

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

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



**Syllabus for UG**

**Program: S.Y.B.Sc. Life Science**

**Program Code: RUSLSc**

**Skill Enhancement Course (SEC)**

(As per the guidelines of National Education Policy 2020

For **Academic year 2024-25**)

(Choice based Credit System)

**Course Code: RUSSECLSc.E211**

**Course Title: SEC Techniques in Life Science - IV**

**COURSE OUTCOMES:**

<b>COURSE OUTCOME</b>	<b>DESCRIPTION</b>
	<b>Students will gain insights about following;</b>
<b>CO 1</b>	Students should study; human karyotypes, presence of giant chromosomes in salivary glands of chironomus larvae.
<b>CO 2</b>	To understand the concept of chromatography techniques; separation of carbohydrates and plant pigment using chromatography techniques.
<b>CO3</b>	To study pollen germination and the effect of plant hormones on overall growth of plants. To isolate microorganisms present in soil and water samples using isolation techniques.

<b>RUSSE CLSc.E 211</b>		<b>SEC Technique in Life Science - IV</b>	<b>2 Credits</b>
	<b>SEC</b>	<p><b>SEC Techniques in Life sciences -IV</b></p> <p>1.Human Karyotyping- Normal and Abnormal (Numerical and Structural)</p> <p>2. Study of Giant Chromosome from Salivary Glands of <i>Chironomus</i> Larvae</p> <p>3.Chromatography of Sugars – Circular Paper <b>C, T</b> <i>(Separation of carbohydrates and detection by colour reaction)</i></p> <p>4.Thin Layer Chromatography for separation of Plant Pigments.(Slide technique) <b>C,T,R</b> <i>(Separation techniques for charged, uncharged materials based on solvent partition)</i></p> <p>5. Streak plating (T, Pentagon and Quadrant –Any 2) to isolate microorganisms from a mixed culture using differential media.</p> <p>6. Study of pollen germination Using <i>Vinca</i> flower (<i>in vitro</i>). / (<i>in Vivo</i>)</p> <p>7.Principle and working on Widal Test- Qualitative.</p> <p>8. Detection of activity of plant hormones (Dose dependent response).</p> <p>9.Field visit/ Industrial Visit/ Laboratory Visit</p>	

	<b>RUSSECLSc.E211</b>
1.	Population Genetics, M.B.Hamilton, (2009). Wiely-Blackwell,
2.	Population Genetics : A Concise Guide J.H.Gillespie, (2004) Johns Hopkins University Press.
3.	Methods in Biostatistics of Medical students and Research Workers B.K.Mahajan, 8th Edition, (2010) Jaypee.

4.	Fundamental concepts of Bioinformatics
5.	Exploring Bioinformatics – A Project-based Approach St. Clair and Visick (2010) Jones and Bartlett Publishers
6.	Bioinformatics for Dummies Jean-Michel Claverie, Cedric Notredame, 2003.

Ramnarain Ruia Autonomous College

## Modality of Assessment

### Practical Examination Pattern:

#### A) Internal Examination:20 Marks

Particulars	Marks
Journal	05
Experimental tasks	15
<b>Total</b>	<b>20</b>

#### 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
<b>Total</b>	<b>30</b>

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