Jindal School of Liberal Arts & Humanities
India's First Transnational Humanities School

O.P. Jindal Global University
A Private University Promoting Public Service
www.jgu.edu.in

Course code: LH-M-PY14

Course credits: 4

Hours per week: 4

Class Timings: TBA

Instructor: Dr. Angela Ann Joseph

Email: aajoseph@jgu.edu.in

Office hours: TBA

Class Venue: TBA

BIOLOGICAL FOUNDATIONS OF BEHAVIOUR

COURSE DESCRIPTION

This elective course introduces students to the physiological basis of human behaviour and explores fundamental topics of physiological psychology such as neuronal structure and function, neuroanatomy, stages of neurotransmission and the neurobiology underlying various psychopathological conditions. This course will be helpful for students interested in pursuing a masters in clinical psychology, neuroscience or cognitive science as part of their graduate studies. It aims to equip students with an introductory level of theoretical knowledge and understanding of the biological processes that are crucial to the aforementioned areas of study.

LEARNING OUTCOMES

On successful completion of this course, students will be able to:

1. Identify the structures and functions of neurons;
2. Describe the processes involved in the generation and propagation of a neural impulse;
3. Recognise the major anatomical divisions of the human brain;
4. Understand the working principle behind various neuroimaging techniques used in the diagnosis of neurological Illness
5. Explain the biological processes underpinning various psychological disorders.

CONSTRUCTIVE ALIGNMENT BETWEEN TEACHING, LEARNING AND ASSESSMENT

TEACHING STRATEGY/PEDAGOGY	LEARNING OUTCOME	ASSESSMENT
Lectures, Animation videos and Illustrations	Identify the structures and functions of neurons	End Semester Exam In class quick review/ worksheet
Lectures, Animation videos and role play demonstration of a neural impulse (In-class activity)	Describe the processes involved in the generation and propagation of a neural impulse;	End Semester Exam In class quick review/ worksheet
Lecture, Animations and Illustrations	Recognise the major anatomical divisions of the human brain;	End Semester Exam In class quick review/ worksheets
Textual material and educational videos demonstrating various neuroimaging techniques	Understand the working principle behind various neuroimaging techniques used in the diagnosis of neurological Illness	Individual written assignment
In class lecture and case studies	Explain the biological processes underpinning various psychological disorders.	Group presentation (role play)

TOPICS COVERED

1. Origins of biopsychology
2. Structure and function of the cells of the nervous system
3. Structure of the nervous system
4. Neurobiology of Tumors, Seizure disorders and Cerebrovascular Accidents
5. Neurobiology of Disorders of Development
6. Neurobiology of Degenerative disorders
7. Neurobiology of Schizophrenia
8. Neurobiology of Major affective disorders

9. Neurobiology of Anxiety disorders
10. Neurobiology of Attention deficit hyperactivity disorder
11. Neurobiology of Stress disorders
12. Neurobiology of Substance Abuse Disorders

TEXTBOOK

Carlson, N. R. & Birkett, M. A. (2017). Foundations of physiological psychology, 12th ed. Boston, Mass: Pearson A & B.

EVALUATION

Group Presentation (Role Play)- 30 marks

A group of 5 students will perform a role play in class where in they will be required to depict the process that sets in motion when a person is affected by a neuropsychiatric illness. The aim of this exercise is to familiarize students with the various steps in the diagnosis treatment and follow up procedures that are associated with psychological illness. Students will be required to thoroughly research the biological underpinnings, diagnostic procedures, sign and symptoms of the disorder and how it impacts the patients occupational, family, recreational and academic functioning to get a 360 degree view of how the illness impacts a person and their loved ones. The role play will be for a maximum of 30 minutes. The dates of the presentation will be staggered throughout the semester. A doodle link will be shared with the students in the beginning of the semester and the students can book a slot according to their preference. Each of the following roles will be divided among the group members

