

Master of Cosmetic Technology  
(Herbal Cosmetics)  
(Semester Pattern)

Prospectus No.101917

संत गाडगे बाबा अमरावती विद्यापीठ

SANT GADGE BABA AMRAVATI UNIVERSITY

गृहविज्ञान विद्याशाखा  
(FACULTY OF HOME SCIENCE)

PROSPECTUS

OF

THE EXAMINATION FOR THE DEGREE OF MASTER OF COSMETIC  
TECHNOLOGY WITH SPECIALIZATION IN

**HERBAL COSMETICS**

SEMESTER-I W-2009,

SEMESTER-II S-2010,

SEMESTER-III W-2010



2009

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## SPECIAL NOTE FOR INFORMATION OF THE STUDENTS

(1) Notwithstanding anything to the contrary, it is notified for general information and guidance of all concerned that a person, who has passed the qualifying examination and is eligible for admission only to the corresponding next higher examination as an ex-student or an external candidate, shall be examined in accordance with the syllabus of such next higher examination in force at the time of such examination in such subjects, papers or combination of papers in which students from University Departments or Colleges are to be examined by the University.

(2) Be it known to all the students desirous to take examination/s for which this prospectus has been prescribed should, if found necessary for any other information regarding examinations etc. refer the University Ordinance Booklet the various conditions/provisions pertaining to examinations as prescribed in the following Ordinances-

- Ordinance No. 1 : Enrolment of Students.
- Ordinance No.2 : Admission of Students
- Ordinance No. 4 : National Cadet Corps
- Ordinance No. 6 : Examination in General (relevant extracts)
- Ordinance No. 18/2001 : An Ordinance to provide grace marks for passing in a Head of passing and Improvement of Division (Higher Class) and getting Distinction in the subject and condonation of defficiency of marks in a subject in all the faculties prescribed by the Statute NO.18, Ordinance 2001.
- Ordinance No.9 : Conduct of Examinations (Relevant extracts)
- Ordinance No.10 : Providing for Exemptions and Compartments

- Ordinance No. 19 : Admission of Candidates to Degrees
- Ordinance No.109 : Recording of a change of name of a University Student in the records of the University
- Ordinance No. 6 of 2008 : Improvement of Division/Grade.
- Ordinance No.19/2001 : An Ordinance for Central Assessment Programme, Scheme of Evaluation and Moderation of answerbooks and preparation of results of the examinations, conducted by the University, Ordinance 2001.

**J.S.Deshpande**

Registrar

Sant Gadge Baba Amravati University

**\*ORDINANCE NO. 24 OF 2004**

Examinations leading to the Degree of Master of Cosmetic Technology in the Faculty of Home Science, Ordinance, 2004.

Whereas as it is expedient to make an Ordinance in respect of an Examinations leading to the Degree of Master of Cosmetic Technology in the Faculty of Home Science, Ordinance, 2004, hereinafter appearing; the Management Council is hereby pleased to make the following Ordinance.

1. This Ordinance may be Called, "Examinations leading to the Degree of Master of Cosmetic Technology in the Faculty of Home Science, Ordinance 2004."
2. This Ordinance shall come into force from the Academic Session 2004-2005.
3. The Examinations in Master of Cosmetic Technology course shall be conducted in following four specializations.
  - I) Cosmetic Technology
  - II) Quality Assurance
  - III) Perfumes & Colours
  - IV) Herbal Cosmetics
4. Subject to the compliance of the provisions of this Ordinance and any other ordinances in force from time to time, an applicant for admission to the Master of Cosmetic Technology Semester-I examination shall have passed:-
 

Degree course in Cosmetic Technology of Amravati University or of any other statutory University equivalent thereto possessing minimum of 50% marks.
5. The duration of the course leading to the degree of Master of Cosmetic Technology in the Faculty of Home Science shall be of one and half years consisting of three Semesters, each of six months duration. There shall be three examinations leading to the degree of Master of Cosmetic technology namely :
  - a) The first Examination shall be held at the end of six months which shall be known as Master of Cosmetic Technology Semester-I examination.

