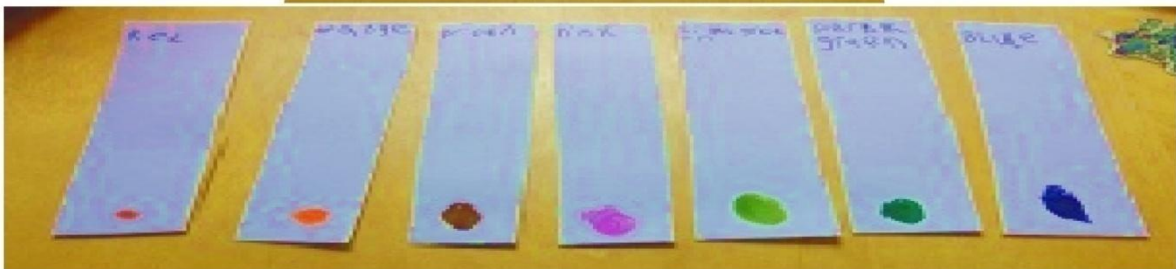


*Certificate Course*  
*in*  
*Amino Acid*  
*Profiling*



**DEPARTMENT OF BOTANY**

**Dr. AMBEDKAR COLLEGE**

NAAC RE- ACCREDITED WITH "A" GRADE (CGPA 3.45)

Recognised by UGC as College with Potential for Excellence

**Deekshabhoomi, Nagpur- 440010 (MS) India**

**Duration: 16/03/2019 to 25/03/2019**

**Report On**  
**“Certificate Course on Amino Acid Profiling”**

Organized by

**Department of Botany, Dr. Ambedkar College**

Deekshabhoomi, Nagpur-440010

Chairman

**Dr. P. C. Pawar**

Convener

**Prof. Subhash R. Somkuwar**

Co-ordinator

**Dr. Rahul B. Kamble**

Date: 11.03.2019

To,

**The Principal,**

Dr. Ambedkar College,

Deekshabhoomi, Nagpur

Applicant: Dr. Rahul B. Kamble, Department of Botany

Subject: Proposal for 'Certificate Course on Amino Acid Profiling'

Respected Madam,

With reference to above mentioned subject, I am submitting herewith the proposal to conduct "**Certificate Course on Amino Acid Profiling**" by Department of Botany of our college. This course will be helpful to learn the conceptual ideas and preliminary technical skills in amino acid profiling and it's arena as interdisciplinary course.

I request you to sanction the same.

Date:

Place: Nagpur

Your Faithfully,

**Dr. Rahul B. Kamble**

Forwarded By

**Prof. Subhash R. Somkuwar**

Head, Dept. of Botany,

Dr. Ambedkar College

Deekshabhoomi, Nagpur

Enclosure;

1. Proposal
2. Curriculum and Design for course

CC to 1. Co-Ordinator IQAC



**PRINCIPAL**  
**DR. AMBEDKAR COLLEGE**  
**NAGPUR**

# Dr. Ambedkar College, Deekshabhoomi, Nagpur

## Proposal for “Certificate Course on Amino Acid Profiling”

### 1. Basic information about the applicant department

- Name of College** – Dr. Ambedkar College, Deekshabhoomi, Nagpur
- Complete postal address**-Dr. Ambedkar College, Deekshabhoomi, Nagpur-440010, Maharashtra State, India
- Name of Department**- Botany

### 2. Details of Course Proposed

- Name of Course**- Certificate Course on Amino Acid Profiling
- Target Group**- UG students
- Duration of the course**- 30 Hours
- Medium of the instruction** – English
- Intake capacity**- 177

### 3. Details of faculty

- Whether college has any degree/diploma related to proposed course**- Yes, college has B.Sc. (Botany, Biochemistry, Biotechnology)
- Whether the course is prepared by the experts from related field** – Yes, course prepared by faculties of department.
- Information of Convener & Course Co-ordinator** (To be appointed for the course)

S.N.	Name	Course Holding	Department	Qualification	Experience
1	Prof. S.R. Somkuwar	Convener	Botany	M.Sc. NET-JRF, SET, M.Phil.	11 Years
2	Dr. Rahul B. Kamble	Co-ordinator	Botany	M.Sc., Ph. D. (Botany), FIAAT	6 Years

#### iv. Information of faculty members (To be appointed for the course) if any

S.N.	Name	Department	Qualification	Experience
1	Dr. Utpal J. Dongre	Biochemistry	M.Sc. NET-JRF, Ph.D.	08 Years
2	Prof. (Mrs.) B.A. Mehere	Biochemistry	M.Sc. NET-JRF	26 Years
3	Prof. S.R. Somkuwar	Botany	M.Sc. NET-JRF, SET, M.Phil.	11 Years
4	Dr. Rahul B. Kamble	Botany	M.Sc., Ph. D. (Botany), FIAAT	6 Years

### 4. Details of physical infrastructure available for the course

- Classroom with projector** – Available
- Reading material**- available in core library of Botany Dept.
- Software**- freeware available with computer and internet facility at Computer Science Dept.



