Course Title:	**Intermediary Metabolism**
Course Code:	**BTLMD208**
Course Coordinator	**Dr Raju Shankarayan**
Credits	**4-0-0=4**

Evaluation Scheme Total 100 Marks

Quiz (Total 20 Marks)				Assignment/Project (Total 20 marks) (Minimum Two Assignments or one Project)		Mid-Term	Major Examination	Total
Quiz I (5 marks	Quiz II (5 marks)	Quiz III (5 marks)	Quiz IV (5 marks)			20 marks) (1 ½ Hour Duration)	(40 marks) (3 Hour Duration	100 Marks

WEEKS	TOPICS TO BE COVERED
Week 1	Carbohydrate Metabolism: Glycolysis pathway & its regulation, energy yield
Week 2	Glycogenesis and Glycogenolysis and their pathways
Week 3	TCA cycle & its regulation, ATP yield in TCA cycle, anapleurotic reactions of TCA cycle
Week 4	Pentose-phosphate pathway and its significance
Week 5	Gluconeogenesis and its corerelation with other carbohydrate metabolic cycles, Electron transport chain
Week 6	Lipid Metabolism: Lipolysis, β-oxidation, energy yield, role of Carnitine.
Week 7	Fatty Acid Synthase complex, Lipogenesis, Elongation of Fatty acid (Mitochondrial elongation),
Week 8	Biosynthesis of TAG, Phospholipids. Disorders of lipid metabolism.
Week 9	Amino acids their structure, Different types of amino acids;
Week 10	Amino Acid Metabolism: General reactions of amino acids metabolism, regulation and biological significance
Week 11 (17^{th} -21^{st} March, 2025)	**Mid-Term**
2^{nd} May, 2025	**Showing of Mid-Term Answer Sheets**
Week 13	Metabolism of Glycine, Phenylalanine, Tyrosine, Serine, Methionine and Threonine; Urea cycle
Week 14	Nucleic acid, types of nucleic acids, Concept of nucleotides, purines and pyrimidines, Basics of Nucleic Acid metabolism
Week 15	Biosynthesis and regulation of Purines and Pyrimidines, Catabolism of Purines and Pyrimidines
Week 16	Biosynthesis of deoxy ribonucleotides, Ribonucleotides and thymidylate synthesis and their significance; Disorders of nucleic acid metabolism.

Week 17 (5th -9th May, 2025)	**Revision Week**
Week 18 (13th – 22nd May, 2025)	**Major Examinations**
29th May, 2025	**Showing of Major Exams Answer Sheets**

Course Outcomes: After successful completion of this course, students shall be able to:

CO1	Understand the different pathways of carbohydrate metabolism, their regulation and interactions among them.
CO2	Understand lipid metabolic pathways and the disorders associated with them.
CO3	Know the mechanisms of different reactions amino acid metabolism and interactions among them.
CO4	Comprehend the biosynthesis and regulations of Purines and Pyrimidines and various disorders associated with nucleic acid metabolism.

Recommended Books:

Sr.	Name of Book, Author, Publisher	Year of Publication / Reprint
1	Lehninger Principles of Biochemistry- 7th Edition, D.L. Nelson & M.M. Cox, WH Freeman publishers.	2017
2	Biochemistry, 4th Edition D. Voet & J.G. Voet, Wiley Publishers.	2010
3	Harper's Illustrated Biochemistry- 32nd Edition, Kennelly et al. Mc Graw Hill Publishers.	2022
4	Biochemistry- 8th Edition, J.M. Berg, G.J. Gatto, L. Stryer, McMillan Publishers.	2015

Calendar of Quizzes/Assignment etc. to be provided as per below details and exact dates to be fixed in consultation with other course coordinators to avoid overlap of Quizzes of different courses.

Component	Date
Quiz-I	**27th -31st, January 2025**
Quiz-II	**24th -28th February, 2025**
Assignment-I	**10th -12th February, 2025**
Mid-Term	**17-21st March, 2025**

Assignment-II/ **Project Submission**	**21st – 24th April, 2025**
Quiz-III	**7th – 11th April, 2025**
Quiz-IV	**28th April-2nd, May, 2025**
Major Exam	**13th – 22nd May, 2025**

Note:

1. **One surprise Quiz may be fixed out of Quiz-II, Quiz-III or Quiz-IV.**
2. **In case of any deviation in evaluation methodology for courses such as AEC/VAC/SEC shall be mentioned accordingly. Thus, same shall be approved by the next BOS of school if not done earlier.**

Signature of Course Coordinator : Dr Raju Shankarayan