- b) The Second Examination shall be held at the end of second semester and shall be known as Master of Cosmetic Technology Semester-II Examination.
  - c) The third Examination shall be held at the end of third semester and shall be known as Master of Cosmetic Technology Semester-III Examination.
6. An examinee who is successful at Semester-I shall be eligible for admission to Semester-II examination and there upon an examinee who is successful at Semester-II Examination shall be eligible for admission to Semester-III Examination.
  7. The Examination shall comprise of :
 

|   |           |
|---|-----------|
| (a) Semester-I  |           |
| (i) Theory  | 240 Marks |
| and it's Internal assessment  | 60 Marks  |
| (ii) Practicals   | 140 Marks |
| it's Internal assessment  | 60 Marks  |
| (b) Semester-II   |           |
| (i) Theory  | 200 Marks |
| and it's Internal assessment  | 50 Marks  |
| (ii) Practicals   | 140 Marks |
| it's Internal assessment  | 60 Marks  |
| (c) Semester-III  |           |
| (i) Research Reviews (Seminar)  | 100 Marks |
| (ii) Comprehensive Viva based on Dissertations and its Internal Assessment. | 150 Marks |

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Grand Total      1250 Marks

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**For Theory Examination :-** For Internal assessment / sessionals / home assessments two sessional examinations shall be conducted each of 20 marks per semester. Average marks obtained out of the two examinations will be awarded.

**For Practical Examinaion :-** One sessional examination each of 30 marks shall be conducted and marks will be awarded.

The Head of the Department / Principal shall maintain in his / her office a complete record of the marks obtained by the candidates towards the Internal Assessment / Sessional and shall send them to the Controller to

Examinations at least 15 days before the commencement of the theory examination.

8. Students admitted for Semester-III of Master of Cosmetic Technology shall carry out research under an approved guide belonging to that institution / college.
9. The defense examination of an examinee of Semester III examination of Master of Cosmetic Technology shall be carried out by-
  - (i) External examiner appointed by the University, and
  - (ii) The guide guiding the Dissertation / thesis.

In case of dispute, the opinion of the external examiner shall be final and binding.

Provided further that the external examiner shall submit a report to the Controller of Examinations immediately.

10. (i) The scope of the topics in various papers shall be as indicated in the Syllabus.
- (ii) The medium of instruction and the examination shall be English only.
11. An examinee who secures minimum of 50% of Marks in each theory paper, seminar, dissertation / thesis, viva-voce shall be declared successful at the examination.

Provided firstly that the Division to successful examinee for the degree of Master of Cosmetic Technology examinations shall be determined on the basis of the aggregate marks obtained at Semester I, Semester II, and Semester III examinations.

Provided secondly that if an examinee secures 50% or more marks but less than 60% marks in the aggregate, she / he shall be placed in second division.

Provided thirdly that if an examinee secures 60% or more marks in the aggregate, she / he shall be placed in the first division.

12. The fees for the examination shall be as prescribed by the University from time to time.
13. (i) An examinee who is unsuccessful at an examination shall be eligible

for admission to the Examination in next theory / practical / Seminar / Dissertation Thesis, and viva - voce on payment of such fees as may be prescribed by the University from time to time.

- (ii) For being eligible for exemption in a paper or a practical or dissertation, and viva-voce a candidate must have obtained minimum 50% of marks in that paper / Practical / Dissertation, and viva-voce as the case may be.
14. Without prejudice to the other provision of Ordinance No.6 relating to the examinations in general, the provisions of paras 5,8,10,23 and 31 of the said Ordinance shall apply to every candidate.
15. Provisions of Ordinance No.18 of 2001 relating to an Ordinance to provide grace marks for passing in a Head of passing and Improvement of Division (Higher Class) and getting Distinction in the subject and condonation of deficiency of marks in a subject in all the faculties prescribed by the Statute No.18, Ordinance 2001 shall apply to the examination under this Ordinance.
16. The examination leading to the Semester-I / Semester-II / Semester-III of Post-Graduate Master degree in Cosmetic Technology shall be held twice a year at such places and on such dates as decided by the Board of Examinations.
17. The Schemes of Examinations for First, Second and Third Semester for the Degree course "Master of Cosmetic Technology" shall be as per Appendix-A appended herewith.
18. Notwithstanding any-thing to the contrary in this Ordinance, no person shall be admitted to these examinations if he / she has already passed the same examination or any examination equivalent thereto of any other statutory University.
19. The Degree, in the prescribed form, shall be signed by the Vice-Chancellor of the University.