**Course Co-ordinator**  
Dr. Rahul B. Kamble



**Convener & Head, Department of Botany**  
Prof. S.R. Somkuwar

# **Dr. Ambedkar College Deekshabhoomi Nagpur**

## ***Certificate Course on Amino Acid Profiling***

### **Syllabus (30 Hours)**

/

#### **Unit: I (10 hours)**

General properties of Amino acids; Essential and Non-essential Amino acids; Structure of Amino acids; Sources of Amino acids; Functions of Amino acids; Deficiency of Amino acids.

#### **Unit: II (10 hours)**

Classification of amino acids based on structure; aromatic, aliphatic, acidic, basic, sulfur containing, branched chain. Globular & Fibrous protein, Hierarchy in structure (primary, secondary, tertiary), isoelectric point, Protein denaturation, digestibility. Color reactions of proteins and amino acids. Amino acid analysis, protein digestibility corrected amino acid score (PDCAAS). Rheological properties of protein- solubility, viscosity, gelling, surfactants.

#### **Unit: III (10 hours)**

Hands on training on Chromatographic separation of amino acids: Introduction, Applications of Chromatography, Types of Chromatography, Paper Chromatography, Objectives, Materials & Methodology, Result & Calculations, The Chromatogram, The Rf calculated results.



**Course Co-ordinator**  
Dr. Rahul B. Kamble



**Convener & Head, Department of Botany**  
Prof. S.R. Somkuwar

# Dr. Ambedkar College Deekshabhoomi Nagpur

## Certificate Course on Amino Acid Profiling

### Lecture and Exam Scheme

Course Name	Name of Paper	Lecture per day	Total No. of Hours	Online Unit Test	Viva Voce	Total Marks
Certificate Course	Amino Acid Profiling	1	30	30	20	50



**Course Co-ordinator**  
Dr. Rahul B. Kamble



**Convener & Head, Department of Botany**  
Prof. S.R. Somkuwar



**PRINCIPAL**  
DR. AMBEDKAR COLLEGE  
NAGPUR



**Dr. Ambedkar College Deekshabhoomi Nagpur**  
**Department of Botany**

**Notice**

Date: 11.03.2019

All the students of B.Sc. Botany, Biochemistry and Zoology are hereby informed that the Department of Botany is going to organize an add-on course under the title "Certificate Course on Amino Acid Profiling" from 16<sup>th</sup> March 2019 to 25<sup>th</sup> March 2019. This is a compulsory practice for internal assessment so students have to join the course ASAP with the teacher in charge.



