ANFA 2020 Sensing Space, Perceiving Places

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Course Number	Title	Length	LU or LU/HSW	Description	Learning Objective 1	Learning Objective 2	Learning Objective 3	Learning Objective 4	ANFA Presentations	Signature
ANFA2001	Design Thought Process	1	LU	Four speakers will give separate talks referencing novelty, experience, memory and imagaination	Participants will hear how creative thinking linked to situational novelty and ambiguity may be measured	Participants will hear how brain networks that support memory may trigger imagination	Participants will consider how design evaluation may shift from efficiency metrics focused on form & mechanical performance to experience quantified by cognitive & emotional effects	Participants will learn of a brain imaging study on architects working on different design activities	**(30, 35, 129, 171)** Understanding the Effect of Spatial Ambiguity on Creative Modes of Thinking; From Sensing Places to Designing Spaces: Linking wayfinding, Memory and imagination; Phenomena Potential - Towards a Practical Neurophenomenology of Architecture and Urban Design; Space Layout Design and Sketching: A Study of Architects Neurophysiological Activations	
ANFA2002	Health and Healthcare	1	LU/HSW	Four speakers will give separate talks on how spatial enrichment may benefit health	Participants will hear how physical & cognitive engagement with the built environment is beneficial to an elderly's hippicampus brain region	Participants will hear how architecture may be used as a form of therapy through embodied cognition	Participants will learn how spacial configuration of a care facility may increase social interaction and reduce lonliness	Participants will hear how space may be tuned for behvioral performance evoking positive not negative emotions	**(24, 28, 66, 169)** Designing a Retirement Community: Minding the Hippocampus; Architecture Subliminal Therapy: The parallel of architecture and traditional forms of therapy to propose new accessible treatments for psychological disorders; MEMORY CARE BY DESIGN (MCxD): The role of spatial configuration as a design tool to improve social interaction; Elements of enriched environments that attune activated optimal health	
ANFA2003	Performance Variables: Biophilia, Color, Light	1	LU/HSW	Four speakers will give separate talks referencing human biological influences	Participants will hear how views to nature affect the nervous system and heart rate under physiological testing	Participants will learn how focal colors in a sanatorium designed by Alvar Aalto respond to spatial, medical and psychological needs	Participants will hear how personalized lighting may be affected by four key dimensions personalized lighting	Participants will hear how street lighting may alter how one perceives exterior landmarks for a richer semantic respresentation	**(55, 95, 160, 181)** Engaging Spatial Maps with Multisensory Illusions Physiological Effects of Resetting the Zenith in Nurse Stations; Neuroscience of Urban Lighting: Sensing Cognitive Attention and Distraction of Street Luminance in Virtual Reality; Personalized lighting for the non-visual age and beyond; On Vision: The Science and Cultural History of Spatial Perception and Imagination	
ANFA2004	Occupant Behavior in Buildings and Beyond	1	LU/HSW	Four speakers will give separate talks on behavioral responses to changing environments	Participants will learn about a number of typologies which could potentially boost creativity and prevent ageing-related cognitive decline	Participants will consider how outer space habitats change behavior and performance requirements for a crew to perform	Participants will hear about the benefits of testing virtual environments and collecting biological measurements before designs are physically constructed	Participants will hear how neural phenomena may be correlated with visual discrimination in testing design beliefs about visual articulation	**(51, 52, 119, 122)** Cognitive Performance in Immersive Virtual Environments: Initial Assessment on Behavioral and Physiological Outcomes; Experiments in Architectural Modeling with Visual Discriminative Neural; New Pathways for Neuroscience in Space Habitat Design and the New Field of Space Architecture; The potential of the built environment to reduce cognitive decline by supporting	
ANFA2005	Spatial Interactions and Navigation	1	LU	Four speakers will give separate talks on psycho-spatial intelligence and preferences	Participants will learn from an animal study tacking the subiculum brain region during route navigation	Participants will learn about human transition from one space to another with varying affordances	Participants will hear how sensor data using a prototype tool allows for a quantifications of spatial qualities	Participants will learn of differences in neural activity between reading a 2-D map of a specific environment and navigating through the actual environment	**(2, 3, 41, 58)** Maps, Frames of Reference, and Spatial Cognition; Subiculum neurons fire to multiple orientations to encode environmental path structure; Brain meets Building when Behavior Meets Space	