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\*Amended vide Ordinance No.40 of 2005.

**APPENDIX-A**  
**SCHEME FOR MASTER OF COSMETIC TECHNOLOGY WITH SPECIALIZATION IN**  
**1) COSMETIC TECHNOLOGY, 2) QUALITY ASSURANCE, 3) PERFUME & COLOUR,**  
**AND 4) HERBAL COSMETICS**

| Sr.No.   | Semester/Subject                     | Max.Marks |  |       | Min.marks<br>for passing | No. of Hrs. per Week. |           | Time<br>of<br>Exam. |
|--|--------------------------------------|-----------|--|-------|--------------------------|-----------------------|-----------|---------------------|
|  |                                      | Main      | Sessional<br>/Internal<br>/Seminar<br>Assessment | Total |                          | Theory                | Practical |                     |
| <b>I First Semester (Common for all specializations)</b> |                                      |           |  |       |                          |                       |           |                     |
| 1T1  | Principles of Cosmetic Technology    | 40        | 10   | 50    | 25                       | 3                     | —         | 3                   |
| 1T2  | Quality Assurance Techniques         | 80        | 20   | 100   | 50                       | 6                     | —         | 3                   |
| 1T3  | Product Development & Formulation    | 80        | 20   | 100   | 50                       | 6                     | —         | 3                   |
| 1T4  | Biostatistics & Research Methodology | 40        | 10   | 50    | 25                       | 3                     | —         | 3                   |
| <b>Practicals</b>  |                                      |           |  |       |                          |                       |           |                     |
| 1P1  | Quality Assurance Techniques         | 70        | 30   | 100   | 50                       | —                     | 9         | 6                   |
| 1P2  | Product Development & Formulation    | 70        | 30   | 100   | 50                       | —                     | 9         | 6                   |
|  |                                      |           |  | 500   |                          | 18                    | 18        |                     |
| <b>II Second Semester (Cosmetic Technology)</b>          |                                      |           |  |       |                          |                       |           |                     |
| 2T1  | Advance Cosmetic Technology-I        | 80        | 20   | 100   | 50                       | 6                     | —         | 3                   |
| 2T2  | Advance Cosmetic Technology-II       | 80        | 20   | 100   | 50                       | 6                     | —         | 3                   |
| 2T3  | Skin Dermatology*                    | 40        | 10   | 50    | 25                       | 3                     | —         | 3                   |
| <b>Practicals</b>  |                                      |           |  |       |                          |                       |           |                     |
| 2P1  | Advance Cosmetic Technology-I        | 70        | 30   | 100   | 50                       | —                     | 9         | 6                   |
| 2P2  | Advance Cosmetic Technology-II       | 70        | 30   | 100   | 50                       | —                     | 9         | 6                   |
|  |                                      |           |  | 450   |                          | 15                    | 18        |                     |
| <b>II Second Semester (Quality Assurance)</b>            |                                      |           |  |       |                          |                       |           |                     |
| 2T4  | Advance Cosmetic Analysis-I          | 80        | 20   | 100   | 50                       | 6                     | —         | 3                   |
| 2T5  | Advance Cosmetic Analysis-II         | 80        | 20   | 100   | 50                       | 6                     | —         | 3                   |
| 2T3  | Skin Dermatology*                    | 40        | 10   | 50    | 25                       | 3                     | —         | 3                   |
| <b>Practicals</b>  |                                      |           |  |       |                          |                       |           |                     |
| 2P3  | Advance Cosmetic Analysis-I          | 70        | 30   | 100   | 50                       | —                     | 9         | 6                   |
| 2P4  | Advance Cosmetic Analysis-II         | 70        | 30   | 100   | 50                       | —                     | 9         | 6                   |
|  |                                      |           |  | 450   |                          | 15                    | 18        |                     |

