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UNIVERSITY OF MYSORE

(Celebrating the Centenary year 2015-16)

Vishwavidyanilaya Karya Soudha,
Crawford Hall, Mysore.

No.AC.2(s)/332/2015-16

Dated: 28-03-2016

CORRIGENDUM

Sub: changes in the Scheme of study and paper from the soft core to hard core from the Academic Year 2015-16.

Ref: 1. Decision of the Faculty of Science & Technology Meeting held on 02-02-2015
2. Decision of the Academic Council meeting held on 27-03-2015.
3. Proceedings of the Meeting of BOS in Biotechnology (PG) held on 20-11-2014.
4. This office Notification No. AC2s/384/14-15, dated: 10-06-2015

* * * * *

In continuation of this office Notification cited under reference (4) above, earlier the paper:- **"Biophysics & Structural biology", has been changed from soft core to hard core, now it has been changed from hard core to soft core.**

The other matters in the Notification under reference (1) remains unaltered and the details of the recent corrigendum with modifying paper can be downloaded from the university website www.uni-mysore.ac.in

DRAFT APPROVED BY THE REGISTRAR

REGISTRAR

28/3/16 25/3/16

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), UOM, 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, AC7., Academic Section, UOM, Mysore.
11. 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.