is largely covered in the lectures rather than the book).

**Overview** The course gives students a broad introduction into the major themes of social and cross-cultural psychology. The lectures will cover the many ways in which we can be influenced by other people and the social environment we live in. The first section of this course will look at the social cognitive processes that shape our perceptions of ourselves and others, and determine our behaviours, including basic social cognition (how we categorize our environment), social perception (how we see others), the self (how we see ourselves), attitudes (how we form/change our opinions) and social influence (when and how we are influenced by others). In the second section of this course the focus lies on the social relations between people, such as prosocial behavior (when do we help others), interpersonal relations (when and why are we attracted to others), group processes (how do we interact within groups) and intergroup relations (why do we have intergroup conflict, why are people prejudice and how do they respond to discrimination).

Our behavior always takes place within a certain cultural context. Social psychological processes can help shape culture (for example via communication). Culture can also influence how certain social psychological processes take place (for example how we perceive ourselves, other individuals and groups). Throughout the course we will, where relevant, focus on cultural variations in behavior. In addition one of the lectures will focus on this theme.

**Compulsory literature**

An introduction to social psychology (6th edition), BPS Blackwell Miles Hewstone, Wolfgang Stroebe, Klaus Jonas

<https://www.rug.nl/ocasys/gmw/vak/show?code=PSBE1-02>

### **PSBE1-05 Personality and individual differences 5 EC**

**Learning outcomes** At the end of the course students can:

- define and understand the overarching concept of personality,
- summarize and have an understanding of the characteristics of the main theories, research and scientists of the different perspectives on personality (trait, biological, intrapsychic, cognitive/experiential),
- relate research findings to the different perspectives,
- indicate whether research confirms or disconfirms a certain perspective,
- provide an overall definition of a personality disorder,
- name and elaborate on the different types of personality disorders,
- evaluate the different perspectives on personality and name both strong and weak points of each perspective,
- apply their knowledge of both personality perspectives and personality disorders such that they can analyze societal examples based on (one of) the perspectives,
- formulate societal implications of the different perspectives.

**Overview** The course gives students a broad introduction into the major themes that govern personality psychology. The lectures will define personality and give a comprehensive overview of the different perspectives on personality (trait, biological, intrapsychic, cognitive/experiential,

learning). In addition, the lectures will focus on a number of main themes that are central to research on personality and individual differences (e.g., intelligence, happiness, personality disorders).

Compulsory literature

Personality Psychology Domains Of Knowledge About Human Nature. Boston: McGraw-Hill. Larsen, R.J., & Buss, D.M. & Wismeijer, A. (2013, 5th edition).

<https://www.rug.nl/ocasys/gmw/vak/show?code=PSBE1-05>

### **PSBE2-23 Cognitive Psychology 5 EC**

Learning outcomes After successful completion of this course:

- you will have a solid understanding of the central topics, theories, and models of human cognitive functions (such as perception, language, memory, learning and decision making),
- you will have knowledge of a broad range of modern methods and techniques used in cognitive psychology; and will know about the strengths and weaknesses of the discussed methods,
- you will be able to apply the gained knowledge in the analysis and description of human cognitive behavior.

Overview Cognitive Psychology focusses on those mental functions that are the foundations of human behavior: perception, attention, problem solving, reasoning, language, learning and memory, motivation, emotion, decision making, etc. The goal of cognitive psychology is to gain insight in and therefore understand how these functions shape behavior, and answer questions like: "Why do we think or reason like we do? What is knowledge? Is perception just objective observation of the world around us? Why do we make errors, and how can we prevent ourselves from making errors? How to optimize the learning of new knowledge? Are we indeed so bad at multitasking?". Recent years have seen a development towards explaining or understanding human cognitive performance in terms of how mental functions are implemented in the brain, and how these different functions interact to support complex human behavior, topics which will also be discussed.

In this course we'll explore "the science of the human mind", and discuss how we, using well-controlled experiments, can increase our knowledge about mental functions (and their disorders), and how these insights can be used in applied settings.

Compulsory literature

Cognition: Exploring the Science of Mind (2012, 6th Edition). New York, London: W.W. Norton & Company. Reisberg, D

<https://www.rug.nl/ocasys/gmw/vak/show?code=PSBE2-23>

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**Learning outcomes** This course focuses on the development of the following learning outcomes, as stated in the degree profile: A3, A5, B1-3, C2, D2

**Overview** This second course examines how the struggle among competing advocates shapes the outputs of government. It considers how conditions become problems for government to solve, why some political arguments are more persuasive than others, why some policy tools are preferred over others, and whether policies achieve their goals. Students will investigate the interactions among elected officials, think tanks, interest groups, the media, and the public in controversies over global warming, urbanisation, health care, the digital society, education and other issues related to the global goals. Western and non-Western perspectives are both considered.