1. Narrator- The narrator is a person who will introduce the nature of the illness, the patient, the treatment process and final course of the outcome
2. Physician- A medical doctor who makes a diagnosis of the patient conditions based on signs, symptoms and case history obtained from the patient and patent's family member, recommends appropriate testing procedures and treatment.
3. Patient- This is the person who is affected by one of the following neuropsychiatric conditions from the list shared below. The patient will exhibit the signs and symptoms of the disorder and give an account of the behavioral, emotional and cognitive impact of these symptoms as per the script of the role play decided by the group members.
    a. Tumors, Seizure disorders and Cerebrovascular Accidents
    b. Disorders of Development
    c. Degenerative disorders
    d. Schizophrenia
    e. Major affective disorders
    f. Anxiety disorders
    g. Attention deficit hyperactivity disorder
    h. Stress disorders
    i. Substance Abuse Disorders

4. Family Member- This is the person who brings the patient to the doctor. This person is familiar with the patient's background, the presenting symptoms and the onset of the symptoms and other important health and family related information
5. Psychologist- The psychologist is the person who makes an assessment of the cognitive functions that are impaired and recommends rehabilitation or cognitive remediation techniques for the particular disorder the patient is suffering from.

Marking Scheme for the Role Play

Role	Marks	Marking criteria
Narrator	6	The logical sequence in which various elements of the disease have been presented and the theoretical knowledge conveyed along with a sound narration of the various events of the role play from introducing the patient right up till follow up
Patient	6	Role play of the sign and symptoms, physical, behavioral, emotional and cognitive elements of the disorder with accuracy based on research and acting it out with dignity and respect for those who have been affected by the illness
Family Member	6	Accurate portrayal of family members concern and reporting of the distress and dysfunction experienced by the patient in the family, work and other immediate environments. Being able to reliably convey to the treating team the health and family related information that is deemed important with respect to the disease
Psychologist	6	Being able to decide what psychological test to use and correctly identify the deficits in behavioral, cognitive and emotional functioning. Coming up with strategies for providing support to the patient and discovering the strengths that are still intact and maximizing that. Also looking at possible methods of cognitive rehabilitation and

		psychosocial support to family members
Physician	6	Accurate portrayal of the asking the right questions with respect to signs and symptoms of the disease, listening to the patient and family member's concerns, identifying the right diagnostic procedures, psycho-educating the patient and the family members about the disease and the course of treatment

Individual Written Assignment (Neurodiagnostic Imaging Techniques)-30%

This assignment will consist of a 1000 words typed report on one of the following neuroimaging techniques:

1. Magnetic Resonance Imaging (MRI)
2. Positron emission Tomography (PET)
3. SPECT
4. EEG
5. CAT
6. Functional Magnetic Resonance Imaging (f-MRI)

The report will introduce the reader to the particular imaging technique, the working principle behind it, the conditions for which the imaging technique is useful and the strengths and limitations of the particular technique. The deadline for submission will be approximately 5th week of the semester. The exact date will be announced in the beginning of the semester.

Marking Scheme for the Individual Written Assignment

Subcomponent of the Assignment	Marks
Introduction to the technique	5
Working principle behind the technique	5
Pathological conditions for which this technique is used	5
Strengths of this imaging technique	5
Limitations of this technique	5

APA format (in text and bibliography) and respect for the word limit	5

End Semester Exam- 40 marks

This will be a non-cumulative exam and will consists of a variety of descriptive and application-based questions

GRADE DEFINITION

O (80% & Above) [8.0]	Outstanding	Exceptional knowledge of the subject matter, thorough understanding of issues; ability to synthesize ideas, rules and principles and extraordinary critical and analytical ability
A+ (75%-79%) [7.5]	Excellent	Sound knowledge of the subject matter, thorough understanding of issues; ability to synthesize ideas, rules and principles and critical and analytical ability
A (70%-74%) [7.0]	Very Good	Sound knowledge of the subject matter, excellent organizational capacity, ability to synthesize ideas, rules and principles, critically 6nalyse existing materials and originality in thinking and presentation
A- (65%-69%) [6.0]	Good	Good understanding of the subject matter, ability to identify issues and provide balanced solutions to problems and good critical and analytical skills
B+ (60%-64%) [5.0]	Fair	Average understanding of the subject matter, limited ability to identify issues and provide solutions to problems and reasonable critical and analytical skills. Average understanding of the subject matter, limited ability to identify issues and provide solutions to problems and reasonable critical and analytical skills
B (55%-59%) [4.0]	Acceptable	Adequate knowledge of the subject matter to go to the next level of study and reasonable critical and analytical skills

