

ANSC*4470 Animal Metabolism

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Lectures Rm 121 MCKN Mon, Wed, Fri 09:30 - 10:20

course description

We will study how regulation of the main pathways of carbohydrate, lipid and amino acid metabolism in gut, liver, muscle, adipose and mammary glands is coordinated so that farm animals may grow and lactate under a wide range of environmental influences. The quantification of metabolic fluxes using tracer kinetic methodology in organ, cell and homogenate preparations will be emphasized for its importance in mathematical model construction. Explanations of metabolic energy transformations will be a component of this course. Lectures will be interspersed with thorough in-class review of papers from scientific journals. Occasional assignments will be given for handing in on the following class day and bi-weekly quizzes will be given during classtime.

course outline

	lecture subject
Jan 7	introductory questions and setup
Jan 9	introductory questions and setup
Jan 11	blood pools and tracer kinetics
Jan 14	blood pools and tracer kinetics
Jan 16	blood pools and tracer kinetics
Jan 18	quiz
Jan 21	glucose transport
Jan 23	glucose transport
Jan 25	glycolysis
Jan 28	glycolysis
Jan 30	TCA cycle
Feb 1	quiz

Feb 4	TCA cycle
Feb 6	TCA cycle
Feb 8	gluconeogenesis
Feb 11	gluconeogenesis
Feb 13	gluconeogenesis
Feb 15	quiz
Feb 25	glycogen metabolism
Feb 27	lactose and hexose metabolism
Mar 1	<i>journal article review</i>
Mar 4	<i>journal article review</i>
Mar 6	<i>journal article review</i>
Mar 8	quiz
Mar 11	fatty acid oxidation
Mar 13	ketogenesis
Mar 15	lipogenesis
Mar 18	lipogenesis
Mar 20	lipogenesis
Mar 22	quiz
Mar 25	protein metabolism
Mar 27	protein metabolism
Mar 29	amino acid catabolism
Apr 1	integration of metabolism – energetics
Apr 3	integration of metabolism – energetics
Apr 17	final exam

marking scheme

assignments	20%
quizzes	50 (best 4 out of 5)
final exam	30