**Course Co-ordinator**  
Dr. Rahul B. Kamble



**Convener & Head, Department of Botany**  
Prof. S.R. Somkuwar



**PRINCIPAL**  
**DR. AMBEDKAR COLLEGE**  
**NAGPUR**



**Dr. Ambedkar College Deekshabhoomi Nagpur**  
**Certificate Course on Amino Acid Profiling**

**Evaluation: Result Sheet**

<b>Sr. No.</b>	<b>Name of Student</b>	<b>Unit Test (30)</b>	<b>Viva Voce (20)</b>	<b>Total Marks (50)</b>
1	AISHWARYA K. ASHTANKAR	22	20	42
2	ANAGHA A. JUARE	24	20	44
3	ANJU H. TELANG	25	20	45
4	APARNA A. RAUT	22	20	42
5	ASHANKA A. UNDIRWARE	23	20	43
6	AVANTIKA U. MESHRAM	28	20	48
7	BHAVYA S. JERPOTH	27	20	47
8	CHETANA D. CHAUDHARI	25	20	45
9	HITISHA G. MURODIYA	22	20	42
10	KANCHAN A. DARODE	26	20	46
11	KHUSHBOO D. SHELWADE	21	20	41
12	MEGHA D. BELE	27	20	47
13	NILANGI V. TALMALE	28	20	48
14	POOJA D. DANGE	26	20	46
15	POOJA R. GUPTA	22	20	42
16	PRAGATI S. KALE	24	18	42
17	PRANALI D. DULE	25	20	45
18	PRATIKSHA N. UMREDKAR	27	20	47
19	PRERNA Y. AGASE	22	20	42
20	PRIYANKA G. MODOKAR	22	19	41
21	RANI S. MISHRA	25	20	45
22	RUPALI D. DHAWALE	28	20	48
23	SAYALI S. SIRSAT	27	22	47
24	SAYALI S. DESHPANDE	29	20	49
25	SHASWATI P. MANDAGAWALI	28	20	48
26	SHIVANI A. CHOPDE	25	20	45
27	VAISHNAVI G. WAGHMARE	24	18	42
28	VAISHNAVI V. RAUT	23	20	43
29	VARSHA R. WAGHARE	22	18	40
30	VEDANTI G. CHOURASIA	21	20	41
31	YUKTI S. CHOUBE	21	20	41
32	ADITYA P. TICHKULE	25	20	45
33	ADITYA V. PANDE	24	20	44
34	BHUSHAN S. BAGADTE	21	20	41
35	GUNWANTA D. WADHAVE	25	20	45
36	PRANAY B. GAIKWAD	26	20	46
37	SARANG D. KHANDALKAR	23	20	43
38	SHUBHAM P. TEMBHARE	28	20	48
39	VAIBHAV P. SHAHARE	26	20	46
40	VINAYAK V. JOSHI	21	20	41
41	AACHAL G. PATHAK	27	20	47
42	ADITI S. TAMBE	28	20	48
43	ANCHAL V. CHANDRIKAPURE	25	20	45



<b>Sr. No.</b>	<b>Name of Student</b>	<b>Unit Test (20)</b>	<b>Viva Voce (30)</b>	<b>Total Marks (50)</b>
44	ARYA B. KHADSE	24	20	44
45	ASHWINI D. KSHIRSAGAR	25	20	45
46	ASHIWINI R. DHOLE	25	18	43
47	BHAGYASHRI R. MESHRAM	22	20	42
48	CHETANA C. PATIL	20	18	38
49	CHHAYA D. INGOLE	21	20	41
50	DEEPIKA C. BHASARKAR	22	20	42
51	HIMANI R. NIKHAR	23	20	43
52	JAYA K. GAUTAM	27	20	47
53	KALYANI A. MESHRAM	23	18	41
54	KOMAL V. BHANDEKAR	22	20	42
55	NIKHITA V. TAMBDE	25	20	45
56	NIKITA B. PATLE	26	20	46
57	NIKITA V. KHADSE	25	20	45
58	NISHA S. MADNE	22	20	42
59	PALAK C. WASNIK	25	20	45
60	PAYAL M. KAMBLE	26	20	46
61	PRACHI V. HULALE	22	18	40
62	PRAGATI P. MESHRAM	23	20	43
63	PRANJALI L. WAGHMARE	22	20	42
64	PRATI KSHA B. SHARMA	21	20	41
65	PRATI KSHA S. NASRE	27	20	47
66	PRATI KSHA G. DHOKE	22	20	42
67	PRATI KSHA N. CHIMOTE	20	18	38
68	RIYA DHANVIJAY	21	20	41
69	RUCHIKA D. BHAGAT	26	20	46
70	RUPAL D. RAMTEKE	23	20	43
71	SAKSHI S. ATRAM	20	18	38
72	SAKSHI V. VAIRAGADE	21	20	41
73	SAYALI S. WAGHAMRE	25	20	45
74	SELVI S. THOOL	20	16	36
75	SHRADDHA S. SONTAKKE	22	20	42
76	SHRADDHA S. NITNAWARE	25	20	45
77	SHREYA S. NAIK	26	20	46
78	SHRIDHA C. SURSAWANT	20	17	37
79	SHRUTI C. MESHRAM	26	20	46
80	SIMRAN R. NAHARE	22	20	42
81	TRUPTI G. AGLAWE	21	20	41
82	TRUPTI L. NASKOLKAR	23	20	43
83	URVI V. AMBADE	25	20	45
84	VAISHNAVI A. KATHANE	21	20	41
85	ANUP B. CHARBHE	25	20	45
86	AYUSH A. MANIKKUWAR	22	20	42
87	HITESH B. SADANSHIV	25	20	45
88	KULDEEP R. RAUT	26	20	46
89	LUCKY N. DAHARWAL	22	20	42

