DEPARTMENT OF BIOCHEMISTRY & MOLECULAR BIOLOGY
SCHOOL OF BIOLOGICAL SCIENCES
CENTRAL UNIVERSITY OF KERALA
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CUK/SBS/BCMB/BOS/Minutes/Feb-2021 12.02.2021

Minutes of BOS Meeting held on 12th Feb 2021, 11 AM through online mode in the Department of Biochemistry and Molecular Biology, Central University of Kerala (Google Meet Link: https://meet.google.com/mdf-thev-vyh?hs=224)

Agenda:

1) Revision of the syllabus
2) Inclusion of online courses. Eg: MOOC
3) Any other items

Members attended the meeting

SI No	Name	Designation
1	Dr Rajendra Pilankatta, Head, BCMB, CUK	Chairperson
2	Prof. D Govinda Rao, Dean SBS, CUK	Member
3	Prof Annie Abraham, University of Kerala, Thiruvanathapuram	External Member
4	Prof Sathisha G J, Kuvempu University	External Member
5	Prof K Arunkumar, HOD, PLS, CUK	Member
6	Dr R Aswati Nair, Dept of BCMB, CUK	Member
7	Dr Thejaswini Venkatesh, Dept of BCMB, CUK	Member
8	Dr CN Ramchand Ph.D, CEO, Saskin Life Sciences Pvt Ltd	Special Invitee
9	Prof Karunagaran , IIT Madras, Chennai	Special Invitee
10	Dr B K Ajaikumar, IIT Guwahati.	Special Invitee
11	Dr Sameer Kumar VB, Dept of BCMB, CUK	Special Invitee

Chairperson, BOS welcomed the distinguished members of BOS and special invitees from Premier educational institutions of India and established industries. The Chairperson presented the agenda and the following resolutions were made

1. Revision of Syllabus:
   The draft syllabus of the revised version was circulated to the BOS members and special invitees on 10th Feb 2021 by email. The major highlights of modifications of syllabus resolved by the members are given below,

- The members approved the program outcomes, specific outcomes and course outcomes as detailed in the revised syllabus.
- BBM 5102: It was resolved to rearrange the Unit I and II along with the addition of Reverse Phase Chromatography
- BBM 5103: Ca2+ and Fe transport was added in the Unit II. A section on Connective tissue was added in Unit III.
- BBM 5104: Physiological Chemistry course was renamed as Molecular Physiology
- BBM 5191: Bioanalytical Technique section was added.
- BBM 5192: The course was renamed as Biomolecules and Cell Biology Lab, wherein quantitative analysis of Biomolecules was added. It wsa also resolved to include Apoptosis assay and Flow cytometric analysis in the course
- BBM 5201: Units were rearranged so as to favor the teaching the topic on oxidative phosphorylation after the completion of metabolism of carbohydrates section.
- BBM 5202: The credit for the course was reduced to 3 by removing the unit on Enzyme Technology.
- BBM 5203: The credit was increased to 4 by adding Tumor Immunology and Vaccines sections.
- BBM 5292: Immunocytochemistry practical component was added.
- BBM 5302: Previously existing course on Molecular Endocrinology was removed and a new course on skill based Molecular Diagnostics (3 Credit) was added. The course contains practical session on molecular diagnosis of cancer and viral infections. The sections on Mamaprint, Coloprint. Pharmacogenomics and personalized medicine were also incorporated.
- BBM 5303: Tet – on and Tet- Off systems were added. Use of TALEN, ZFN and CRISPR-CAS in genome editing was also incorporated.
- BBM 5304: Included Hedgehog signaling.
- BBM 5305: A new course on microbiology (3 Credit) was added.
- BBM 5006: The elective course was revised by including emerging and re-emerging viruses including SARSCoV2

- BBM 5018: ANIMAL MODELS IN BIOMEDICAL RESEARCH (3 Credit) was resolved to be included as elective.

BOS members noted the valuable suggestions made by Prof. Sateesh C Raghavan, Special Invitee from Dept of Biochemistry, IISc, Bnagalore *in absentia.* Necessary incorporation was made in the syllabus as per the suggestion. However, BOS members resolved to retain the courses such as Biostatistics as well as Ecology and Evolution as elective courses.

The committee assessed that there was a revision of the content of the syllabus more than 20 percent.

Revised syllabus has been appended as (**Annexure I**)

2) Inclusion of online courses. Eg: MOOC

The committee discussed in detail regarding the courses available in the online platforms for the students of MSc Biochemistry such as MOOC and NPTEL etc. The list of MOOC courses given in the end of the syllabus as "Annexure II" has been approved by the committee. Further, the committee entrusted the faculty council for adding new MOOC courses as per the requirement.

The meeting was ended by the Vote of thanks by Dr Thejaswini Venkatesh.

Sd
HOD, BCMB

(Dr. D. Govinda Rao)

(Dr. R. ASWATI NAIR)

(Dr. V.B. Sambasivam)

(Dr. Thejaswini V.)

BBM 5104 MOLECULAR PHYSIOLOGY (3-1-0-3)

Course Outcomes:

Students will be able to

1: Understand the role of various digestive secretions in course of digestion of food components and absorption mechanisms

2: Understand composition of blood, metabolism of hemoglobin and clotting mechanisms and also connective tissue components

3: Understand how oxygen and carbon dioxide interacts with hemoglobin, factors influencing interaction and their transport mechanisms. Water, electrolyte and acid –base balance mechanisms

4: Understand xenobiotics and detoxification mechanisms of liver. Nerve impulse generation and transmission across neuron and between neurons and role of neurotransmitters

5: Understand the mechanisms involved in muscle contraction and relaxation and photochemistry of Vision.

UNIT-I

Digestion and Absorption: Digestion, absorption, role of salivary gland, stomach, pancreas, intestine, liver, gall bladder, secretion of digestive enzymes and HCl, regulation of secretion by secretagogues.

(a)Digestion and absorption of carbohydrates: sodium dependent glucose transport

(b) Digestion and absorption of proteins: exopeptidases, endopeptidases, action of pepsin, action of trypsin, gastric, intestinal and pancreatic phases of protein digestion. Absorption of small peptides and free amino acids, specific transport systems.

(c) Digestion and absorption of lipids: role of bile acids, action of gastric and pancreatic lipases, micellar formation, absorption of lipids

UNIT-II

Blood: composition of blood, functions, physical characters, plasma proteins, separation of plasma proteins, functions of plasma proteins, formed elements. RBC, WBC, platelets and their functions, erythropoiesis, metabolism of erythrocytes, synthesis of hemoglobin, catabolism of hemoglobin, formation of bile pigments, blood coagulation-fibrinolysis and anti-clotting system, anti-clotting drugs.

UNIT-III

Chemistry of Respiration: respiratory gases, reactions of hemoglobin with oxygen, carbon di oxide, protons and 2,3 bisphsophoglycerate, mechanism of hemoglobin action, factors influencing combination of oxygen with hemoglobin, influence of 2,3 bisphsophoglycerate, oxygen transport, carbon dioxide transport, isohydric shift and chloride shift.

Water, electrolyte and Acid –base balance: water metabolism. Homeostatic controls, role of kidney in water and osmolality control. Structure and function of nephron, renal blood flow and