

Teaching

Under Graduate: Courses offered (as per 5th Dean's committee recommendations)

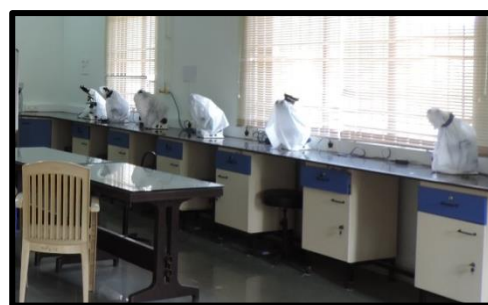
Sr. No.	Subject Title with Subject Code	Credit Hours	Semester in which subject offered
Courses Offered in B. Sc. (Hons.) Agriculture			
01	Ag Micro 1.1: Agricultural Microbiology	(1+1)	1 st
02	Ag Micro 6.2: Biopesticides and Biofertilizers	(2+1)	6 th
03	Plant Path. 7.2: Student READY Program Microbiology component	-	7 th
04	Ag Micro 8.2: Production Technology for Bio agents and Biofertilizers (Biofertilizer Module)	(0+5)	8 th
Course Offered in B.Sc. (Hons.) Horticulture			
05	BSC 1.3: Introductory Microbiology	(1+1)	1 st
Course Offered in Diploma Agriculture			
06	Ag Micro 5.1: Agricultural Microbiology	(1+1)	5 th
Course Offered in Diploma Horticulture			
07	BSC 5.5: Introductory Microbiology	(1+1)	3 rd



Facilities Available for Undergraduate Teaching:

Sr No	Name of lab/utility	Size / Capacity	Functional utility / nature of use	Existing Facilities / Instruments/farm equipments (provide list)
Laboratory				
1	UG laboratory	137.05 m ² (30 students at a time)	Conducting practical classes and related work of undergraduate students	Microscope (30) with working bench, LCD projector and power backup
2	Instrumentation Lab-1	25.2 m ²	To carry out different analysis related to practical	Shakers, Lyophilizer, homogenizer, colony counter, flame photometers, stereo microscope, inverted microscope etc.
3	Facilities for providing hands on training to students under student READY and ELP program for biofertilizer production - Fermentor (10 L capacity) as well as shake flask production technology. - Automatic bottling unit (300 bottles/hr. capacity)			

UG Laboratory:



Students trained under ELP program (2016-2021)

Year	No. of Students Trained	Liquid Biofertilizer Products Manufactured
2016-17	30 (Basic science group as per 4 th Dean)	<i>Azotobacter</i> (N fixer) <i>Azospirillum</i> (N fixer) <i>Rhizobium</i> (N fixer) for Pulses and Oilseeds - PSB (P solubilizer) - KMB (K mobilizer) - Bio NP Consortium (N fixer + P solubilizer)
2017-18	30	
2018-19	21	
2019-20	23	
2020-21	22	
2021-22	25	
2022-23	28	

2023-24	23	Bio NPK Consortium (N fixer + P and K solubilizer/mobilize)
Total	172	

Practical Exposure to Undergraduate Students

Student working in Laminar Air Flow



Media Preparation Laboratory



Mass Production



Sterilization of Media



Biofertilizer Product Ready to Dispatch



Biofertilizer Bottle Filling



Teaching to ELP Students



Fermentation Unit



**Post Graduate Teaching: Courses offered by department in Post Graduate Programme
(As per 5th Dean's Committee)**

Sr. No.	Code	Course Title	Credits	Semester
1	MICRO 501	Techniques in Microbiology	0+2	Odd
2	MICRO 502*	Principles of Microbiology	3+1	
3	MICRO 503*	Microbial Physiology and Metabolism	3+1	
4	MICRO 509	Environmental Microbiology	2+1	
5	MICRO 605**	Plant-Microbe Interactions	2+1	
6	MICRO 510	Industrial Microbiology	2+1	
7	MICRO 511	Biofertilizer Technology	2+1	
8	MICRO 512	Cyanobacterial and Algal Biotechnology	2+0	
9	MICRO 591	Master's seminar	1+0	
10	MICRO 599	Master's research	20	
11	MICRO 691	Doctoral seminar -I	1+0	
12	MICRO 692	Doctoral seminar –II	1+0	
13	MICRO 699	Doctoral research	45	
14	MICRO 504	Microbial Genetics	2+1	Even
15	MICRO 505* / SOIL 506 @	Soil Microbiology	2+1	
16	MICRO 506*	Microbial Biotechnology	2+1	
17	MICRO 507*	Food Microbiology	2+1	
18	MICRO 508	Bacteriophages	1+1	
19	MICRO 601**	Improvement in Fermentation Technology	2+1	
20	MICRO 602	Microbial Physiology and Regulation	2+0	
21	MICRO 603** SOIL 609 #	Recent Development in Soil Microbiology	2+0	
22	MICRO 604	Recent Approaches in Environmental Microbiology	2+0	
23	MICRO 591	Master's seminar	1+0	
24	MICRO 599	Master's research	20	
25	MICRO 691	Doctoral seminar –I	1+0	
26	MICRO 692	Doctoral seminar -II	1+0	
27	MICRO 699	Doctoral research	45	