<b>Sr. No.</b>	<b>Name of Student</b>	<b>Unit Test (20)</b>	<b>Viva Voce (30)</b>	<b>Total Marks (50)</b>
90	PRADEEP P. KHOBRADE	20	18	38
91	RAHUL P. POTRAJE	25	20	45
92	ROHIT P. SAHARE	22	20	42
93	SHASHANIK S. KASTURWAR	21	20	41
94	SHYAM M. SINGH	20	15	35
95	TUSHAR P. MADKE	23	20	43
96	YASH S. KHANDEKAR	23	20	43
97	PRANALI D. DULE	22	20	42
98	SHREYA R. SONTAKKE	25	20	45
99	TASMIYA F. KHAN	20	16	36
100	VEDANTI G. CHOURASIA	22	20	42
101	ASHANKA A. UNDIRWADE	23	20	43
102	GEETAKSHI N. SHENDE	25	20	45
103	KIRAN S. PAL	26	20	46
104	NILANGI V. TALMALE	25	20	45
105	PRUTHALI N. GHUSHEY	20	17	37
106	URVASHI A. RAMDE	20	18	38
107	VIDISHA V. ALE	22	20	42
108	AKSHAY M. WANKHEDE	21	20	41
109	AMIT N. KADAO	20	15	35
110	GOURAV R. TRIKARWAR	21	20	41
111	ROHAN A. SHENDE	23	20	43
112	MAYUR D. SHENDE	20	17	37
113	AAKANSHA R. DANDEWAR	25	20	45
114	ADITYA A. GADPAYLE	22	20	42
115	ADITYA S. ZODE	20	16	36
116	AISHWARYA T. SUDHAN	28	20	48
117	AMRUTA L. SHINDE	25	20	45
118	ANJALI D. PATIL	26	20	46
119	ANKITA M. SHEWADE	23	20	43
120	ANSHUL M. DAHIWALE	21	20	41
121	APEKSHA V. RANGARI	25	20	45
122	ASHIKA A. TAMBE	22	20	42
123	ASHIKA S. LOKHANDE	20	17	37
124	AYUSHI S. GAJBHIYE	26	20	46
125	CHETANA P. GAUTAM	21	20	41
126	EKTA S. CHOUDHARY	20	18	38
127	GAURI P. RAUT	23	20	43
128	HARSHAL D. KALE	22	20	42
129	HARSHAL R. BAMBOLE	26	20	46
130	HIMANSHI S. SAKHRE	26	20	46
131	HIMANSHI S. GAURE	20	14	34
132	ISHA A. KHETADE	24	20	44
134	JAYESH S. NITNAWARE	20	16	36
135	KARTIKI P. JONNALWAR	23	20	43
136	KUNIKA B. DONGRE	22	20	42

Sr. No.	Name of Student	Unit Test (20)	Viva Voce (30)	Total Marks (50)
137	LAXMI P. WALDE	25	20	45
138	MAHIMA R. WANKHEDE	20	18	38
139	MAYUR S. GHARAT	22	20	42
140	MITHILA V. MASKE	21	20	41
141	NEHA S. BORKAR	20	15	35
142	NIKHIL Z. BARIYA	20	16	36
143	OJASWITA A. RAMTEKE	23	20	43
144	PALASH J. SAWALKAR	20	15	35
145	PALLAVI S. BHADAKE	20	15	35
146	PRACHI N. RAIKWAR	26	20	46
147	PRAGATI R. SHARMA	22	20	42
148	PRAJWAL A. GUPTA	20	18	38
149	PRAJWAL D. DONGRE	20	15	35
150	PRANJALI V. SHERKI	22	20	42
151	PRAPTI V. MATEY	20	15	35
152	PRASIDDHI S. THAKRE	27	20	47
153	RAVI M. MADKE	28	20	48
154	RITWIK D. UIKEY	22	20	42
156	RUDHVIK S. BOBADE	21	20	41
157	SAHIL M. SHAMBHARKAR	25	20	45
158	SAMIKSHA A. SHAMKULE	20	17	37
159	SAYALI R. MAHURE	20	16	36
160	SHAHEEN S. SHAIKH	27	20	47
161	SHEELRATNA R. BADOLE	25	20	45
162	SHREYA A. DAHIWALE	22	20	42
163	SHREYA V. PANDE	26	20	46
164	SNEHA B. SAKHARE	27	20	47
165	SONALI G. DIYEWAR	25	20	45
166	SUPRIYA S. PATIL	20	16	36
167	SURAJ S. DUBE	20	13	33
168	TAHIR N. SHEIKH	21	20	41
169	TANIYA S. BOSE	20	16	36
170	TARUN N. PATIL	22	20	42
171	THOMSON W. JAMBHULKAR	20	17	37
172	TRUSHALI G. SOMKUWAR	26	20	46
173	VAIBHAV A. NEWARE	21	20	41
174	VEDANT S. GAUTAM	22	20	42
175	VIDHI D. KUWARE	20	15	35
176	YAMESH S. LILHARE	26	20	46
177	YOGITA D. SHEMBEKAR	20	20	40