|  |                                |                    |     |     |     |     |     |    |    |
|--|--------------------------------|--------------------|-----|-----|-----|-----|-----|----|----|
| <b>II Second Semester (Perfume &amp; Colour)</b>           |                                |                    |     |     |     |     |     |    |    |
| 2T6  | Advance                        | Perfume colours-I  | 80  | 20  | 100 | 50  | 6   | —  | 3  |
| 2T7  | Advance                        | Perfume colours-II | 80  | 20  | 100 | 50  | 6   | —  | 3  |
| 2T3  | Skin Dermatology*              |                    | 40  | 10  | 50  | 25  | 3   | —  | 3  |
| <b>Practicals</b>  |                                |                    |     |     |     |     |     |    |    |
| 2P5  | Advance                        | Perfume colours-I  | 70  | 30  | 100 | 50  | —   | 9  | 6  |
| 2P6  | Advance                        | Perfume colours-II | 70  | 30  | 100 | 50  | —   | 9  | 6  |
|  |                                |                    |     |     |     |     | 450 | 15 | 18 |
| <b>II Second Semester (Herbal Cosmetic)</b>                |                                |                    |     |     |     |     |     |    |    |
| 2T8  | Advance                        | Herbal Cosmetic-I  | 80  | 20  | 100 | 50  | 6   | —  | 3  |
| 2T9  | Advance                        | Herbal Cosmetic-II | 80  | 20  | 100 | 50  | 6   | —  | 3  |
| 2T3  | Skin Dermatology*              |                    | 40  | 10  | 50  | 25  | 3   | —  | 3  |
| <b>Practicals</b>  |                                |                    |     |     |     |     |     |    |    |
| 2P7  | Advance                        | Herbal Cosmetic-I  | 70  | 30  | 100 | 50  | —   | 9  | 6  |
| 2P8  | Advance                        | Herbal Cosmetic-II | 70  | 30  | 100 | 50  | —   | 9  | 6  |
|  |                                |                    |     |     |     |     | 450 | 15 | 18 |
| <b>III Thrid Semester (Common for all Specializations)</b> |                                |                    |     |     |     |     |     |    |    |
| 1  | Dessertation / Thesis          |                    |     |     |     |     |     |    |    |
|  | Comprehensive Thesis Viva Voce |                    | 150 | 50  | 200 | 100 | —   | 12 | 2  |
| 3  | Seminar (Research Review)      |                    | —   | 100 | 100 | 50  | —   | —  | —  |
|  |                                |                    |     |     |     |     | 300 | 12 |    |

\* The subject “2T3 Skin Dermatology” is common for all specializations.

**Note :** The candidate shall deliver seminar after completion of dessertation work.

**Syllabus prescribed for the Course of Master of Cosmetic Technology  
with specialization in Herbal Cosmetics  
(Implemented from the Academic Session, 2005-06.)**

**Master of Cosmetic Technology  
(I semester)  
(Common for all specializations)**

**1T1 Principles of Cosmetic Technology**

**Max.Marks : 50**

**Paper : 40**

**Sessional : 10**

**Interfacial Phenomena :** Liquid-Liquid interface : Insoluble monolayers, surface pressure, surface potential, surface rheology and their measurement, structure and state of monolayers, mixed monolayers, Macromolecular films, Biological membranes, Liquid-Solid interface, details study of wetting , detergency and water repellance.

**Solubilization :** Micelle formation, factors affecting micelle formation and physical methods of investigation of micellar solutions, Theory and mechanism of solubilization. Some factors in the formulation of Cosmeceuticals containing solubilized materials like choice of surface active agents, effects and the nature of the solubility, effect of co-solubilizing agents on the solubilizing action of surface active agents, effect of temperature on the solubilization, phase equilibria in system containing surfactants, application of solubilization, solubilization of phenolic disinfectants, idophers, Vitamin preparations, Hormones solution, steroids, flavors and perfumes, etc.

**Theories of Dispersion Techniques :** General basic physical consideration, adsorption and interfacial energetics and study of relevant equation adsorption on solid surface, electrical phenomena at interfaces, particle-particle interactions, influence of polymer adsorption on particle, vehicle interaction, flocculation kinetics, controlled flocculation, Application of dispersion techniques in formulation of emulsion and suspension.

**Suspension :** Theory, production, equipment, Industrial processing and large scale manufacturing.

**Emulsions :** Electrical theories of stabilization of emulsions, assessment and prediction of emulsion shelf life. equations involved in emulsion stability stress conditions and physical parameters employed to evaluate emulsion stability, presentation of interaction between preservation and emulsion

ingredients like surface active agents hydrophilic polymers, suspended particle, packaging materials etc. prediction of preservative efficiency. Production. equipments, Industrial processing and large scale manufacture.

