Resolution Number: AC/II(23-24).2.RUS7

S. P. Mandali's
Ramnarain Ruia Autonomous College
(*Affiliated to Mumbai University*)

RUIA COLLEGE
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Syllabus for UG
Program: S.Y.B.Sc. Life Science

Program Code: RUSLSc

Vocational Skill Course (VSC)

(As per the guidelines of National Education Policy 2020

For **Academic year 2024-25**)

(Choice based Credit System)

Course Code: RUSVSCLSc.O201
Course Title: VSC Techniques in Life Science - III

COURSE OUTCOMES:

COURSE OUTCOME	DESCRIPTION
	Students will gain insights about following;
CO 1	The allelic frequencies that probably operate , correlations and other statistical applications will reveal the changes in population studies.
CO 2	To know about virtual libraries and databases

SY - VSC		Techniques in Life Science - III	2 Credits
RUSVSCLSc.O201		**Evolutionary Biology,Biostatistic and Bioinformatics in Population Studies-I** 1. Use of various Cloud platforms – Google, Onedrive and Use of various Internet Protocols – HTTPS, FTP, SMTP. 2 . Identify sequence and database entry of a species in various databases – 3. Virtual libraries -and its applications. Introduction to general Databases 4. BLAST search Bioinformatics- Phylogenetic analysis using Globin gene and Mitochondrial DNA. 5. Study of Evolution in the context of human genetic diseases. (BRCA1 / Huntington's/ Thalassemia). 6.Populations and allelic frequencies. Hardy Weinberg Equilibrium, change in gene frequencies due to selection, mutation, migration and genetic drift (Founder's effect). 7. **Biostatistics (using biological data)** 1.Probability 2.Normal Distribution and Normal curve 3.Correlation 4 Regression Analysis . (MS Excel Optional)	

		Prelab sessions are kept for introduction and conceptual understanding about the experiments and post lab sessions for clearing doubts and guiding students to write lab reports.	

REFERENCE

	RUSVSCLSc.O201
1.	Methods in Biostatistics of Medical students and Research Workers B.K.Mahajan, 8th Edition, (2010)
2.	Fundamental concepts of Bioinformatics
3.	Exploring Bioinformatics – A Project-based Approach St. Clair and Visick (2010) Jones and Bartlett Publishers
4.	Bioinformatics for Dummies Jean-Michel Claverie, Cedric Notredame, 2003, John Wiley & Sons

Modality of Assessment

Practical Examination Pattern:

A) Internal Examination:20 Marks

Particulars	Marks
Journal	05
Experimental tasks	15
Total	**20**

B) External Examination:30 Marks
Semester End Practical Examination:

Particulars	Marks
Main question to perform Experimental task/Estimation/ dissection/Bioinformatics statistical analysis/ project work	20
Identifications	10
Total	**30**

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