

Lecture Plan Practical							
Name of the College: Government College of Arts, Science and Commerce. Sanquelim - Goa							
Name of Faculty: Dr. Vaibhav Chindarkar				Subject: Zoology			
Paper code: ZOO-304 Practical Genetic Engineering				Program: T.Y. BSc		Division: A	
Academic year: 2025- 2026				Semester: VI		Total Practical Hrs: 60	
Student Learning Outcome: The student will be able to Perform and interpret basic microbiological laboratory techniques for culturing and characterization of bacteria and will be able to handle DNA samples, perform restriction digestion and estimate the size of DNA samples.							
Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books
December	01-12-2025	06-12-2025	02	Sterilization techniques.		Actual Experiment to be performed	Basic Practical Microbiology – A Manual. Microbiology Society, Charles Darwin House, 12 Roger Street, London, UK.

December	08-12-2025	13-12-2025	02	Sterilization techniques.		Actual Experiment to be performed	Basic Practical Microbiology – A Manual. Microbiology Society, Charles Darwin House, 12 Roger Street, London, UK.
December	15-12-2025	20-12-2025	02	Sterilization techniques.		Actual Experiment to be performed	Basic Practical Microbiology – A Manual. Microbiology Society, Charles Darwin House, 12 Roger Street, London, UK.
December	22-12-2025	24-12-2025	02	Preparation of media for cell culture (agar plate, slants, deep).		Actual Experiment to be performed	Basic Practical Microbiology – A Manual. Microbiology Society, Charles Darwin House, 12 Roger Street, London, UK.
January	02-01-2026	03-01-2026	02	Preparation of media for cell culture (agar plate, slants, deep).		Actual Experiment to be performed	Basic Practical Microbiology – A Manual. Microbiology Society, Charles Darwin House, 12 Roger Street, London, UK.

January	05-01-2025	10-01-2025	02	Isolation and enumeration of bacteria (spread plate and streak plate method).		Actual Experiment to be performed	Basic Practical Microbiology – A Manual. Microbiology Society, Charles Darwin House, 12 Roger Street, London, UK.
January	12-01-2025	17-01-2025	02	Isolation and enumeration of bacteria (spread plate and streak plate method).		Actual Experiment to be performed	Basic Practical Microbiology – A Manual. Microbiology Society, Charles Darwin House, 12 Roger Street, London, UK.
January	19-01-2026	24-01-2026	02	Gram staining and Negative staining of bacteria.		Actual Experiment to be performed	Basic Practical Microbiology – A Manual. Microbiology Society, Charles Darwin House, 12 Roger Street, London, UK.
January	27-01-2026	31-01-2025	02	Methods for preservation of bacterial culture- Glycerol stock culture and stabs.		Actual Experiment to be performed	Basic Practical Microbiology – A Manual. Microbiology Society, Charles Darwin House, 12 Roger Street, London, UK.

February	02-02-2026	07-02-2026	02	Culture preparation for IMVic tests		Actual Experiment to be performed	Basic Practical Microbiology – A Manual. Microbiology Society, Charles Darwin House, 12 Roger Street, London, UK.
February	09-02-2026	14-02-2026	02	Biochemical tests: IMViC.		Actual Experiment to be performed	Basic Practical Microbiology – A Manual. Microbiology Society, Charles Darwin House, 12 Roger Street, London, UK.
February	16-02-2026	21-02-2026	02	Biochemical tests: IMViC.		Actual Experiment to be performed	Basic Practical Microbiology – A Manual. Microbiology Society, Charles Darwin House, 12 Roger Street, London, UK.
February	23-02-2026	28-02-2026	02	Restriction digestion of suitable DNA sample (plasmid or lambda DNA) by any restriction enzyme followed by gel electrophoresis.		Actual Experiment to be performed	Molecular Biology Practical Handbook. Dr. S. Sivaranjani, Dr. S. Ramadevi, V. Ramabhai, P. Everest Helen Rani and A. Gejalakshmi. AkiNik Publications. Molecular Biology A Practical Manual Paperback.

							by P V G K Sarma. MJP Publisher; First Edition (1 November 2021); MJP Publisher
March	02-03-2026	07-03-2026	02	Restriction digestion of suitable DNA sample (plasmid or lambda DNA) by any restriction enzyme followed by gel electrophoresis.		Actual Experiment to be performed	Molecular Biology Practical Handbook. Dr. S. Sivaranjani, Dr. S. Ramadevi, V. Ramabhai, P. Everest Helen Rani and A. Gejalakshmi. AkiNik Publications. Molecular Biology A Practical Manual Paperback. by P V G K Sarma. MJP Publisher; First Edition (1 November 2021); MJP Publisher
March	09-03-2026	14-03-2026	02			Actual Experiment to be performed	Molecular Biology Practical Handbook. Dr. S. Sivaranjani, Dr. S. Ramadevi, V. Ramabhai, P. Everest Helen Rani and A. Gejalakshmi. AkiNik Publications. Molecular Biology A Practical Manual Paperback. by P V G K Sarma. MJP Publisher; First Edition (1 November 2021); MJP Publisher
				Ligating suitable DNA sample (Restriction digest) followed by gel electrophoresis.			

March	16-03-2026	21-03-2026	02	Ligating suitable DNA sample (Restriction digest) followed by gel electrophoresis.		Actual Experiment to be performed	<p>Molecular Biology Practical Handbook. Dr. S. Sivaranjani, Dr. S. Ramadevi, V. Ramabhai, P. Everest Helen Rani and A. Gejalakshmi. AkiNik Publications.</p> <p>Molecular Biology A Practical Manual Paperback. by P V G K Sarma. MJP Publisher; First Edition (1 November 2021); MJP Publisher</p>
March	23-03-2026	28-03-2026	02	DNA sequencing through charts (Sanger's method).		Actual Experiment to be performed	<p>Molecular Biology Practical Handbook. Dr. S. Sivaranjani, Dr. S. Ramadevi, V. Ramabhai, P. Everest Helen Rani and A. Gejalakshmi. AkiNik Publications.</p> <p>Molecular Biology A Practical Manual Paperback. by P V G K Sarma. MJP Publisher; First Edition (1 November 2021); MJP Publisher</p>

*** Assessment Rubrics**

Component	Max Marks
Practical	25

