Master of Cosmetic Technology **Prospectus No.20131916**
(Perfumes & Colours)
(Semester Pattern)

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
Perfumes & Colours
Semester-I, Winter-2012
Semester-II, Summer-2013
Semester-III, Winter-2013
Semester-IV, Summer-2014

2012

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Dineshkumar Joshi
Registrar,
Sant Gadge Baba
Amravati University
Amravati - 444 602

I N D E X

Master of Cosmetic Technology

(Perfumes & Colours)

Semester-I - IV

Prospectus No. 20131916

SANT GADGE BABA AMRAVATI UNIVERSITY

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 examination 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	:	Examinations in General (relevent extracts)
Ordinance No. 18/2001	:	An Ordinance to provide grace marks for passing in a Head of passing and Inprovement 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 (relevent 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	:	For 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.

Dineshkumar Joshi
Registrar
Sant Gadge Baba Amravati University

DIRECTION

No. : 28 / 2012 Dated :- 29.6.2012

Subject : Examinations leading to the Degree of Master of Cosmetic Technology in the Faculty of Home Science (Semester Pattern - Credit Grade Based System), Direction, 2012

Whereas, the Degree of Master of Technology (Cosmetics) in the Faculty of Home Science is in existence in the University under Ordinance No.24 of 2004.

AND

Whereas, the Academic Council in its meeting held on 5.5.2012 while considering item No.53 (3) A) R-1 has resolved to accept the Draft Schemes of Teaching and Examinations, Draft Syllabus and Draft Ordinances for M.Tech. (Cosmetics) (All Specializations) along with other details as per semester system and credit grade based system, and further resolved to refer the Draft Scheme of Teaching and Examination and Draft Ordinances to the Ordinance Committee for making Ordinances and Regulations.

AND

Whereas, the Hon'ble Vice-Chancellor has accepted the corrections recommended by Chairman, Ad-hoc Committee in Cos.Tech. & Dean, faculty of Home Science u/s 14(7) of the Maharashtra Universities Act, 1994 on 25.6.2012 on behalf of the authorities of the University.

AND

Whereas, it is necessary to frame an Ordinance/Regulation for M.Tech. (Cosmetics) as per semester pattern and credit grade system.

AND

Whereas, the making of Ordinance/Regulation for M.Tech.(Cosmetics) Semester-I to IV as per semester pattern and credit grade system is a time consuming process.

AND

Whereas, the Academic Session is commencing from June 2012 and it is necessary to provide the Schemes of examinations, eligibility criteria along with other details for the admission of students in the above pattern.

Now, therefore, I, Dr. Mohan K.Khedkar, Vice Chancellor of Sant Gadge Baba Amravati University, in exercise of powers conferred upon me under sub-section (8) of section 14 of the Maharashtra Universities Act., 1994, do hereby direct as under:

1) This Direction may be called "Examinations leading to the Degree of Master of Cosmetic Technology in the Faculty of Home Science (Semester Pattern - Credit Grade Based System), Direction, 2012".

2) This direction shall come into force from the date of its issuance.

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 Direction 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 or its equivalent grade point in C.G.P.A. For admission to M.Tech. Semester-II, a candidate should have satisfactorily complited Semester-I.

5) An applicant for admission to the final M.Tech. (Semester-III & IV), Examinee should have satisfactorily completed Ist and IInd Semester i.e. the First M.Tech. Examination of this university, and shall have prosecuted a regular course of study in the Department/College as prescribed in this Ordinance. An applicant for the examination to the Final M.Tech. (Semester-III & IV) shall not be allowed to take the examination if he/she fails to submit to his/her dissertation on or before the 20th December or 31st May of the calendar year in which he/she has to take the examination.

6) The duration of the course leading to the degree of Master of Cosmetic Technology in the Faculty of Home Science shall be of two years consisting of Four Semesters, each of six months duration. There shall be Four 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-Ill Examination.

d) The fourth Examination shall be held at the end of fourth semester and shall be known as Master of Cosmetic Technology Semester-IV Examination.

7) The supplementary examinations shall be held for all semesters of M.Tech. examinations.