**Rheology :** Theoretical consideration. Thixotropy spurs and bulges in the hysteresis loop continuous shear rheometry of semisolids viscoelasticity the creep test study including principle of operation and application cone & plate, stormer, Mac Michal Broke - field viscometer. Chemical and physical factors affecting rheological properties. Rheology and product design, Rheology of cosmetic products. Rheological and Biological application.

**Micromeritics :** Adsorption, air permeability techniques and determination of surface area and size of particals and classification and evolution of some basic properties of powders, flow properties of various powder system.

**Recommended Books :**

- 1) "Advanced in Pharmaceutical Sciences" Vol. I, II, III & IV, edited by Bran, Becheti & Carless.
- 2) Martin A.N. "Physical Pharmacy"
- 3) Lachman et al "The Theory and Practice of Industrial Pharmacy".
- 4) "Remington, Pharmaceutical Practice" Mac Publications, USA.
- 5) Badger W.L., & Banchemo "Introduction of Chemical Engineering."
- 6) Chemical Engineering by Richardson & Crudson.

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**1T2 Quality Assurance Techniques**

**Max.Marks : 100**

**Paper : 80**

**Sessional : 20**

1. Analysis of raw materials and evolution of finished products giving emphasis on physicochemical properties. Chemical analysis. Identification, Instrumental analysis, Biological toxicological testing, Microbiological testing.  
Raw Material : Waxes fatty acids / alcohol's / esters dispensing agents, colors, perfumes, preservatives, antioxidants Sweetening agents. Cosmetics of therapeutic agents, absorbents etc.  
Product - Emulsion (Liquid cream), Suspension (lotion), Powders (Talcum, Baby, Compact), Lipsticks, Mascara, Kajal, Hair care products (Shampoo, colorants) tooth paste, tooth powder, men's toiletries, antiperspirants deodorants, nail lacquers, aerosols etc.
2. Quality assessment of packaging materials, containers, closures etc.
3. Quality Assurance Management :-  
Good manufacturing practices (GMP)

## Introduction

Quality and related terms - Basic concepts.

Quality - Quality functions, quality control, quality policy, quality objectives, quality assurance, quality management.

Inspection and Test.

Inspection and Inspection Planning, Inspection manual, product acceptance inspection, inspection errors.

Sampling - Sampling Plans, procedures.

Parameters of Quality Analysis - Stability indicating methods.

Laboratory safety planning and management, biosafety, emergency procedures.

4. **GLP** : General provisions, organizations and personal facilities, equipment testing facility, Operation test and control articles, protocol for and conduct of non clinical laboratory study, records and reports.
5. ISO 9000, ISO 9001, ISO 9002, ISO 9003, ISO 14001.
6. Compliance and drug and cosmetic act, 1940 with reference to provision for packaging and labelling (Rule 150 A, Schedule S), Permitted colours, flavours, etc.

**Recommended Books :**

- 1) AOAC (Book published by Association of Organic and Analytical Chemistry)
- 2) W.A.Poucher : Perfume, Cosmetics and Soaps Vol. I, II, III - Chapman and Hall.
- 3) Balsam et al : Cosmetic Science and Technology Mim - I, II, III Wiley Interscience.
- 4) Standard method of Chemical Analysis - Edited by Frant J., Welchar D., Wan, Norstand.
- 5) Toxicology of drug and chemicals - W.V. Deichman and H.W. Gerada Academic Press.
- 6) Text Book of toxicology - Dubols and Getting, Oxford.
- 7) How to Practice GMPS by P.P.Sharma.
- 8) Cosmetic Formulation, Management and quality control by P.P.Sharma.
- 9) How to Practice GLP by P.P.Sharma.
- 10) Drug and cosmetic act, 1940, by Govt. of India.

