Address : UNIREG
Telephone No. : 2419677/2419361
Fax : 0821-2419363/2419301

e-mail : registrar@uni-mysore.ac.in
www.uni-mysore.ac.in

UNIVERSITY OF MYSORE

Estd. 1916

VISHWAVIDYANILAYA KARYA SOUDHA
CRAWFORD HALL, POST BOX NO. 406
MYSORE-570 005

No.AC.2(S)/384/14-15 Dated: 10-06-2015

NOTIFICATION

Sub: Changes in the Scheme of study and paper from the Soft core to Hard core from the Academic Year 2015-16.

Ref: 1. Proceedings of Faculty of Science & Technology Meeting held on 02-02-2015.
2. Proceedings of the Meeting of Academic Council held on 27-03-2015.

The Board of Studies in Biotechnology (PG) at its meeting held on 20-11-2014 has resolved to change the paper: "Immunotechnology" from soft core to hard core, and Paper: "Biophysics & structural biology" from soft core to hard core.

The Practical component of Hard Core Paper: "Plant Biotechnology" has been strengthened by addition of new practical experiments.

The Faculty of Science and Technology and the Academic Council at their meetings held on 02-02-2015 and 27-03-2015 respectively have approved the above proposals and the same is notified.

The copy of Changes in the Scheme of study and paper from the Soft core to Hard core is annexed.

DRAFT APPROVED BY THE REGISTRAR

16/6.

REGISTRAR.

12/6/15

12/6

To

1. The Registrar (Evaluation), University of Mysore, Mysore.
2. The Chairperson, BOS/DOS in Biotechnology, MGM.
3. The Dean, Faculty of Science & Technology, DOS in Earth Science, MGM.
4. The Principals of the Affiliated Colleges running MSc in Biotechnology.
5. The Director, College Development Council, UOM, Mysore.
6. The Coordinator, Online & Outreach programme, Parakalamatta, MGM.
7. The Deputy/Assistant Registrar (Evaluation), University of Mysore, Mysore.
8. The Supdt., A.B., Academic Section /PMEB, UOM., Mysore.
9. The P.A. to the Vice-Chancellor/Registrar/Registrar(Evaluation), UOM., Mysore.
10. The Case Worker, AC.7, Academic Section, University of Mysore, Mysore.
11. The Section Guard File(Supdt.AC.2), A.B., A.C., UOM.
12. The Schedule File.

Annexure -I

University of Mysore
Department of Studies in Biotechnology
Manasagangotri, Mysore – 570 006

Scheme of Study – Revised (Academic Year 2015-16)

Master's Degree Program in Biotechnology

Credits to be earned	**76**
Core papers	52 credits
Soft core	20 credits
Open elective paper*	04 credits

*Open elective shall be entirely from different discipline of study

Credit matrix for Master's Degree Program in Biotechnology

Credits to be earned	**I**	**II**	**III**	**IV**	**Total Credits**
Hard Core	12	12	18	10	52 credits
Soft Core	04	04	04	08	20 credits
Open elective	-	04	-	-	04 credits
Total	16	20	22	18	76

I Semester

Paper Code	**Title of the course**	**HC/SC/ OE/E/ Pr./etc**	**L**	**T**	**P**	**Credits**
	Bioanalytical Techniques	HC	3	1	0	4
	Microbiology	HC	3	1	0	4
	Practical-1	HC	0	0	4	4
SOFTCORE (Choose any ONE from the below listed)						
	Enzymology & Metabolism	SC	3	1	0	4
	Biophysics and Structural Biology	SC	3	1	0	4

II Semester

Paper Code	**Title of the course**	**HC/SC/ OE/E/ Pr./etc**	**L**	**T**	**P**	**Credits**
	Advanced Molecular Biology	HC	3	1	0	4
	Gene Technology	HC	3	1	0	4

