NMSBA Neuromarketing Fundamentals
Intended Learning Outcomes (ILO)
KNOWLEDGE AND UNDERSTANDING

Study material: Consumer Neuroscience (Cerf/Garcia-Garcia et.al.)

At the end of the course students will be able to:

- Identify the basic principles and methods of psychophysiology and neuroscience.
- Describe how brain physiology constrains and predicts consumer behavior.

APPLYING KNOWLEDGE AND UNDERSTANDING

At the end of the course student will be able to...

- Explain how neuroscientific methods can be used to improve consumers' experiences of products.
- Demonstrate how marketers can use neuroscientific principles to communicate with consumers more effectively.

You will be given an overview of the following:

- Yield a deeper understanding how to strategically use neuroscience in audience/consumer research and management
- You will be able to understand why and how consumer neuroscience goes beyond traditional metrics and gain knowledge about its predictive power in predicting choices
- You will get an overview of various neuroscientific tools and be able to differentiate them in terms of specific applications
- You will get familiar with important neuroscience tools and vendors in the field and be able to critically select them for your projects
- You will benefit from the experiences of top business and academic experts in the field. All sessions are underlined by insights from industry cases and expert views
- You can explain the importance of emotions in decision-making processes and the relevance of emotions/ attention and memory for media and communication management
- To get the Neuromarketing Fundamentals Certification, participants need to pass an exam that proves they understand the fundamentals of neuromarketing.
- Candidates should be able to give an overview of the field, the most common technologies
- Candidates have knowledge about the background on the brain and physiological systems necessary for understanding how they work in the context of decision making
- Candidates understand the mechanisms that govern our perception and experience

The candidate of the Neuromarketing Fundamentals exam can ...

1. Basic concepts in the field of neuromarketing

a. Mention applications of neuromarketing
b. Name relevant scientists and relate their contribution to the field of neuromarketing
c. Put the neuromarketing techniques in order of history
d. Explain what different neuromarketing techniques measure
e. Explain the different theories on decision making studies throughout history
f. Apply these theories into real-world situations
g. Explain how people have been using neuroscience to better understand the consumer
h. Mention and explain the advantages and limitations of neuromarketing
i. Create a checklist to evaluate a neuromarketing vendor

2. Brain physiology and anatomy

a. Distinguish the elements of a neuron
b. Tell how much the brain weighs
c. Explain what a neuron spike is
d. Point out the cortical regions of the brain
e. Explain the four most important circuits in the brain to understand consumer behavior
f. Explain the effects of the marketing mix on neural circuits
g. Describe what dopamine is, where it is released, and what it does in your brain
h. Describe the main structures involved in the reward system, emotion, memory and attention
i. Distinguish the different brain regions and their approximate functions

3. Sensation and perception

a. Distinguish the different senses, their organs and how sensory information is processed in the brain
b. Explain what subliminal advertising is
c. Mention the type of energy related to each sense
d. Point out the anatomy of the eye and ear
e. Explain the psychological effects of color and sound and their application in neuromarketing
f. Explain the role smell and taste play in the human nervous system

4. Methods

a. Mention and describe the neuromarketing tools available for marketers.
b. Describe the advantages/disadvantages for each tool
c. Distinguish what tool can be used to measure what you need to know
d. Describe the concepts of spatial resolution and temporal resolution and how they relate
e. Learn what can be measured using neuromarketing methods (engagement, memory, taste, price etc)
f. Interpret the measurements taken

5. Attention

a. Describe what top-down attention is
b. Describe what bottom-up attention is, and what factors facilitate it
c. Understand why attention is a relevant factor in the marketing field
e. Describe concepts such as low-involvement theory, visual salience and attentional blindness
f. Learn how attention can be measured in the brain, using different methods available.
g. Explain which methods are suitable in which setting

6. Memory

a. Understand why the hippocampus is important in terms of memory
b. Describe how and where memory is formed and stored in the brain
c. Describe how an associative memory network functions
d. Describe how the knowledge around memory can be useful in terms of marketing efforts
e. Describe how repetition, emotion, and existing memories play a part in the formation of long-lasting memories

7. Emotion

a. Describe what emotion is
b. Understand the two theories behind the forming of emotions
c. Describe the concepts of low versus high arousal and valence
d. Understand the role of the brain and the body in emotion
e. Describe the techniques available for measuring conscious and non-conscious emotional responses in market research, as well as their pros and cons
f. Describe the (positive/negative) impact of emotion on marketing efforts
g. Understand what impact certain medication can have on long term retention

