Course Title
Perception

Course Number
PSYCH-UA.9022001

SAMPLE SYLLABUS

Lecturer Contact Information
Dr. Martin Rolfs
martin.rolfs@nyu.edu

Course Details
Tuesdays, 3:30pm to 6:15pm
Location of class: NYUB, Academic Center, Room "Pankow" (tbc)

Prerequisites
Prerequisite for NYU Students: PSYCH-UA 1 / Introduction to Psychology

Units earned
4

Course Description
How do we construct a conception of physical reality based on sensory experience? In this course, we will survey basic facts, theories, and methods in the study of sensation and perception. The major emphasis is on vision and audition, but other modalities will also be covered in some detail. Representative topics include receptor function and physiology; color; motion; depth; psychophysics of detection, discrimination, and appearance; perceptual constancies; adaptation, pattern recognition, and the interaction of knowledge and perception.

Course Objective
The objective of this course is to help you master the fundamental facts and concepts of perceptual psychology and sensory neuroscience. This is an interdisciplinary field of science, crossing the boundaries between psychology, biology, physics, and engineering.

An effort is made, therefore, to present the main concepts of perception in a way that will introduce you to how scientific research is done and to stimulate your scientific curiosity. Some of the concepts covered in this course will be useful to you in various professions that you might pursue. For example, the perceptual problem of eyewitness accounts of crimes is of interest to the legal community; the physiology of animal sensory systems is of interest to the medical community.

Assessment Components
The final grade will be composed of a weighted average, with the following weights assigned to individual assessment components:

- 15% Class Participation
- 15% Response Papers
- 35% Midterm exam
- 35% Final exam

Failure to submit or fulfill any required component may result in failure of the class, regardless of grades achieved in other assignments.

**Participation:**
Students are expected to prepare each meeting by reading the specified material, to be present at all sessions of the course, to engage in and complete exercises and quizzes, and to actively contribute to discussions.

**Response papers:**
Response papers will summarize and discuss a scientific article on the general subject of Perception. I will give you a short list of prompts from which you can choose one ten days prior the submission deadline, at the latest. PDFs will be online on NYU Classes, printouts will be provided upon request. Response papers should be 2 pages long (A4, 2 cm margin on each side, double-spaced, Times New Roman, Font Size 12). They should summarize the method and the findings of the research paper, give at least one interpretation of the result and discuss potential follow-up studies. Papers must be submitted by midnight on the respective due date.

**Exams:**
During the week before the fall break (midterm) and in the last session of the semester (final), you will write exams. These will include both multiple-choice and open-answer questions. You will have 90 min to complete your exam.

**Mini-quizzes:**
We will have ungraded (and anonymous) mini-quizzes at the end of each session that will give you the opportunity to quickly let me know if some topic was unclear and needs some extra coverage. Please use this opportunity. If you must cram before an exam, please don't expect me to cram with you. In the days prior to an exam, I will be available as usual for office hours but not for extra time to help you catch up if you've fallen far behind. It would not be fair to your fellow students if you were to monopolize office hours and sessions for a long period of time right before an exam.

Failure to submit or fulfill any required component may result in failure of the class, regardless of grades achieved in other assignments

**Assessment Expectations**

**Grade A:** The student makes excellent use of empirical and theoretical material and offers well-structured arguments in their work. The student writes comprehensive essays / answers to exam questions and their work shows strong evidence of critical thought and extensive reading.

**Grade B:** The candidate shows a good understanding of the problem and has demonstrated the ability to formulate and execute a coherent research strategy.
**Grade C:** The work is acceptable and shows a basic grasp of the research problem. However, the work fails to organize findings coherently and is in need of improvement.

**Grade D:** The work passes because some relevant points are made. However, there may be a problem of poor definition, lack of critical awareness, poor research.

**Grade F:** The work shows that the research problem is not understood; there is little or no critical awareness and the research is clearly negligible.

**Grade Conversion**
Your lecturer may use one of the following scales of numerical equivalents to letter grades:

- B+ = 87-89
- C+ = 77-79
- D+ = 67-69
- F = below 65

- A = 94-100
- B = 84-86
- C = 74-76
- D = 65-66

- A- = 90-93
- B- = 80-83
- C- = 70-73

Alternatively:

- A= 4.0
- A- = 3.7
- B+ = 3.3
- B = 3.0
- B- = 2.7
- C+ = 2.3
- C = 2.0
- C- =1.7
- D+ = 1.3
- D = 1.0
- F = 0.0.

**Attendance Policy**
Participation in all classes is essential for your academic success, especially in courses that meet only once per week. Your attendance in both content and language courses is required and will be checked at each class meeting. As soon as it becomes clear that you cannot attend a class, you must inform your professor by e-mail immediately (i.e. before the start of your class). Absences are only excused if they are due to illness, religious observance or emergencies. Your professor or NYU Berlin’s administration may ask you to present a doctor's note or an exceptional permission from NYU Berlin's Director or Wellness Counselor as proof. Emergencies or other exceptional circumstances must be presented to the Director. Doctor's notes need to be submitted to the Academics Office, who will inform your professors. Doctor's notes need to be from a local doctor and carry a signature and a stamp. If you want the reasons for your absence to be treated confidentially, please approach NYU Berlin's Director or Wellness Counselor.