ANFA2006	Senory Experience	1	LU/HSW	Four speakers will give separate talks referencing sensorimotor experience	Participants will be introduced to tools to support architectural and urban design that focuses on psycho-spatial wellbeing	Participants will hear how the olfactory system offers a unique context to spatial design	Participants will learn about the development of a descriptive system that supports neuroscientific information and architectural theory	Participants will hear how psycho-spatial wellbeing and mindfulness interplays with the built environment	**(89, 134, 144, 172)** Mind and Machine: Interaction, `performance and mental expression through robotics and computation; INNER GEOGRAPHIES FOR PSYCHO-SPATIAL WELLBEING: CONVERGING SITUATEDNESS AND MINDFULNESS IN AN ECOLOGICALLY-VALID APPROACH; Architectural affordances: Alpha suppression of proprioceptive prediction- errors; Sensory	
ANFA2007	Catalysts to Learning	1	LU	Four speakers will give separate talks about education methods and environments	Participants will learn of different approaches for research where neuroscientists are in collaboration with architects	Participants will learn how passive infrared occupant motion sensors are used to gather data about students' use of space	Participants will hear how architectural education may adopt methods & tools for associated with scientific thinking for creative & explorative design thinking	Participants will hear how frequency of gestures may correlate with cognition in reading architectural drawings	**(64, 93, 82, 176)** The Measurable and Immeasurable: How Scientists and Architects Work Together; Placing "process" in the spotlight: Architectural education as a testing ground for cognitive science- design translation; Common Sense: Investigating the behavioral and cognitive impact of architectural qualities in educational environments; Embodied Design Cognition: Effects of Information	
ANFA2008	Measurement Tools: Hardware & Software	1	LU	Four speakers give separate talks on how brain tracking equipment provides data toward understanding human behavior	Participants will learn about advanced research equipment and sensors (VR, EEG, GSR, Eye Tracking)	Participants will learn how to use brain measurement equipment in a living lab study environment	Participant will learn about recent advancements in reality capturing (RC) to produce full-scale replicas of physical space	Participants will learn how server-based pattern recognition testing of design alternatives will elicit emotional response data appropriate for architects' use	**(8, 140, 151, 166)** Comparative studies of human spatial experience through mixed reality; TRACEr, a neuroscientificaly enhanced AI for analyzing and certifiing culturally encoded emotions of architectural drafts; Architects and Citizen: do they See Urban Environment Differently?; Aesthetic Judgments and Emotional Responses to Architectural Boundaries in Virtual Reality Environments	
ANFA2009K	Mobile Brian/Body Imaging	1	LU/HSW	Keynote by Director of UCSD Institute for Neural Computation on studies of emotional communication through music and gesture	Participants learn how researchers are applying new analysis methods to imaging data	Participants will learn how physicists, engineers, and mathematicians are modeling the distributed human brain dynamics such as attention, memory, decision-making, emotion, and social	Participants will learn how virtual reality CAVE equipment provides in depth analysis of proposed building design	Participants will be presented with case studies on the correlation of social neuroscience, reward, musical experience and insight		
ANAF2010K	Space Syntax Laboratory	1	LU	Keynote by former Dean of the Barlett School of Architecture, U. College London, to discuss city masterplaning and sustainable neighborhoods & buildings	Participants will hear of case studies on virtual environments, imaging and visualization	Participants will learn about sustainablity for the 24-hour city, for development of design decision making	Participants will learn about the effects of spatial design on aspects of social, organizational and economic performance of buildings & urban areas	Participants will learn how to develop design solutions that combine machine learning, optimization, and technological innovation		
ANFA2011K	Architecture with Feeling	1	LU	Keynote by JP Eberhard Fellow at Deakin U., Melbourne, Australia, to deliver research findings on two year study	Participants will learn about how emotional & neurophysiological responses are measured in response to the built environment	Participants will learn how data is collected from a Cave Automatic Virtual Environment with a participant in the control condition	Participants will learn how scientific data may be interpreted for government and industry audiences	Participants will learn why this research is of interest to those in fields of computational neuroscience, psychology, psychiatry, behavioral & cognitive neuroscience, cellular &		