Module Description for Perception

Module Code	PSU12070
Module Name	PERCEPTION
ECTS credit weighting	5 ECTS
Semester taught	Semester 1
Module Coordinator/s	Dr Alan O' Dowd, Professor Fiona Newell
Module Learning Outcomes with embedded Graduate Attributes	On successful completion of this course, students will be able to: **LO1.** Describe the structure and function of major sense organs (vision, audition, touch, taste, and smell, including how information is encoded [TI, DC]. **LO2**. Describe the pathways between major sense organs and the brain [TI, DC]. **LO3**. Locate the primary sensory regions of the human cortex and understand their function [TI, DC]. **LO4**. Discuss and evaluate major theoretical approaches involved in our understanding of object, face, and scene perception [TI, DC, CE]. **LO5**. Discuss how neurological conditions provide insight into normal perceptual processes [TI, DC, CE]. **LO6**. Discuss and evaluate major theoretical approaches on the role of attention on perception [TI, DC, CE]. **LO7**. Discuss and evaluate how visual motion is perceived [TI, DC, CE]. **LO8**. Outline and understand major/key issues in developmental perception from infancy to older age [TI, DC]. **LO9**. Understand and describe how individuals differ in the way in which we perceive our world [TI, DC, CE]. **LO10**. Describe the key methodologies used to measure perceptual ability [TI, DC].
Module Content	Perception is the study of how the brain makes sense of the environment through sensory information. In this course, students will discover connections between psychology, physiology and cognitive neuroscience. Lectures cover the visual, auditory, somatosensory, olfactory and gustatory systems, including the structure and function of the sensory organs as well as the brain regions and pathways that support perception. The course will also cover specialised topics including face perception, motion perception, attention and individual differences in perceptual abilities. The course will include discussions of major theories of perception and refer to examples of the effects of brain damage on perceptual abilities, such as face and object recognition. In addition, students develop a basic understanding of behavioural and neuroimaging methods of measuring perception and evaluate the contributions as well as limitations of these approaches. Students can expect the following content across the lectures in this module: 1. Physiology of visual system from eye to brain

2. Visual perception: low- and mid-level processing
3. Physiology of auditory system from ear to brain
4. Sound perception: localisation and sound recognition
5. Speech perception and crossmodal influences
6. Physiology of somatosensory system from skin to brain
7. Tactile and haptic perception
8. Gustation and taste perception
9. Olfaction and smell perception
10. Plasticity in sensory cortices
11. Development of perception across the lifespan
12. Motion perception
13. Visual object and scene perception
14. Face perception and person recognition
15. Selective attention and perception
16. Visual search and change blindness
17. Individual differences in perception

Teaching and Learning Methods[1]

This course is a lecture/discussion course. Readings from a recommended textbook are assigned to provide students with an overview of the topic. In addition, primary source literature will be provided, the reading of which is designed to support depth of understanding on specific topics. Lectures provide context, focus on topics of interest in-depth, discuss topics not included in the readings, and provide additional detail and explanations, including demonstrations and videos. Students will benefit most by following along with the course and asking questions during lecture or offline. There will be time specifically set aside for discussions.

Across lectures, students will be taught to analyse complex systems, recognise and understand relationships, critically evaluate methods and theories, reflect on their own experiences and address problems, within the area of perception/cognitive neuroscience. This aligns with ESD themes and competencies of systems thinking, critical thinking, self-awareness and integrated problem-solving.

The course assessment consists of an exam featuring a combination of short (e.g., MCQ) and long-answer questions. Lectures provide students with foundational knowledge and introduce key concepts and theories. Discussions encourage critical engagement and reflection in a collaborative environment. Provided readings and video materials allow students to reinforce and apply their understanding, supporting deeper engagement with course content. Demonstrations provide applied examples of concepts and methods, helping students connect theory with practice.

[1] Trinity-INC provides tips and resources on how to make your curriculum more inclusive.