Unexcused absences affect students' grades: In content courses each unexcused absence (equaling one week's worth of classes) leads to a deduction of 2% of the overall grade and may negatively affect your class participation grade. In German Language classes two or three (consecutive or non-consecutive) unexcused absences (equaling one week's worth of classes) lead to a 2% deduction of the overall grade. Three unexcused absences in one content course and five unexcused absences in your German language course may lead to a Fail in that course. Furthermore, your professor is entitled to deduct points for frequent late arrival or late arrival back from in-class breaks. Being more than 15 minutes late counts as an unexcused absence. Please note that for classes involving a field trip, transportation difficulties are never grounds for an excused absence. It is the student’s responsibility to arrive in time at the announced meeting point.
Exams, tests and quizzes, deadlines, and oral presentations that are missed due to illness always require a doctor's note as documentation. It is the student's responsibility to produce this doctor's note and submit it to the Academics Office; until this doctor's note is produced the missed assessment is graded with an F and no make-up assessment is scheduled. In content classes, an F in one assignment may lead to failure of the entire class.

**Attendance Rules on Religious Holidays**
Members of any religious group may, without penalty, excuse themselves from classes when required in compliance with their religious obligations. Students who anticipate being absent due to religious observance should notify their lecturer AND NYU Berlin's Academics Office in writing via e-mail one week in advance. If examinations or assignment deadlines are scheduled on the day the student will be absent, the Academics Office will schedule a make-up examination or extend the deadline for assignments. Please note that an absence is only excused for the holiday but not for any days of travel that may come before and/or after the holiday. See also [http://www.nyu.edu/about/policies-guidelines-compliance/policies-and-guidelines/university-calendar-policy-on-religious-holidays.html](http://www.nyu.edu/about/policies-guidelines-compliance/policies-and-guidelines/university-calendar-policy-on-religious-holidays.html)

**Late Submission of Work**
(1) Written work due in class must be submitted during the class time to the professor.

(2) Late work should be submitted in person to the lecturer or to the Academics Office, who will write on the essay or other work the date and time of submission, in the presence of the student. Another member of the administrative staff may also personally accept the work, and will write the date and time of submission on the work, as above.

(3) Work submitted late receives a penalty of 2 points on the 100 point scale for each day it is late (excluding weekends and public or religious holidays), unless an extension has been approved (with a doctor's note or by approval of NYU Berlin's administration), in which case the 2 points per day deductions start counting from the day the extended deadline has passed.

(4) Without an approved extension, written work submitted more than 5 days (excluding weekends and public or religious holidays) following the submission date receives an F.

(5) End of semester essays must be submitted on time.

(6) Students who are late for a written exam have no automatic right to take extra time or to write the exam on another day.

(7) Please remember that university computers do not keep your essays - you must save them elsewhere. Having lost parts of your essay on the university computer is no excuse for a late submission.

**Provisions for Students with Disabilities**
Academic accommodations are available for students with documented disabilities. Please contact the Moses Center for Students with Disabilities at 212-998-4980 or see their website ([https://www.nyu.edu/students/communities-and-groups/students-with-disabilities.html](https://www.nyu.edu/students/communities-and-groups/students-with-disabilities.html)) for further information.
Plagiarism Policy
The presentation of another person's words, ideas, judgment, images or data as though they were your own, whether intentionally or unintentionally, constitutes an act of plagiarism. Proper referencing of your sources avoids plagiarism (see as one possible help the NYU library guide to referencing styles: http://nyu.libguides.com/citations).

NYU Berlin takes plagiarism very seriously; penalties follow and may exceed those set out by your home school. Your lecturer may ask you to sign a declaration of authorship form.

It is also an offense to submit work for assignments from two different courses that is substantially the same (be it oral presentations or written work). If there is an overlap of the subject of your assignment with one that you produced for another course (either in the current or any previous semester), you MUST inform your professor.

For a summary of NYU Global's academic policies please see: www.nyu.edu/global/academic-policies

Required Text(s)
Electronic Resources (via NYU Classes / NYU Library)

No need to purchase. Your instructor will loan a copy that you need to return in the end of the semester. Additionally, at least one copy of the book's current edition is kept in the Reading Room of NYU Berlin's Academic Center, for you to read in the center but not to take out.

NYU Berlin Library Catalogue: http://guides.nyu.edu/global/berlin or follow the link on NYU Berlin's website (Academics/Facilities & Services).

Supplemental Text(s) (not required to purchase)
For those of you interested in additional general reading, these books have been recommended by NYU faculty (you will find some of them in NYUB's Reading Room):

Dubin & Somparrac, How the Brain Works, Blackwell.
Hoffman, Visual Intelligence, Norton.
Gregory, Eye and Brain, McGraw-Hill.
Hubel, Eye, Brain, and Vision, Freeman.
Churchland and Sejnowski, The Computational Brain, MIT Press.
Churchland, The Engine of Reason, the Seat of the Soul, MIT Press.
Bruce, Green, and Georgeson, Visual Perception, Erlbaum.
Kuffler, Nicholls, and Martin, From Neuron to Brain, Sinauer.
Nalwa, A Guided Tour of Computer Vision, Addison-Wesley.