	Practical-2	HC	0	0	4	4
SOFTCORE (Choose any ONE from the below listed)						
	Molecular Genetics	SC	3	1	0	4
	Food & Environmental Biotechnology	SC	3	1	0	4
	OPEN ELECTIVE (Choose from other department)	OE				4
	Applied Biotechnology (For other discipline students)	OE	3	1	0	4

III Semester

Paper Code	Title of the course	HC/SC/OE /E/ Pr./etc	L	T	P	Credits
	Plant Biotechnology	HC	3	1	0	4
	Animal Biotechnology	HC	3	1	0	4
	Immunotechnology	HC	3	1	0	4
	Practical-3	HC	0	0	6	6
SOFTCORE (Choose any ONE from the below listed)						
	Biostatistics & Bioinformatics	SC	3	1	0	4
	Seed Health & Diagnostics	SC	3	1	0	4

IV Semester

Paper Code	Title of the course	HC/SC/OE /E/ Pr./etc	L	T	P	Credits
	SOFTCORE (Choose any TWO from the below listed)					
	Bioprocess Technology	SC	3	1	0	4
	Cell Signalling & Communication	SC	3	1	0	4
	Cancer Biology	SC	3	1	0	4
	Molecular Phytobacteriology	SC	3	1	0	4
	Dissertation*	HC	0	4	6	10

*** Dissertation should be in-house only and should be allotted to the students in the III Semester itself.**

Note:

Each course (Theory) = 48 h per Semester (3h per weeks)
Each course (Practical) = 192 h per Semester (12h per week)
Each course (Tutorial) = 32 h per Semester (2h per week)
Dissertation = 320 h per Semester (20h per week)

M.Sc Biotechnology
Semester III
Practical -3 (HC)

Existing	Modified
Plant Biotechnology • Preparation of plant tissue culture media • **Organ cultures**: Shoot tip, nodal, anther and leaf cultures • Protoplast isolation technique • Synthetic seeds • TLC of plant secondary metabolites • Alkoloid estimation • Seed structure • *Agrobacterium* culture, transformation and selection of transformants • GUS expression in transformed tissues	**Plant Biotechnology** • Preparation of plant tissue culture media • Callus induction • Induction of somatic embryogenesis • Establishment of cell suspension cultures for plant secondary metabolite production • Encapsulation of somatic embryos and production of synthetic seeds • **Organ cultures**: Shoot tip, nodal, anther and leaf cultures • Micropropagation technique • Protoplast isolation technique • **Secondary metabolite estimations:** Colorimetry and TLC methods • Seed Structure • *Agrobacterium*-mediated genetic transformation • GUS expression in transformed tissues
Animal Biotechnology • Preparation of media, culture and maintenance of cell lines, trypsinization • Culture of transformed cells • MTT assay for cytotoxicity • ^{3}H-Thymidine uptake assay for cell proliferation • Cryopreservation and revival of cells • Transient transfection assay using RSV β gal gene for transfer • In vitro growth of blood vessels • Lymphocyte preparation	**Animal Biotechnology** • Preparation of media, culture and maintenance of cell lines, trypsinization • Culture of transformed cells • MTT assay for cytotoxicity • ^{3}H-Thymidine uptake assay for cell proliferation • Cryopreservation and revival of cells • Transient transfection assay using RSV β gal gene for transfer • In vitro growth of blood vessels • Lymphocyte preparation
Immunotechnology • Preparation of antigen and antibody production. • Purification of IgG. • Slide agglutination test/ Blood grouping. • Immunoprecipitation test- Ouchterlony double diffusion. • Immunoaffinity purification of IgG. • Immunofluorescence for localization of an antigen. • ELISA for quantification of an antigen. • Rossette assay. • Assay for activation of phagocytic cells. • Western blotting and detection.	**Immunotechnology** • Preparation of antigen and antibody production. • Purification of IgG. • Slide agglutination test/ Blood grouping. • Immunoprecipitation test- Ouchterlony double diffusion. • Immunoaffinity purification of IgG. • Immunofluorescence for localization of an antigen. • ELISA for quantification of an antigen. • Rossette assay. • Assay for activation of phagocytic cells. • Western blotting and detection.