These strategies accommodate diverse learning styles and promote both active and independent learning. The strategies support the development of knowledge, critical thinking, analytical skills, and conceptual understanding required to meet LOs. The combination of structured contact hours and guided independent study prepares students for the course final exam which requires comprehension, synthesis, and application of course material across the semester.

Assessment Details[2]
Please include the following:

- **Assessment Component**
- **Assessment description**
- **Learning Outcome(s) addressed**
- **% of total**

It is recommended that module co-ordinators consider assessment types used across the year to ensure varied assessment methods.

Please describe both formative and summative assessment components, noting how the assessment(s) enable learning and enable demonstration of the achievement of the learning outcomes. Please include % weighting of summative assessment components, which should be carefully balanced between groupwork and individual components.

Each Assessment component should be clearly aligned to the learning outcomes. Please outline each assessment component, and the assigned LO(s) in the table below.

Assessment Component	Assessment Description	LO Addressed	% of total
Exam	Knowledge of the content of the course, including conceptual and theoretical approaches, will be assessed by a take-home (open-book) exam, comprising a range of questions requiring long and short (e.g., MCQ) answers. This exam will be taken during exam week.	LO1-10	100%

[2] https://www.tcd.ie/academicpractice/resources/assessment/

Academic integrity will be supported through clear communication of expectations regarding appropriate academic conduct, including the responsible and ethical use of generative AI tools. Students will be informed about institutional policies on plagiarism, collusion, and AI-assisted work at the beginning of the course and reminded of these expectations throughout the semester. The assessment consists of a final examination that will assess independent knowledge acquisition, critical thinking, and the ability to synthesise material. Long-answer questions will require an application of course knowledge to a novel problem/context.

Contact Hours and Indicative Student Workload[3]

Consider how much time an average student needs to invest in the elective to demonstrate the learning outcomes at threshold level. Take into account attendance and time for preparation, including self-study, for all teaching, learning and assessment associated with the module. Workload should be commensurate with ECTS size, which is equivalent to 100-125 student learning hours.

Contact hours: 22
Independent Study (preparation for course and review of materials): 23
Independent Study (preparation for assessment, incl. completion of assessment): 80

Inclusive Curriculum

All modules should be inclusive for all students who learn differently. Please respond to the following questions (i.e. ensuring the course supports engagement and representation of all students)

	PLEASE TICK
1. Have you reviewed the teaching / assessment methods and materials for possible barriers to learning, e.g. students with English as a second language, disabilities, significant external responsibilities, students with IT issues / requiring specific accessibility software etc.?	☒
2. Have you adapted your resources and teaching materials taking into account Trinity's Accessible Information Guidelines (https://www.tcd.ie/disability/teaching-info/TIC/materials.php)?	☒
3. Does the content of your module address diversity? For example, including a diverse demographic profile of authors, diversity of ideas and perspectives, or representation (e.g. pictures of conditions on different skin tones), or by acknowledgement of the homogenous context of the discipline/topic?	☒

[3] https://www.tcd.ie/academicpractice/resources/assessment_workload/

	4. Highlight at least two ways which your course/module incorporates principles of inclusivity and accessibility into the curriculum design *(i.e. supports engagement and representation of **all** Trinity students, presents information and content in a variety of ways, and offers variety and options of assessment type. See:* Universal Design for Learning - AHEAD *for more information and guidance, and* Inclusive Curriculum - Equality - Trinity College Dublin (tcd.ie) *for insights from Trinity students)*
Indicative Reading List (approx. 4-5 titles)	**Required text(s)** Title: SENSATION & PERCEPTION 7th Edition (2024) ISBN: 9780197663813 Authors: J. Wolfe; K. Kluender; D. Levi; L. Bartoshuk; R. Herz; R. Klatsky; and D. Merfeld Publisher: Sinauer Associates (for Oxford University Press) (Earlier editions, i.e. from 5th Edition, are also suitable for this foundation module.) Supplementary texts Other readings are given as the module progresses. Other supporting materials (e.g. links to TED talks, online resources) will be made available on Blackboard.
Module Pre-requisite	None
Module Co-requisite	None
Are other Schools/Departments involved in the delivery of this module? If yes, please provide details.	No