8. Decision-Making

a. Describe what choice blindness is
b. Understand what happens in the paradox of choice
c. Describe what happens during System 1 and System 2 decision-making
d. Distinguish in what instance one would use System 1 vs System 2 decision-making
e. Mention factors that favor System 1 or 2
f. Mention factors that affect our decision-making
g. Describe how neuroscientific insights into decision-making are applied to the 4 P's of marketing

9. Reward System

a. Describe the concept of reward
b. Distinguish between primary and secondary rewards and give examples of both
c. Distinguish three regions in the brain involved in reward and sales prediction
d. Describe the most successful neuroscience method in terms of reward and why
e. Understand the difference between wanting and liking and how this is shown in different paths of the brain
f. Describe how certain drugs work in the brain, using the concepts of dopamine, neurotransmitter and opiods

g. Describe the current reward system restrictions and possibilities for future marketeers.
h. Describe concepts like limbic areas, nucleus accumbens and orbitofrontal cortex and how they are related in terms of reward

10. Brand Equity

a. Describe the memory systems of particular importance for consumer decision-making
b. Describe semantic memory, the memory type, learning rate and neural substrates involved
d. Describe episodic memory, the memory type, learning rate and neural substrates involved.
e. Describe instrumental memory, the memory type, learning rate and neural substrates involved.
f. Point out what happened during the Pepsi/Coke experiment: the Pepsi Challenge
g. Understand the goal directed versus the habitual decision-making process and the role habits play

11. Price

a. Describe what Neuropricing entails and why it is helpful
b. Describe what happens in the body when we perceive an object, using concepts like retina, thalamus, occipital lobe, dorsal and ventral path, and prefrontal cortex
c. Describe what area in the brain is activated when a person liked the product and price and why is this interesting
d. Describe what price pain is and where is the brain activated when this happens

12. Social Marketing

a. Explain the term social marketing
b. Understand which areas in the brain need to be activated when behavioral change is desired
c. Discuss the limits of neuro techniques especially when considering certain demographic groups who are more vulnerable to influences

13. Using Knowledge from Neuroscience to Make Business Predictions

a. Understand what the brain and big data analysis in the business world have in common
b. Describe the two classical methods by which the brain makes predictions
c. Explain what happens when a prediction error occurs
d. Explain why it is helpful to know how the brain does its predictions with regards to big data analytics
e. Describe how machine learning works
f. Explain which neuroscience methods can be used in market research and prediction and how

14. Applications in Market Research

a. Give a short history of market research
b. Describe the barriers that exist(ed) with the use of neuroscience in marketing
c. Explain Nielsen's model of decision-making, the role of emotion and the link with Antonio Damasio's somatic marker hypothesis.
d. Explain how emotional advertising works to build brands, according to Robert Heath
e. Describe which research areas are most likely to be disrupted by neuroscience

15. Ethics in Consumer Neuroscience

a. Understand neuroethics in designing an applied neuroscience study
b. Explain the history of neuroethics
c. Learn the essential regulatory guidelines for human subject research
d. Apply practical ethical concerns in conducting real-world neuro-based research
e. Explain the importance of informed consent as a required process to any neuro study
f. Garner a strong awareness of study participant's privacy and rights to confidentiality
g. Maintain a dialogue regarding essential aspects of the Belmont Report
h. Learn the elements contained in the NMSBA's code of ethics for practitioners in the field
i. Define the term reverse inference and explain its risk to interpreting neuroscientific data.
j. Identify key issues brought up by critics and opponents of consumer neuroscience research
k. Learn varying laws against the use of applied neuroscience techniques at the global scale.

16. The Future of Neuromarketing and Consumer Neuroscience

a. Understand the importance of connecting neuroscience-data to business outcomes
b. Explain the importance of varying types of validity in effective research designs
c. Learn about new technologies to measure pre-conscious biological responses
d. Discuss the future relevance of "stand-off" technologies in measuring consumers
e. Consider how measures of consumer neuroscience can be optimized for virtual environments
e. Understand the importance of measuring multiple sensory inputs in branded content
f. Explain new opportunities to identify unique consumer populations through "neurosegmentation"