**Literature:** A course reader with selected literature will be provided

### **PSBE2-11 Communication and diagnostic skills 5 EC**

**Learning outcomes** At the end of this course, students can:

- structure a conversation based on various conversation models used in psychological interviews,
- practice professional communication skills,
- discuss the use of assessment tools with a client.

**Overview** This practicum consists of twelve three-and-a-half-hour weekly sessions spread over the two blocks of Semester 1. By means of group discussions, role-playing and giving and receiving concrete feedback (i.e., by using video recordings) students will learn to methodologically hold psychological interviews, from the relationship-building phase to the assessment phase.

**Compulsory literature**

Learning the Art of Helping, 6th edition (Already used in BE1-17, Dialogue and Group Skills) Young, M.E.

<https://www.rug.nl/ocasys/gmw/vak/show?code=PSBE2-11>

### **PSBE1-08 Statistics Ia 5EC**

After the course, the student knows:

- how to determine and interpret the measurement scale of data,
- summary statistics to describe the central tendency and spread of data,
- graphical summaries to visually represent the central tendency and spread of data,
- summary statistics and graphical summaries to understand the association between variables,
- the basic laws of probability, and how to use them,
- how to model count data using the binomial distribution,
- how to describe the sampling distribution of the sample mean
- how to make all calculations by hand without a formula card
- to interpret output from statistical software programs SPSS, R, or comparable programs

Statistical data are the primary means by which hypotheses are tested and inferences are drawn in the social sciences. When a psychologist runs an experiment to learn about memory, when a sociologist surveys people about their social connections, and when a biologist measures how allele frequency changes over time in a population of bacteria, the results are data. Knowing how to interpret and learn from data is critical to being a successful researcher. Statistics 1A introduces students to data: its properties, how to describe it, how to visualize it, and an introduction to modeling data using probability theory. The knowledge gained in Statistics 1A will lay the foundation for Statistics 1B, in which students will learn the basics of

statistical inference.

Compulsory literature

Introduction to the practice of statistics, 9th edition      Moore, McCabe, Craig      9781319153977 II.

<https://www.rug.nl/ocasys/gmw/vak/show?code=PSBE1-08>

### **PSBE1-09 Statistics Ib 5 EC**

After the course, the student knows:

- the basic logic of classical statistical inference,
- for a given basic research design, what statistical procedures to apply,
- the mechanics of simple statistical procedures for simple designs,
- the assumptions underlying these statistical procedures,
- procedures to apply if these assumptions are suspected to be false,
- how to avoid common conceptual errors about statistical inference,
- the drawbacks of classical statistical inference,
- can apply inferential statistics for means and proportions,
- can interpret reported results of statistical procedures on means and proportions
- how to make all calculations by hand without a formula card
- to interpret output from statistical software programs SPSS, R, or comparable programs

In science, we are often concerned with large populations. For instance, an ecologist might wonder what proportion of the population of a particular plant is afflicted by a disease, a political scientist might wonder what proportion of people in a given country endorse a particular attitude, and a psychologist might wonder whether the population of children that participate in a reading intervention subsequently have improved reading ability. In real life, however, we have to settle for small samples from the population, because testing an entire population is often not feasible. Statistics is the study of how one draws inferences from a sample, which we observe, to a population, which we cannot observe. Statistics is therefore the primary way by which scientists obtain knowledge in the sciences. Statistics 1B introduces students to foundational ideas of statistical inference: how can we test a hypothesis about populations? How can we estimate means of populations? How can we quantify our uncertainty about the population, given our sample? Statistics 1B lays the foundation for students to understand how statistical inference happens in practice.

### **PSBE2-07 Statistics II 5 EC**

Learning outcomes After successful completion of this course the student:

- can compute and interpret statistical tests and confidence intervals,
- can compute and report power and effect sizes
- can fit and analyze results from the ANOVA model (one- and two-way),
- can fit and analyze results from the regression model (simple and multiple),
- can interpret interaction effects (categorical x categorical in ANOVA/regression, continuous x continuous in regression),
- can create and use code variables,

- can fit and analyze results from the logistic regression model,
- is able to read research papers using some of these methodologies discussed in the course.

**Overview** The central theme of this course is the deep understanding of statistical inferential models such as ANOVA and regression. After having learned how to describe, process, and perform basic inference on empirical data (courses Statistics Ia and Statistics Ib), students will now be introduced to some of most widely used statistical models in the social sciences. The knowledge to be acquired in this course is fundamental to enable students to properly analyze data and to make sound inferences. This will have a direct impact on the students' success on other courses in the curriculum such as Research Methods and the bachelor thesis, in which data will most likely need to be analyzed.

The topics covered by this course include analysis of variance, simple and multiple regression analysis, **logistic regression**, and **nonparametric tests**. In all cases the goal is to show how each technique can be applied, under which conditions the analyses hold, and how the results can be interpreted and reported.