  
**Course Co-ordinator**  
 Dr. Rahul B. Kamble

  
**Convener & Head, Department of Botany**  
 Prof. S.R. Somkuwar

  
**PRINCIPAL**  
**DR. AMBEDKAR COLLEGE**  
**NAGPUR**

# **Dr. Ambedkar College Deekshabhoomi Nagpur**

## **Department of Botany**

### **Report on**

### **“Certificate Course on Amino Acid Profiling”**

In the academic session 2018-2019, a Certificate Course program on “Amino Acid Profiling” in Botany was conducted in the Department of Botany during 16<sup>th</sup> March 2019 to 25<sup>th</sup> March 2019 (3 hours/day). Total **177 students** were admitted for this Certificate Course. Through this course, students got knowledge about various experimental techniques and tools for scientific data analysis through live demonstration and hands on training. Assessment was done via Unit Test (MCQ type) and viva voce. All the students scored good marks and learnt skill to appreciable extent. All the faculty members of Department of Botany worked hard for the successful conduction and logistic support for this program.

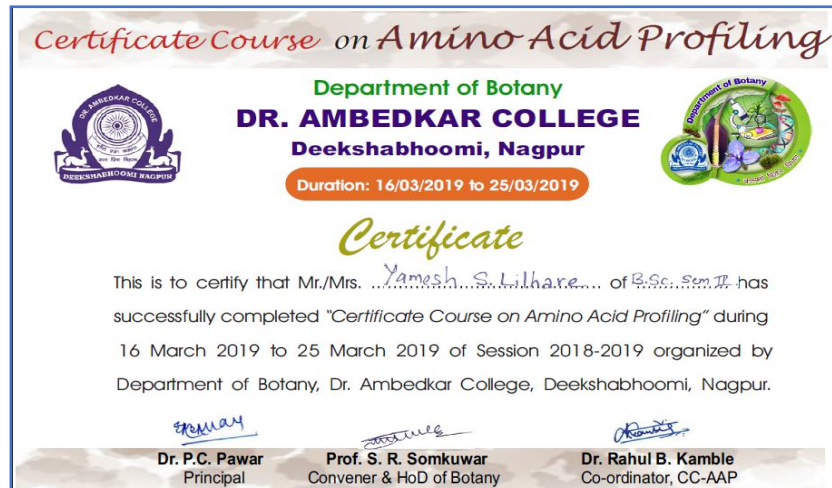
#### **Methodology**

- Introduction
- Applications of Chromatography
- Types of Chromatography
- Paper Chromatography
- Objectives
- Materials & Methodology
- Result & Calculations
- The Chromatogram
- The Rf calculated results

This Certificate Course aims to introduce the concept and major approaches in amino acid profiling, the knowledge of which is fundamental to further works on amino acid composition, purification and functional studies. In recent years, most areas of proteomics, bioinformatics, mass spectrometry, computational biology and medical informatics have experienced significant advances driven by computational techniques and novel research. Moreover these researches continue to be a vibrant research area with broadening applications and new emerging challenges in life sciences research strategies in the context of protein biochemistry.

Medicinal plants and its natural products are often in the form of protein mixtures which is polymerized by various amino acids through peptide linkages. Amino acids are important targets in biomedical sciences research because it is associated with defects in cell protein machinery. Amino acids profiling is an emerging independent subspecialty of proteomics that is rapidly expanding and providing unprecedented insight into biomedical events. From this course, students have learnt the amino acid profiling techniques and application in biomedical sciences. Participants also got the opportunity of hands-on training by paper chromatographic separation and identification several of amino acids in ethnomedicinal plants by using low, mid and high molecular weight protein biomarkers.

**Certificate:**



**Glimpses:**



*[Signature]*  
**Course Co-ordinator**  
Dr. Rahul B. Kamble

*[Signature]*  
**Convener & Head, Department of Botany**  
Prof. S.R. Somkuwar