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**1T3 Product Development and Formulation****Max.Marks : 100****Paper : 80****Sessional : 20**

- I. Consideration of physical and chemical problems encountered in formulation and development of cosmetic preparations.
  - a) **Physical Properties** : Physical form, particle size, solubility wetting of solid and flow properties, cohesiveness and organolaptic properties.
  - b) Chemical properties and stability of ingredients and excipients.
- II. **Formulation excipients** :- Antioxidants and preservatives, colouring and diluting agents, emulsifying and suspending agents, Basic materials for creams, ointment bases, solvents and misceleneious excipients.
- III. **Pilot Plant Scale up technique** :- General considerations - review of formula, raw materials, equipments etc. In process evaluations, preparation of master formula and process, Establishing pilot plant scaleup techniques.
- IV. **Formulation and Development.** :- Emulsion, suspension, powders (Talcum, baby and compact), Lipsticks, Mascara, Kajal, Hair care products (Shampoos, colorants), tooth paste, tooth powder, antiperspirant, deodorant, Nail lacquers, Aerosols, Men's toileteries (Shaving cream, after shave lotion, eue-de-cologne) soaps, perfumes.
- V. **Herbal Products** :- Isolation of active principles of cosmetic and medicinals importance from herbs. Incorporation of herbal extract in cosmetic products like shampoos, creams.

**Recommended Books :**

- 1) Cosmetic Science and Technology Vol. I, II, III by Sagarin.
- 2) Harrys Cosmetology.
- 3) Theory and Practice of Industrial Pharmacy by Leon Lachman.
- 4) New Cosmetic Science
- 5) Indian Herbs by Chopra.
- 6) Wealth of India-by C.S.I.R.

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**1T4 Biostatistics & Research Methodology****Max.Marks : 50****Paper : 40****Sessional : 10**

**Biostatistics** :- Histograms and Frequency Polygons, measure of central tendency (mean, median and mode), dispersion standard mean and quartile deviation and range), skewness and kurtosis : Probability - Bayes theorem, variable and distributions (including Chi-square, t and f test); Non-parametric tests - Sign, run and order statistics median tests; Confidence intervals, square methods, regressions and randomizations; Analysis of variance (1-2- and 3-way) and covariance; Dose-response relationship and probit analysis, Correlation and Co-efficient of Correlation.

**Research Methodology** :- Introduction to Research Methodology - Importance of research in decision making, defining research problem and formulation of scientific experimental design.

**Data Collection and Measurement** :- Methods and techniques of data collection sampling and sampling designs attitude measurements and scales.

**Data Presentation and Analysis** :- Data processing statistical analysis and interpretation of data non-parametric tests multivariate analysis of data model building and decision making.

**Report Writing and Presentation** :- Substance of reports, formats of reports, presentation of a report.

**Research Paper** : Preparation of research paper, presentation of research paper.

**Reference Books :-**

- 1) Pharmaceutics Statistics by Bolton Marcel Dekker inc.
- 2) Biostatistics and Computer by Dr.Paradkar.
- 3) Methodology of Economic Research by A.K.Dasgupta.
- 4) Research Methodology Methods and Techniques by C.R.Kothari, Wishwa Prakashan.
- 5) Methodology and Technique of Social Research by Wilkinson and Bhandarkar.
- 6) Scientific Social Survey and Research by Young Pauline.

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**1P1 Quality Assurance Technique****Max.Marks : 100****Practicals****Practical : 70****Sessional : 30**

- A) **Carry out identification, physicochemical properties, chemical analysis, instrumental analysis, biological - toxicological testing, microbiological testing for-**

**Raw Materials** :- Waxes, fatty acids/ Alcohols/ esters, dispersing agents, colors, perfumes, preservatives, antioxidants, sweetening agents, cosmetic or therapeutic agents, adsorbents etc.

**Products** :- Emulsion, suspensions, powders (Talcum, baby and compacts), Lipsticks, Mascara, Kajal, Hair care products (Shampoo, colorants), tooth paste, tooth powder's, antiperspirants, and deodorant, nail lacquers, aerosols, men's toiletries (Shaving cream, after shave lotions, eau-de-cologne) soaps, perfumes.

- B) **Study (Selection and incorporation) and evaluation (determination and detection) of the following,**

Colour, Perfumes, Flavours.