The basic principles of these techniques will be discussed and explained in the lectures. During the practical classes, exercises will be made (using software: SPSS, JASP and/or R, and manually) in order to gain insight in how to apply the methods in practical situations. Practical classes are built with two goals in mind: Think about the theoretical framework of the analysis being conducted, and learn how to conduct it in practice. Computer assignments requiring students to apply some of the statistical techniques learned in the course to data will also be provided in the practical classes.

**Compulsory literature**

Applying regression & correlation Miles, J., & Shevlin, M.

Statistical Concepts (4th ed.) Lomax, R. G., & Hahs-Vaughn, D. L.

<https://www.rug.nl/ocasys/gmw/vak/show?code=PSBE2-07>

### **PSBE2-12 Statistics III 5 EC**

**Learning outcomes** After this course students can:

- apply techniques of regression analysis and analysis of variance in research of social sciences,
- analyse datasets with techniques of regression analysis and analysis of variance,
- interpret reported results of regression analysis and analysis of variance critically .

**Overview** Continuing where Statistics II ended, this course will discuss some new topics as well as some known topics in more depth. There will be five main topics: Multiple regression, logistic regression, **ANCOVA**, random-effects ANOVA, and **repeated measures ANOVA**.

The theory behind each topic will be introduced during the lectures, after which the methods will be applied when writing two reports.

<https://www.rug.nl/ocasys/gmw/vak/show?code=PSBE2-12>

### **PSBE2-06 Test theory 5 EC**

**Learning outcomes** After this course students can:

- formulate the aim of psychological testing,
- formulate the principles for the quality of psychological tests,
- name the major psychological tests used in different fields of psychological testing such as intelligence testing, personality testing and testing in the clinical field,
- give a basis for the use of these tests,

- reproduce the principles of classical test theory,
- formulate different types of validity and reliability estimation methods
- calculate elementary psychometric indicators to assess the quality of tests: item-total correlations and reliability estimation methods.

**Overview** This course gives an overview of the central topics that are important for understanding how tests are developed and validated. Topics include: historical developments and applications of psychological tests, the administration of tests, reliability and validity, factor analysis, and new developments in the field of test construction.

**Compulsory literature**

Psychological testing: A practical introduction. 3th edition 2013 Thomas P. Hogan

<https://www.rug.nl/ocasys/gmw/vak/show?code=PSBE2-06>

### **PSBE2-08 Research methods: theory and ethics 5 EC**

**Learning outcomes** By the end of the course, students can:

- discuss the nature of the scientific process and how it applies to Psychology,
- discuss the principles of experimental design,
- highlight the ethical issues involved in conducting psychological research,
- discuss the methods and techniques involved in data acquisition and - processing, in psychological research,
- identify the research designs best suited to answering a range of research questions.

**Overview** This course reviews and extends the material introduced in other courses concerning experimental design and data analysis. On the basis of case studies, pitfalls in design are discussed. Emphasis is placed on finding the appropriate design for a given research question, the practicalities of data handling, and the ethical responsibilities of the researcher.

<https://www.rug.nl/ocasys/gmw/vak/show?code=PSBE2-08>

### **PSBE2-09 Research practicum 5 EC**

**Learning outcomes** After the course students are:

- able to evaluate the merits and limitations of different research methods, with practical examples and applications,
- able to report background, methods, analysis, and conclusions of a Psychological study in APA format,
- able to design hypotheses and studies to follow up on the interpretation of available data,
- able to present data in concise and informative ways,
- familiar with the research techniques within the department and with the researchers themselves.

**Overview** Students perform research under the guidance of a teacher, where the following skills are addressed:

- critically searching, reading and evaluating literature,
- formulating appropriate research questions and hypothesis,
- designing a quasi-experimental research project,
- collecting data,
- analyzing data (descriptive statistics, ANOVA and item analysis), and
- individually presenting the results, both in writing and verbally.

<https://www.rug.nl/ocasys/gmw/vak/show?code=PSBE2-09>

### **PSBE2-05 Theory of Science 5 EC**

Learning outcomes After this course students can:

- describe classical stances on what science is and how it develops,
- distinguish and discuss the three basic views on facts and reality, namely, realism, instrumentalism, and constructivism,
- analyze how science and society influence each other, discussing recent examples such as the free will or enhancement debates,
- describe and reflect on the neuroscience turn in psychology,
- distinguish and apply basic ways of understanding classification in the social sciences and its consequences, especially with respect to mental disorders.

Overview According to early twentieth-century philosophers of science, science represents objectively observable facts and airtight assumptions about those facts. However, the question of what objective observation and airtight assumptions actually were, immediately evoked different opinions. The debate on what science is continues.

This course teaches students to think about such questions as: Must psychological research methods be adapted to a multicultural society? Which models try to explain the development of sciences in general and what does this mean for scientists? Do neuro-imaging techniques deliver snapshots of the mind? Will psychology as a science be replaced by neuroscience in the future?

<https://www.rug.nl/ocasys/gmw/vak/show?code=PSBE2-05>