**Internet Research Guidelines**
To be discussed in class.

**Additional Required Equipment**
n/a

**Schedule**

**Session 1 – 05 Sep 2017** *(Note that course starts in the 2nd week of the semester!)*

*Introduction to Sensation and Perception*
(Motivation to study Perception, Physiology of Perception)
Required reading: None.

**Session 2 – 12 Sep 2017**

*Psychophysics and the Signal Detection Theory*
(Psychophysical methods and their fundamental assumptions)
Required reading: Goldstein Chapter 1/Appendix

**Session 3 – 19 Sep 2017**

*Optics of the Eye and the Retina*
(Transduction, Adaptation, Basic Visual Functions, Lightness, Acuity)
Required reading: Goldstein Chapter 3

**Session 4 – 26 Sep 2017**

*Visual Cortex and Seeing in 3D*
(Topography, Cortical Receptive Fields and Columnar Structure, Binocular Vision and Space Perception)
Required reading: Goldstein Chapter 4

*Important: First response paper due.*

**Session 5 – 29 Sep 2017** *(Note: this is a make-up day for October 3, a public holiday)*

*Color and Motion*
(Physiology and Perception of Color and Motion)
Required reading: Goldstein Chapters 8 and 9

**Session 6 – 10 Oct 2017**

*Midterm Exam*
Topics: Content of sessions 1 through 5
17 Oct 2017 – Fall Break – No Class

Session 8 – 24 Oct 2017
  *Guest lecture by Richard Schweitzer on Time Perception*
  Required reading: none.

Session 10 – 07 Nov 2017
  *Guest lecture by Dr. Guido Hesselmann on Visual Recognition*
  (Objects and Scene Perception, Animacy, Causality, and Events)
  Required reading: Goldstein Chapter 5, Scholl & Tremoulet, TiCS, 2000

Session 9 – 10 Nov 2017 *(Note: this is a make-up day for October 31, a public holiday)*
  *Visual Selection*
  (Attention and Eye Movements — including a visit at Dr. Rolfs’ eye movement lab)
  Required reading: Goldstein Chapter 6, Findlay & Gilchrist, 2003, Chapter 1

  **Note:** Session 9 takes place at the Bernstein Center for Computational Neuroscience, located on Campus Nord of the Humboldt-Universität *(Philippstr. 13, Haus 6, Room 114). The session starts at 3pm.*
  Find out here how to get there: [https://www.bccn-berlin.de/Home/Contact/How_to_reach/](https://www.bccn-berlin.de/Home/Contact/How_to_reach/)

Session 11 – 14 Nov 2017
  *Hearing Basics*
  (Sound, the Ear, Pitch, Loudness)
  Required reading: Goldstein Chapter 11

Session 12 – 21 Nov 2017
  *Auditory Processing*
  (Auditory Pathways and Localization, Auditory Scenes, Speech and Music)
  Required reading: Goldstein Chapters 12 and 13

Session 13 – 28 Nov 2017
  *Guest lecture by Dr. Kathrin Ohla on the Chemical Senses*
  (Taste and Smell)
  Required reading: Goldstein Chapter 15

  **Important:** Second response paper due.
Session 14 – 05 Dec 2017

Guest lecture by Dr. Guido Hesselmann on Consciousness (120 min)
Review session with Dr. Martin Rolfs (45 min)
Required reading: None.

Session 15 – 12 Dec 2017

Final exam
Topics: Content of sessions 8 through 14

Classroom Etiquette

Class and Classwork:
Please read the book (it’s very good!) and come to the lectures (they should be fun)! You are responsible for material covered in the lectures even if it is not in the textbook, and you are responsible for the material in the textbook even if it has not been covered in the lectures. Please ask questions during class. I will try to stop every once in a while, to make sure that everyone is with me. However, it is your responsibility to ask a question, if only to slow me down. Please don’t worry about asking a "stupid" question. Chances are that other students in the class are also confused.

Office Hours:
There are no fixed office hours. I will schedule appointments with you individually upon your request. When asking for an appointment, please send me an email, listing several possible days/times for an appointment, or talk to me after class.

Announcements:
Check the course web pages on NYU Classes (https://newclasses.nyu.edu/) regularly for announcements, information about exams and review sessions, grades, and changes to the schedule. You are responsible for finding out about this information.

Suggested Co-Curricular Activities
None.

Your Lecturer
Dr. Martin Rolfs studied Psychology at Potsdam University (Germany) where he completed his PhD in 2007. As a postdoctoral scientist, he worked at the Université Paris Descartes (France), New York University (USA), and Université Aix-Marseille (France). In 2012, he started his own research group at Humboldt University of Berlin, which investigates processes in active visual perception and cognition. Dr. Rolfs has been teaching courses in perception and cognition for many years, both in the US and in Germany.