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**1P2 Product Development and Formulation****Max.Marks : 100****Practicals****Practical : 70****Sessional : 30**

- 1) Evaluation of Stability of Emulsions through different methods.
  - a. Accelerated Stability Study.
  - b. Particle Size Analysis.
  - c. Other Parameters.
- 2) Evaluation of Stability of Suspensions through different methods.
  - a. Accelerated Stability Study.
  - b. Particle Size Analysis.
  - c. Other Parameters.
3. To measure Zeta potential of emulsion and to co-relate with stability.
4. To measure Zeta potential of suspensions and to co-relate with stability.
5. To Study the thixotropic behaviours of some creams.
  - a. Viscosity
  - b. Sedimentation.
6. To Study the thixotropic behaviours of some lotions.
  - a. Viscosity
  - b. Sedimentation.

7. To demonstrate the effect of air entrapment on rheology of creams.
8. To determine the cmc of surfactants by stalagmometer. (Anionic, Cationic, Nonionic, Ampholytic)
9. To determine the cmc of surfactants by capillary rise method.
10. To study the effect of salts on cmc of surfactant.
11. Determination of amount of surfactants with respect to phase-volume ratio. Antioxidants, Emulsifying agents.?
12. Interaction between the preservatives, antioxidants, emulsifying agents.
13. Interaction of above mentioned additives on the different packaging material.
14. To study the effect of pH on partition co-efficient of weak acids.
15. To study the effect of solvents on partition co-efficient of weak acids.
16. To study the flow properties of powders.
  - a) Effect of Particle size, b) Moisture content on angle of repose, c) other additives like glidants & lubricants.

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**Master of Cosmetic Technology**  
**(II Semester)**  
**(Herbal Cosmetics)**

**2T8 Advance Herbal Cosmetics -I**

**Max.Marks : 100**  
**Paper : 80**  
**Sessional : 20**

- 1) **Classification of Herbs** : Classification of herbs based on uses in cosmetic and personal hygiene care products and study of their phytochemical constituents.  
**Herbs used in Skin care :**  
As Cleansing - apricot.  
Emollents - Aloe, Almond.  
Astringent - Amla  
Freshning - Chandan, Khus.  
Skin Pigmentation - Saffron, Ambi Haldi.  
Herbs used as antioxidants, free-radical searanger, antiseptic, antibacterial, antiwrinkle, anti fungal.  
Herbs effecting malanin production and fairness promotive skin lightening & skin tanning.
- 2) **Aromatherapy** : Various oils used in Aroma therapy, their significant & uses.

**Reference Books :**

- 1) Matiria Medica
- 2) Herbs : Useful in dermatological Behl. P.N. Tharapy.
- 3) Dian Dincin Buchmans Herbal Medicine - Gramercy Publishing Company illustrated by Lauren Jarrett.
- 4) Wealth of India.
- 5) The Ayurvedic Encyclopedia - Natural Secretes to healing.
- 6) Herbs, Spices and Medicinal Plants Vol. I, II, III, IV by Kyle E. Craker & James E. Simon.

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**Master of Cosmetic Technology**  
**(II Semester)**  
**(Herbal Cosmetics)**

**2T9 Advance Herbal Cosmetics -II**

**Max.Marks : 100**  
**Paper : 80**  
**Sessional : 20**

- 1) Herbs used in Hair care and study their phytochemical constituents.
  - a. Hair grooming : Apricot, Aloe
  - b. Hair Growth Promoters : Brahama, Manjistha, Jatamansi.
  - c. Hair Tonics : Bawachi, Hibiscus, Amla.
  - d. Antidandruff : Tulsi, Neem, Wheat Gram Oil, Lemon, Orange.
  - e. Hair Colorants : Henna, Amla, Bhringaraja (E-alba), camomile.
  - f. Hair cleansing : Ritha, Shikakai, Amla.
- 2) Fruits and vegetables as hair and skin care : Apple, Apricot, Banana, Barli, Carrot, Cucumber, Honey, Lemon, Peach, Pudina, Tomato, Yoghurt, Tea.
- 3) Extraction & Isolation of active Principle of Herbs and their incorporation in various cosmetic formulations.
- 4) Analysis of Herbs : General Method of Analysis of Herbs - Determination of standard value; qualitative & quantitative estimation, estimation of resin, & sugars.

