



Value Added Course Certification

CogniMate: Boost Physiology Learning with AI.

Smarter Learning Strategies for First-Year M.B.B.S. Students



Department of Physiology,
VMCH & RI, Madurai

presents

Value Added Course on
**CogniMate: Boost Physiology
Learning with AI. (Smarter Learning
Strategies for First-Year M.B.B.S.
Students)**

Patrons

Honourable Chairman Shri M.V.Muthuramalingam	Vice Chairman Mr. M.V. Vivekanand	CAO Er. Mr. R. Manivannan
Dean Dr. T. Thirunavukkarasu	Medical Superintendent Dr. S. Nataraja Rathinam	Vice Principal Dr. B. G. Mahesh Krishna
Organising Chairperson Dr. S. Anu, Prof & Head, Dept. of Physiology		

13th and 14th December, 2025
Via Zoom platform

08.00 am to 05.00 pm

S. No.	Time	Topic	Speaker
1	08.00 am - 08.15 am	Welcome address	Dr.S.Anu, Professor and Head, Dept. of Physiology, VMCH&RI, Madurai
2	08.15 am - 08.30 am	Pre-test	Dr.M.A.Hariviknesh, Postgraduate, Dept. of Physiology, VMCH&RI, Madurai
3	08.30 am - 09.30 am	Introduction to AI in Medical Learning	Dr.R.Durai Arasan, Asst. Prof., Dept. of Physiology, VMCH&RI, Madurai
4	09.30 am - 11.15 am	Prompting Skills for Smarter Learning	Dr.J.T.Ajit Kumar, Asst. Prof., Physiology, VMCH&RI, Madurai
5	11.15 am - 01.00 pm	AI-Powered Note-Taking & Summarization	Dr.A.Hariharan, Professor and Head, Dept. of Biochemistry, VMCH&RI, Madurai
6	01.00 pm - 02.00 pm	Lunch	
7	02.00 pm - 03.30 pm	Creating Mind Maps and Concept Flowcharts	Dr.Noel Naveen Johnson, Asst. Prof., Dept. of Physiology
8	03.30 pm - 04.45 pm	AI for Flashcards, MCQs and Quizzes	Dr.M.Renu Meena, Asst. Prof., Dept. of Physiology, VMCH&RI, Madurai
9	04.45 pm - 05.00 pm	Summary of the day's sessions and post-test	Dr.K.S.Sasikala Rani, Postgraduate, Dept. of Physiology, VMCH&RI, Madurai

Agenda (14.12.2025)

S. No.	Time	Topic	Speaker
10	08.00 am - 08.15 am	Pre-test	Dr.M.A.Hariviknesh, Postgraduate, Dept. of Physiology, VMCH&RI, Madurai
11	08.15 am - 10.30 am	AI for Visual Learning - Diagrams, GIFs & Flowcharts	Dr.J.Keba, Professor, Dept. of Physiology, Sree Gokulam Medical College & Research Foundation, Trivandrum, Kerala
12	10.30 am - 12.30 pm	AI in Practicals and OSCE Preparation	Dr.R.Durai Arasan, Asst. Prof., Dept. of Physiology, VMCH&RI, Madurai
13	12.30 pm - 01.30 pm	Lunch	
14	01.30 pm - 03.15 pm	AI for Research Orientation	Dr.M.Ramji, Statistician, Dept. of Community medicine, VMCH&RI, Madurai
15	03.15 pm - 04.45 pm	Integrating AI into Daily Study Routine	Dr.M.Saravanan, Assistant Professor, Dept. of Physiology, AIIMS, Madurai
16	04.45 pm - 04.55 pm	Summary of the day's sessions and post-test	Dr.K.S.Sasikala Rani, Postgraduate, Dept. of Physiology, VMCH&RI, Madurai
17	04.55 pm - 05.00 pm	Vote of thanks	Dr.R.Durai Arasan, Asst. Prof., Dept. of Physiology, VMCH&RI, Madurai

CogniMate: Boost Physiology Learning with AI. Smarter Learning Strategies for First-Year M.B.B.S. Students

CogniMate is a two-day online program designed to boost physiology learning for first-year M.B.B.S. students. It uses adaptive learning techniques to enhance understanding and retention of key concepts. The program features interactive sessions and personalized feedback for effective study. Its aim is to make physiology learning more engaging and accessible.

Organizing Team
Dr. John Rajpathy
Dr. M. Renu Meena
Dr. J. T. Ajit Kumar
Dr. R. Durai Arasan
Dr. Noel Naveen Johnson
Dr. M. A. Hariviknesh
Dr. K.S. Sasikala Rani

Students will be provided with certificates for the course

Department of Physiology, Velammal Medical College Hospital and Research Institute, Madurai, organized an online certifiable Value-Added Course to First Professional M.B.B.S. students (2025-26 batch) titled “CogniMate: Boost Physiology Learning with AI” on 13th and 14th December 2025.