*Compulsory for Master's programme; **Compulsory for Doctoral programme.

@ Cross-listed with Soil 506; # Cross-listed with Soil 609 (2+1)

Facilities Available for Post Graduate Teaching and Research

Sr No	Name of Class rooms	Sitting Capacity	Functional utility / nature of use	Existing Facilities
A. Classrooms				
1	PG classroom	30	Used in PG teaching	Chairs with side handle, white board, projector, computer and podium
2	Conference hall	90	Used for PG teaching, seminar, training, conference	Chairs, podium, mike and sound system with projector and motorized screen
3	Departmental Library	05	Students can refer books of Microbiology subject	Chair, Table, Library cupboards having more than hundred books and 51 thesis of PG students for reference
B. Laboratories				
4	PG Laboratory	60.8 m ²	Conducting practical classes of postgraduate and polytechnic students	Autoclave, Laminar air flow, Plant growth chamber, incubator, water bath,, microscope, tissue culture rack, working table, storage for chemicals, glass wares
5	Molecular laboratory	16.0 m ²	For molecular analysis of microbial and soil samples	Gradient PCR, Real Time PCR, transilluminator, Bio-spectrophotometer, cooling microcentrifuge, Gel dryer, Denaturing Gradient Gel Electrophoresis, Gel documentation system
6	Instrumentation Lab-2	18.9 m ²	For placing instruments useful for PG research	Basket centrifuge, UV-lyophilizer, Visible spectrophotometer, microwave oven
7	Chromatography laboratory	16.0 m ²	For analysis of the PG research samples	GC system, HPLC, CO ₂ incubator, sonic bath
8	Algal Lab	60.8 m ²	Dedicated facility for research on Algal biofuel and algal biofertilizer	LAF, BOD incubator, Environmental shaker, water bath, microscope, tissue culture rack, working table, storage for chemicals, glass wares
9	Myco-Bio Lab	16.0 m ²	Dedicated facility for research on Plant Growth Promoting Fungi	LAF, BOD incubator, Rotary shaker, microscope, Incubation rack, microwave oven, working table, storage for chemicals, glass wares

C. Processing / Storage facility				
1	Backyard shade		For conducting pot experiments	
2	Cold room on first floor	12.0 m ²	For storage and preservation of microbial cultures and bulk fermented broth	

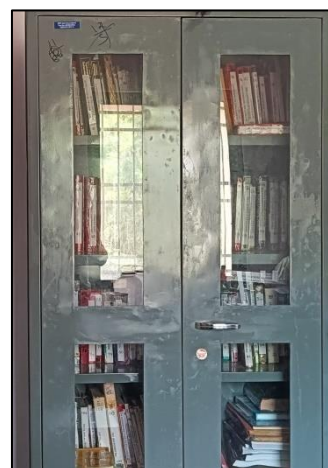
Note: Department has two floored building for UG & PG teaching as well as research facility total 973.2 m².

PG Class room / Laboratory / Seminar / Conference room with best facilities like smart class rooms



Departmental Library and Reading room:

Having more than 200 books and PG thesis for students reference



Practical Exposure to Postgraduate Students various laboratories



Microbial Biotechnology Laboratory



Chromatography Laboratory



PG Working Laboratory



Central Instrument Laboratory I



Central Instrument Laboratory II



Algal Mass Production Laboratory

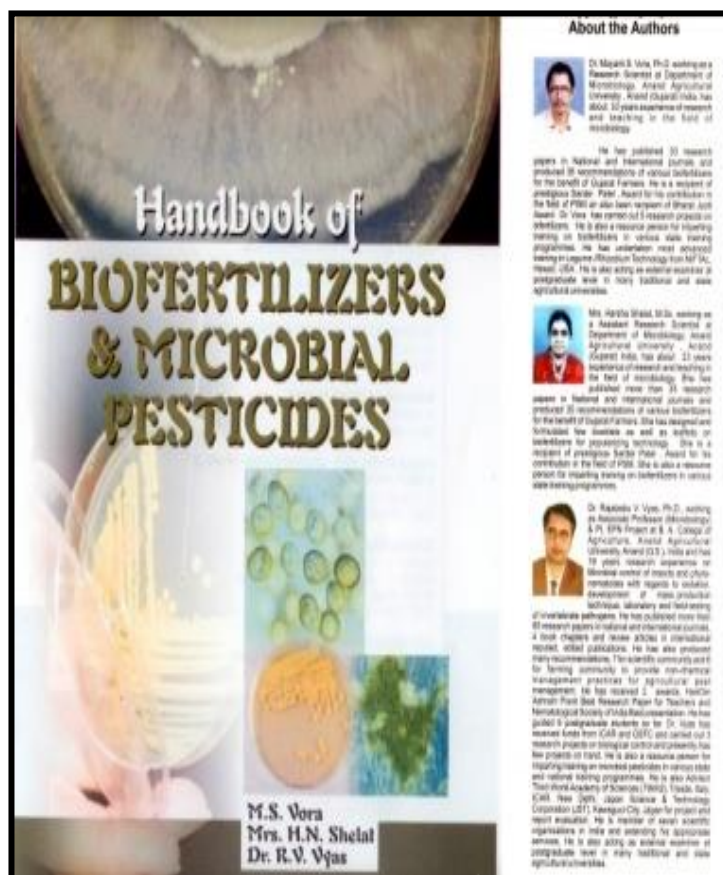


Myco-Bio Laboratory



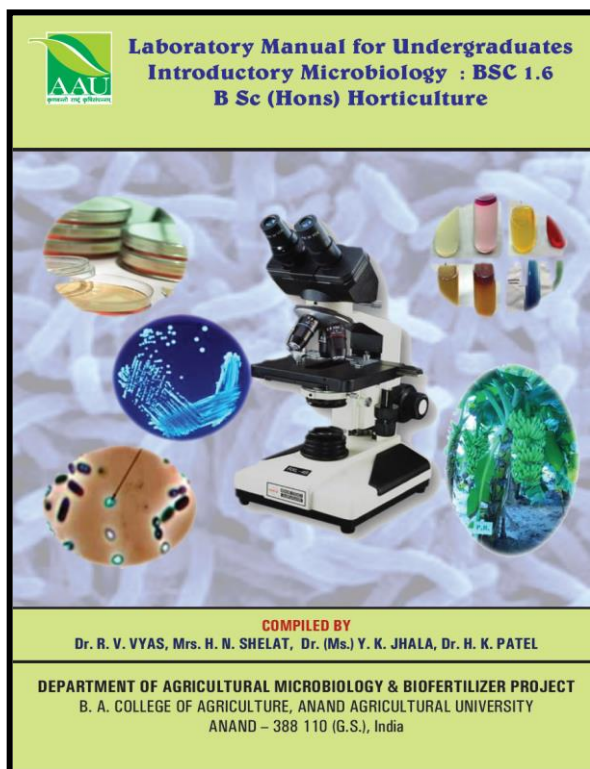
**Walk In Cold Room for storage cum
Bioculture Repository**

Text Book: A textbook entitled “Handbook of Biofertilizers and Microbial pesticides (Eds.) Vora M.S., Shelat H.N. and Vyas R.V.” published by Satish Serial Publication for undergraduate courses of B. Sc (Hons.) Agriculture and Horticulture students.



Teaching manuals: 2

1. Dr. R. V. Vyas, Mrs H. N. Shelat, Dr. Y. K. Jhala and Dr. H. K. Patel. Laboratory manual for Undergraduates. B.Sc. (Hons.) Horticulture, BSC course entitled “Introductory Microbiology” (1+1).
2. Dr. R. V. Vyas, Mrs H. N. Shelat, Dr. Y. K. Jhala and Dr. H. K. Patel. Laboratory manual for Undergraduates. B.Sc. (Hons.) Agriculture Ag. Micro. course entitled “Agricultural Microbiology” (1+1).



HRD activities for students:

Department is committed to generate quality technocrats which can strengthen agriculture and boost agro-economy by conducting specialized training program on Organic Farming with special emphasis on Biofertilizers

Title	Date	Sponsoring authority
Training program for PG students on organic farming	August 1 st 2, 2017	Regional center for Organic Farming, RCOF, Nagpur
		
Training program for students on 'Quality control of Biofertilizers, Use in Organic Farming and Its Business Model'	August 31, 2021	Anand Agricultural University, Anand