**Reference Books :**

- 1) T.B. of Pharmacognosy by Trees and Evans.
- 2) Matiria Medica.
- 3) Wealth of India : C.S.I.P. Publications.
- 4) Hand Book of Herbal Products, Vol. I, II by NIIR Board of Technologist.
- 5) Pharmacopeal Standards of Herbs by Dr.C.R.Karnik.
- 6) Cosmetics Analysis selective methods with technique by P' Bore.

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**Master of Cosmetic Technology  
(II Semester)  
(Common for all specialization)**

**2T3 Skin Dermatology**

**Max.Marks : 50  
Paper : 40  
Sessional : 10**

- i) Skin :** Anatomy and Physiology of skin and appendages. Hair, Nail, Sebaceous Gland, Sweat Gland.
- ii) Common Dermatological Diseases and Therapy :** Acne, Alopecia, Dermatitis (Atopic Contact), Dry skin, Hyperpigmentation and Hypopigmentation, Miliria Seborrheic dermatitis and Dandruff, Sun reaction and protection, Preparation of skin aging.
- iii) Formulary :** Topical corticosteroids, Topical antiinfective, Antiperspirants, Cleaning agents, Depilatories and removal of excess hair by thermolysis, electrolysis, Keratolytic, Pigmenting agent.
- iv) References :**
  - 1) Anatomy and Physiology by Ross G. Wilson.
  - 2) Manual of Dermatologic Therapeutics by Kenneth A. Arndt, (A Little Brown Company)
  - 3) Roxburgh's common skin diseases.

**2P7 Advance Herbal Cosmetics -I**

**Max.Marks : 100  
Practicals : 70  
Sessional : 30**

- 1) Study of Morphological and Microscopic characters of various herbs used in skin care.
- 2) Study of Various Phytochemical Constituents and their identification (Testing)
- 3) Study of various Extraction methods and Isolation of active constituents from various herbs.
- 4) Study of various oils used in Aromatherapy with special reference to its uses.

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**2P8 Advance Herbal Cosmetics -II**

**Max.Marks : 100  
Practicals : 70  
Sessional : 30**

- 1) Study of Morphological and Microscopic characters of various herbs used in hair care.
- 2) Study of Various Phytochemical Constituents and their identification (Testing)
- 3) Study of various Extraction methods & Isolation of active constituents from various herbs.
- 4) Study of various Extraction methods for active constituents from fruits and vegetable.
- 5) Analysis of various herbs for skin and hair care products.

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**Master of Cosmetic Technology  
(III Semester)  
(Common for all Specialization)**

**Thesis :** **Max.Marks : 200**  
Every students for the degree of Master of Cosmetic Technology (all specialization) shall be required to undertake a project involving Methodical research under the supervision of an approved guide and submit three copies of the report of the project, duly certified by the supervisor to the Head of the Department.

**Research Reviews :**

**Max.Marks : 100**

**Seminar :-**

The candidate shall deliver seminar during the session, on selected topics of current research interest as reported in the research journals in the field of Cosmetic Technology.

The candidate shall deliver seminar after completion of dissertation work.

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**INDEX**

| <b>Sr.No.</b> | <b>Topics</b>                                | <b>Page.Nos.</b> |
|---------------|--|------------------|
| 01            | Special Note for Information of the Students | 1 - 2            |
| 02            | Ordinance No. 24 of 2004                     | 3 - 8            |
| 03            | 1T1 Principles of Cosmetic Technology        | 9 - 10           |
| 04            | 1T2 Quality Assurance Techniques             | 10 - 11          |
| 05            | 1T3 Product Development and Formulation      | 12 - 12          |
| 06            | 1T4 Biostatistics & Research Methodology     | 13 - 13          |
| 07            | 1P1 Quality Assurance Technique              | 14 - 14          |
| 08            | 1P2 Product Development and Formulation      | 14 - 15          |
| 09            | 2T8 Advance Herbal Cosmetics -I              | 15 - 16          |
| 10            | 2T9 Advance Herbal Cosmetics -II             | 16 - 16          |
| 11            | 2T3 Skin Dermatology                         | 17 - 17          |
| 12            | 2P7 Advance Herbal Cosmetics -I              | 17 - 17          |
| 13            | 2P8 Advance Herbal Cosmetics -II             | 18 - 18          |
| 14            | Thesis                                       | 18 - 18          |
| 15            | Research Reviews : Seminar                   | 18 - 18          |

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