B- (50%-54%) [3.0]	Marginal	Limited knowledge of the subject matter and irrelevant use of materials and, poor critical and analytical skills
F (Below 50%)	Fail	Poor comprehension of the subject matter; poor critical and analytical skills and marginal use of the relevant materials. Will require repeating the course

PEDAGOGY

Role plays, Instructional videos, Using Neuroanatomy Atlas/ In class worksheet, Case Studies and Classroom discussions

CLASS SCHEDULE

WEEK	TOPIC	READINGS
1	Origins of biopsychology	Carlson, N. R. & Birkett, M. A (2017): pp 17-31
2 and 3	Structure and function of the cells of the nervous system	Carlson, N. R. & Birkett, M. A (2017): pp 37-67
4 and 5	Structure of the nervous system Week 5: Individual Written Assignment due	Carlson, N. R. & Birkett, M. A (2017): pp 72-98
6	Tumors, Seizure disorders and Cerebrovascular Accidents	Carlson, N. R. & Birkett, M. A (2017): pp 497-509
7	Disorders of Development	Carlson, N. R. & Birkett, M. A (2017): pp 510-512, 592-594
8	Degenerative disorders Role Play 1	Carlson, N. R. & Birkett, M. A (2017): pp 514-528
9	Schizophrenia Role Play 2	Carlson, N. R. & Birkett, M. A (2017): pp 535-547

10	Major affective disorders Role play 3	Carlson, N. R. & Birkett, M. A (2017): pp 551-560
11	Anxiety disorders Role Play 4	Carlson, N. R. & Birkett, M. A (2017): pp 582-589
12	Attention deficit hyperactivity disorder Role Play 5	Carlson, N. R. & Birkett, M. A (2017): pp 597-599
13	Stress disorders Role Play 6	Carlson, N. R. & Birkett, M. A (2017): pp 569-581
14	Substance Abuse Disorders	Carlson, N. R. & Birkett, M. A (2017): pp 605-631
15	Revision	

There will be additional case studies shared with the class in the beginning of the semester to supplement the text material.

ACADEMIC INTEGRITY

Classroom punctuality/conduct:

JSLH conducts all classes on a foundation of professionalism. It is expected that students should be present in class and seated within five minutes of the class start time. Students arriving after a ten-minute window from the designated start time will be refused entry/attendance. Please show courtesy to your instructors and co-learners by observing punctuality. Please also note that the seminar room is a place for free expression and critical thinking and this comes with a responsibility on the part of students to respect opinions expressed and actively participate in the work of the classroom discussion.

Plagiarism:

In line with JGU policy, JSLH operates a zero tolerance approach to Plagiarism. The unacknowledged use of material by others within your work is a violation of academic integrity and all reported cases will be investigated before potential disciplinary action. Instructors will address methods of citation and presentation within written work.

DISABILITY SUPPORT AND ACCOMMODATION REQUIREMENTS

The Disability Support Committee (DSC) has identified conditions that could hinder a student's overall well-being. These include physical and mobility related difficulties, visual impairment, hearing impairment, mental health conditions and intellectual/learning difficulties e.g., dyslexia and dyscalculia. Students with any known disability needing academic and other support are required to register with

the Disability Support Committee (DSC) by following the procedure specified at: https://jgu.edu.in/disability-support-committee/

Students who need support may register any time during the semester up until a month before the end semester exam begins. Those students who wish to continue receiving support from the previous semester, must re-register within the first month of a semester. Last minute registrations and support might not be possible as sufficient time is required to make the arrangements for support. The DSC maintains strict confidentiality about the identity of the student and the nature of their disability and the same is requested from faculty members and staff as well. The DSC takes a strong stance against in-class and out-of-class references made about a student's disability without their consent and disrespectful comments referring to a student's disability.

All general queries are to be addressed to disabilitysupportcommittee@jgu.edu.in