



राष्ट्रीय प्रौद्योगिकी संस्थान रायपुर
NATIONAL INSTITUTE OF TECHNOLOGY RAIPUR
(An Institute of National Importance)

DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

1.	Department proposing the course	Humanities and Social Sciences
2.	Course Title	Cognitive Neuroscience of Language and Emotion
3.	L-T-P Structure	3-0-0
4.	Credits / # of period	3 /30
5.	Course number(Code)	
6.	Status (Core/Elective)	Open Elective
7.	Pre-requisites (course no./title)	None
8.	Frequency of offer	B.Tech. 6 th Sem (Even); Once in Year.
9.	Course Objectives(CO) : 1. To examine the neurological correlates of emotion and language 2. To explain the influence of emotion on decision making 3. To evaluate the experimental methods (behavioural and EEG) of cognitive neuroscience	
10.	Course Syllabus: Unit 1. Language, Cognition and Brain Definition of Cognition; Signaling Units of the Brain; Regions of Interest; Language and Emotion; Major Lobes: Prefrontal, Anterior-frontal, Frontal, Temporal, Central, Parietal and Occipital. Language Related Regions: Broca's Area, and Wernicke's Area. Unit 2. Cognitive Neuroscience Methods Physiological, Psychological, and Neuropsychological Measures; Structure-Function Relationship; Neuroimaging; EEG. Basic Experimental Paradigms: Attention, Match-Mismatch and Stroop; Electrophysiology: Stimulation, Recording, Signal Pre- and Post-Processing, Frequency and Time Domain Analysis; Event-Related Potentials of Brain: Application to Language and Emotion Processing. Unit-3 Word and Sentence Processing Processing of Written and Spoken Words; Lexical Priming; Processing of Complex Words; Verbs and Nouns; Processing of Action and Abstract Words; Hemispheric laterality; Semantic Violation-N400 and Syntactic Violation-P600Emotional Prosody: Prosodic Stroop; Violation and ERP; Major ERP components: P100, N170, P200, P300 and Late Positive Complex (LPC).	

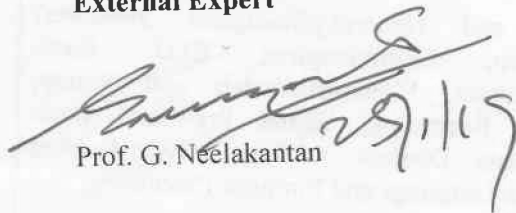


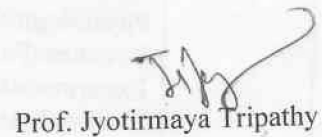
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	Unit -4 Processing of Emotions Positive Emotions: Excitement, Pleasure and Desire Relation to Happiness; Negative Emotions: Anger, Disgust, Fear and Sadness; Social Emotions: Moral and Empathy; Neuroanatomy and Cerebral Organization of Emotion Systems; Variability in Emotion: Sex Differences, Aging, and Cultural Differences
11.	Text Books:- 1. David Kemmerer. 2015. Cognitive Neuroscience of Language. Psychological Press, Taylor & Francis Group, New York. 2. L. K., Obler, & K. Gjerlow. 1999. Language and the Brain. Cambridge University Press. U.K. 3. J. Ward. 2010. The Student's Guide to Cognitive Neuroscience. Psychology Press, New York. 4. J. P Pinel, & M. Edwards. 1998. A Colourful Introduction to the Anatomy of the Human Brain: A Brain and Psychology Coloring Book. Allyn and Bacon.
12.	Reference Books:- 1. Steven J. Luck & Emily S. Kappenman. 2012. The Oxford Handbook of Event-Related Potential Components. Oxford University Press. USA. 2. Gregory H. & Steven L. Small. Neurobiology of Language. Elsevier. London.


Departmental Academic Committee
External Expert



Prof. G. Neelakantan


Prof. Jyotirmaya Tripathy

Internal Members


Dr. S.D. Patle
HOD


Dr. Shashikanta Tarai
Course-Instructor


Dr. Anoop Tiwari


Dr. Jaya Dwivedi