Artificial Intelligence (AI) is increasingly transforming the way students' access, process, and apply knowledge. In medical education, AI-based tools provide opportunities for improving understanding, organizing large volumes of information, and developing efficient learning strategies. For first-year M.B.B.S. students, particularly in subjects such as Physiology, structured guidance on the effective and responsible use of AI can enhance conceptual learning, academic productivity, and self-directed study.

Recognizing this emerging need, the Department of Physiology, Velammal Medical College Hospital and Research Institute, Madurai, organized a certifiable Value-Added Course titled "CogniMate: Boost Physiology Learning with AI – Smarter Learning Strategies for First-Year M.B.B.S. Students." The course was designed to introduce students to practical applications of AI in academic learning, including generating study materials, creating assessment tools, organizing concepts, and developing structured learning resources. Through interactive sessions conducted by faculty members from various institutions, students were exposed to methods of integrating AI tools with conventional medical learning practices while maintaining academic integrity and critical thinking.

These sessions were taken via online mode with live demo by all faculty from the Department of Physiology, VMCH & RI along with Dr. A. Hariharan, Professor, Dept of Biochemistry, VMCH & RI, Dr. M. Ramji, Statistician, Dept of Community Medicine, VMCH & RI, Dr. J. Keba, Professor, Dept of Physiology, Gokulam Medical College, Trivandrum and Dr. M. Saravanan, Assistant Professor, Dept of Physiology, AIIMS – Madurai.

As outcome for this program all 150 students were divided into groups of 10 each with each team being given a topic based on the Value Added Course taken and the students were asked to complete the particular task with the proposed method.

Team No	Topic	Task	Method
1	AI-Generated MCQ Bank in Physiology	Create a bank of 100 MCQs from selected physiology topics with answers and explanations.	Use AI to generate MCQs → verify with standard textbooks → modify stems and options → classify into easy, moderate, difficult levels.
2	Case-Based MCQs for Physiology	Prepare 30 clinical vignette MCQs linking physiology with clinical scenarios.	Ask AI to generate clinical cases → refine scenarios → ensure physiological reasoning → add explanation for each answer.
3	AI-Assisted Physiology Seminar Series	Develop 5 short seminars with slides on core physiology topics.	Use AI to outline seminar content → generate slide points and diagrams → edit slides for clarity and academic accuracy.
4	Concept Flowcharts in Physiology	Create 20 flowcharts explaining physiological mechanisms.	Prompt AI to describe processes step-by-step → convert into visual flowcharts → review with textbooks for correctness.
5	Physiology	Produce a collection of 25	Use AI tools to generate diagrams →



	Diagram Atlas	labelled diagrams for important physiology concepts.	verify structures and labels → add brief explanatory notes below each diagram.
6	Rapid Revision Notes in Physiology	Prepare revision notes for 15 major topics (1–2 pages each).	Ask AI to summarise textbook chapters → condense into bullet points → edit for accuracy and exam relevance.
7	Viva Question Bank	Develop 150 viva questions with answers covering physiology syllabus.	Use AI to generate questions → categorize as basic, conceptual, and applied → cross-check answers with textbooks.
8	Clinical Correlations in Physiology	Prepare 20 short notes explaining clinical applications of physiology concepts.	Use AI to suggest clinical correlations → expand with explanations → relate physiology mechanism to disease.
9	Mind Maps of Physiological Systems	Create mind maps for 10 major body systems showing key concepts and links.	Use AI to identify major subtopics → organize into hierarchical structure → design visual mind maps.
10	Mnemonics for Physiology Learning	Compile 50 mnemonics and memory aids for complex topics.	Ask AI to generate mnemonic ideas → evaluate usefulness → refine and link them with physiological concepts.
11	Physiology Practical Guide	Prepare structured guides for 10 physiology practical experiments.	Use AI to outline principle, procedure, and interpretation → add diagrams and viva questions → verify with practical manual.
12	Short Answer Question (SAQ) Bank	Create 80 SAQs with structured answers aligned with exam pattern.	Use AI to generate questions → convert answers into concise structured format → validate with standard references.
13	Teaching Slides for Physiology Topics	Develop ready-to-use lecture slides for 10 topics.	Ask AI for slide outlines → generate figures and summaries → refine slides for academic presentation.
14	Comparative Tables in Physiology	Prepare 30 comparison tables for related physiological concepts.	Use AI to list differences between concepts → organize into tables → verify with textbooks.
15	AI-Assisted Physiology Study Guide	Develop a comprehensive study guide including important questions, diagrams, flowcharts, and revision tips.	Use AI to compile materials → organize into sections → edit and refine for clarity and exam usefulness.

