

ERASMUS+ *The Science of Learning: Neuroscience Insights for Educators*

Course Ref:
ERASMUS+NEURO
Entry Level: B1

Language of tuition: French

Daily Teaching Sessions Morning:
4 x 45 minutes (3 hrs. 15)
Afternoon: 1 x 45 minutes

Total course contact hours:
1 week: 20 hours

Maximum class size: 14

Course provider:
NDI - KLF Bordeaux
Jardin de l'Ars
2 parvis Gattebourse
33800 Bordeaux

Training Manager



Amandine DURIEZ

Amandine has been teaching French as a foreign language for over 15 years and is a certified professional coach. She is also a mental trainer for performance support for French and international professionals and students. She develops educational programmes for a variety of audiences. She specialises in an in-depth understanding of brain mechanisms, the ability to simplify complex concepts and the adaptation of teaching content to the specific needs of learners.

This course offers advantages to :

Teachers: Educators across various subjects and grade levels who wish to deepen their understanding of how the brain processes and retains information, and how they can apply these insights to improve teaching and learning outcomes.

Educational Leaders: School administrators, department heads, and curriculum designers who want to incorporate neuroscience-based strategies into school-wide teaching approaches and policies.

Special Education Professionals: Educators and support staff working with students who have diverse learning needs (e.g., learning disabilities, neurodiversity) and want to tailor their strategies based on how the brain learns differently.

Training and Professional Development Coordinators: Individuals responsible for organizing teacher training and development programs, who are looking to introduce neuroscience-based strategies into their curriculum offerings

Objectives

Understand the Basic Neuroscience of Learning:

Equip educators with foundational knowledge about how the brain processes, stores, and retrieves information, including key concepts like neuroplasticity, memory, attention, and cognitive load.

Apply Neuroscience Principles to Teaching Strategies:

Enable educators to design and implement teaching practices that align with how the brain learns, using evidence-based approaches to enhance memory retention, focus, and overall learning effectiveness.

Create Emotionally Supportive Learning Environments:

Teach educators how emotions and social interactions influence learning, and how to create classroom environments that foster emotional well-being, motivation, and student engagement.

Integrate Growth Mindset and Behavior Management Techniques:

Help educators promote a growth mindset in students, develop strategies to manage classroom behavior using neuroscience principles, and design routines that align with the brain's natural learning rhythms.

Preparation Pre-course Preparative Modalities:

- Needs Analysis
- Online resources for pre-course, arrival and cultural information
- Online language level assessment

ERASMUS+NEURO

Understanding the Neuroscience of Learning:

Explain the basic principles of how the brain processes and retains information, including memory, attention, and cognitive load.

Applying Cognitive Load Theory:

Understand the concept of cognitive load and its impact on students' ability to absorb new information.

Enhancing Student Engagement through Emotional and Social Factors:

Identify how emotions influence learning
Create emotionally supportive learning environments
Understand the role of social learning and peer interactions

Understanding Individual Differences in Learning Styles:

Recognize the implications of individual brain differences / Tailor teaching strategies to meet diverse needs /
Promote inclusive teaching practices

Fostering Growth Mindset and Motivation in Students:

Explain the concept of a growth mindset
Implement strategies to encourage a growth mindset
Incorporate motivation-boosting techniques
The international classroom environment is leveraged to develop intercultural communication and understanding, fostering effective mediation skills.

Practical arrangements Intra-Course Modalities offered by the Course Provider

- Course tutoring
- Pedagogic learning materials included
- Setting of learning objectives
- Ongoing assessment and evaluation including feedback on progress
- Guidance and advice on homework exercises
- City orientation tour and welcome activity
- Access to school study and media centre
- *Accommodation service upon request*
- *Transfer service from airport upon request*

Follow up provided Post-Course Modalities

- A Certificate of Attendance and Achievement
- Europass Mobility
- End of course test and programme evaluation

Course Content and Strategies

The course covers key neuroscience principles relevant to teaching, such as memory, attention, neuroplasticity, and cognitive load.

It explores how the brain processes and stores information, and how these insights can be applied to classroom practices to improve learning outcomes.

The training focuses on creating emotionally supportive environments that foster engagement and motivation, while addressing individual differences in learning styles and neurological needs.

Educators will learn evidence-based strategies like spaced repetition, retrieval practice, and differentiated instruction. Emphasis is placed on fostering a growth mindset and using brain-based behavior management techniques.

Practical activities and case studies will demonstrate how to integrate these principles into daily teaching. The course also encourages reflection on current practices, ensuring educators can continually adapt their approach to the latest neuroscience research. Overall, the course provides practical tools for creating an inclusive, effective, and brain-friendly learning environment.

Sample Programme

This is a sample of a schedule which can be adapted to suit the participants' needs.

One-Week Course

Total minimum number of course contact hours: 20 hours. See appendix A below

Outcomes

Understand the Neuroscience of Learning: Explain key brain functions related to memory, attention, and decision-making, and how

neuroplasticity supports lifelong learning.

Apply Cognitive Load and Memory Strategies: Design lesson plans that optimize cognitive load and use techniques like spaced repetition and retrieval practice to enhance memory retention.

Enhance Student Engagement: Recognize how emotions and social factors influence learning, and create emotionally supportive, collaborative environments to foster student motivation and curiosity.

Adapt Teaching to Individual Differences: Implement differentiated teaching strategies to support diverse learning needs, including neurodiversity and learning disabilities, promoting inclusive education.

Incorporate Evidence-Based Practices: Use neuroscience principles to design effective lessons, manage student behavior, and foster a growth mindset, while continuously evaluating new research to improve teaching strategies.



Appendix: Sample Programme

Week 1	Day 1	Day 2	Day 3	Day 4	Day 5
08:30 – 09:00	Welcome, orientation and briefing before sessions				
09:00 – 10:45	<p>Introduction to Neuroscience and the Brain’s Role in Learning</p> <p>Overview of brain anatomy and functions. Understanding How the Brain Learns: The role of memory, attention, and neuroplasticity in learning. Key Brain Areas: Discuss the functions of the hippocampus, prefrontal cortex, and amygdala in learning and behavior.</p>	<p>Applying Neuroscience to Teaching Strategies</p> <p>How the Brain Processes Information: The flow of sensory input, attention, and information processing. Visual, Auditory, and Kinesthetic Learning: The role of multisensory approaches in teaching. Using Active Learning: How physical movement and active engagement can stimulate brain activity.</p>	<p>Emotional and Social Factors in Learning</p> <p>The Role of Emotions in Learning The Brain-Emotion Connection: How emotions affect learning, memory, and motivation. Stress and Learning: Understanding the impact of stress on cognitive function. Creating Emotionally Supportive Classrooms: Techniques for fostering positive emotional experiences.</p>	<p>Tailoring Teaching to Individual Brain Differences</p> <p>Understanding Neurodiversity and Learning Differences Neurodiversity in the Classroom: Recognizing and supporting students with ADHD, dyslexia, autism, etc. Brain-Based Strategies for Diverse Learners: Differentiated instruction and individualized support strategies.</p>	<p>Growth Mindset, Behavior Management, and Implementing Neuroscience</p> <p>Promoting Growth Mindset Growth vs. Fixed Mindset: The role of mindset in brain development and student performance. Strategies for Encouraging a Growth Mindset: How to promote resilience, perseverance, and a positive attitude towards learning.</p>
10:45 – 11:00	Break				
11:00 – 12:15	<p>Cognitive Load and Memory</p> <p>Cognitive Load Theory: Understanding intrinsic, extraneous, and germane loads. Memory Systems: Short-term, long-term, and working memory. Neuroscience of Retention: The role of retrieval practice, spaced repetition, and emotional connections in memory retention.</p>	<p>Enhancing Student Focus and Engagement</p> <p>Attention and Focus: How attention works in the brain and its importance in learning. Creating Focused Learning Environments: Tips on structuring lessons to minimize distractions and boost concentration.</p>	<p>Social Learning and Collaborative Approaches</p> <p>Social Interaction and Cognitive Development: The impact of peer interactions and collaboration on learning. Building a Collaborative Classroom: Encouraging group work, peer feedback, and student-led learning.</p>	<p>Cognitive Development and Differentiation</p> <p>Adapting to Different Learning Stages: Understanding developmental stages and their impact on learning. Designing Differentiated Lessons: Tailoring lessons for varied cognitive abilities in the classroom.</p>	<p>Behavior Management and Classroom Routines</p> <p>Neuroscience of Behavior: How the brain governs behavior, attention, and impulsivity. Effective Behavior Management: Using reinforcement, consistency, and neuroscience insights to guide student behavior. Creating Brain-Friendly Classroom Routines: Establishing routines that align with the brain’s learning cycles.</p>
12:15 – 13:15	Break				
13h15 – 14h45	Visit of the city	Workshop : Courses observation	Workshop : courses observation	Workshop : courses observation	Cultural activity