8) The Examination shall comprise of:

(a) Semester-I		
(i)	Theory '	320 marks
	and it's Internal assessment	80 marks
(ii)	Practical	140 marks
	it's Internal assessment	60 marks
(b) Semester-II		
(i)	Theory	240 marks
	and it's Internal assessment	60 marks
(ii)	Practical	140 marks
	it's Internal assessment	60 marks
(c) Semester-III		
(i)	Seminar on Research Envisaged for Dissertation	100 marks
(ii)	Seminar Recent Trends in Cosmetic Sciences	150 marks
(d) Semester IV		
(i)	Seminar, Dissertation & Viva voce Internal	100 marks
(ii)	Seminar, Dissertation & Viva voce External	200 marks
	Grand Total	1650 marks

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 Examination : 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.

9) Students admitted for Semester III of Maser of Cosmetic Technology shall carry out research under an approved guide belonging to that institution / college.

10) The defence examination of an examinee of Semester IV examination of master of cosmetic Technology shall be carried out by

a. External Examiner appointed by the University, and

b. The guide guiding the Dissertation / Thesis

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

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

11) i) Seminar on Recent Trends in Cosmetic Sciences of third semester should be held at college level & marks should be submitted to the university at the end of third semester.

ii) Viva voce & defence examination based on the dissertation work will be carried out at the end of fourth semester in presence of external & internal examiners & marks should be sent to the university at the end of fourth semester.

12) 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.

13) 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.

14) The fees for the examination shall be as prescribed by the University from time to time.

15) 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 pay 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.

16) Without prejudice to the other provision of Ordinance No. 6 relating examinations in general the provisions of paras 5,8,10,23 and 31 of the said Ordinance shall apply to every candidate.

17) 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 Direction.

18) The examination leading to the Semester I / Semester II / Semester III/ semester IV 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 Examination.

19) The Schemes of Teaching & Examinations with credits along with other details & features of credit system for First, Second, Third and Fourth Semester for the Degree course "Mater of Cosmetic Technology" shall be as per **Appendices-I to III**.

20) Notwithstanding anything to the contrary in this Direction, no person shall be admitted to these examinations if he/ she has already passed the same examination or any examination equivalent there to any other statutory University.

21) The Degree, in the prescribed form shall be signed by the Vice-Chancellor of the University.

Sd/-

Amravati
Dated : 28/06/2012

(Dr.M.K.Khedkar)
Vice-Chancellor

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APPENDIX II
SCHEME FOR CREDITS BASED ON CONTACT HOURS DISTRIBUTION OF SEMESTER III & IV

SEMISTER- III

The topic for the **research envisage for dissertation and seminar on recent trends in Cosmetic Sciences** shall be assigned to him/her by the Guide within one month from the date of the commencement of the third semester.

A. SEMINAR ON RESEARCH ENVISAGED FOR DISSERTATION : 18 Hrs/Wk = 9 Credits

Contents	Credits
1 . Selection of research topic and their applicability	02
2. Introduction and information retrieval systems	02
3. Reading research papers	02
4. Skill in oral presentation	03
Total	**09**

B. SEMINAR ON RECENT TRENDS IN COSMETICS SCIENCES

Contents	Credits
1. Introduction and information retrieval systems	01
2. Organization of material and references	01
3. Representation	01
4. Skill in oral presentation	02
5. Questioning and defending	02
6. Report	02
Total	**09**

"The report on seminars shall be submitted by respective guide/supervisor to Head of Department/Principal."

SEMESTER – IV

Seminar, Dissertation & Viva-voce

Contents	Credits
1. Introduction, information retrieval systems	02
2. Experimental Work	06
3. Scientific Contents	02
4. Result/ Conclusion	04
5. Organization of scientific material, thesis, dissertation and references	04
Total	**18**

APPENDIX-III
Sant Gadge Baba Amravati University, Amravati
M.Tech (Cosmetics) Syllabus
Credit-grade based performance and assessment system (CGPA))
FEATURES OF THE CREDIT SYSTEM

- Master's degree would be of 72 credits each.
- 4 credit course of theory will be of four clock hours per week running for 12 weeks.
- 3 credit course of theory will be of four clock hours per week running for 12 weeks.
- 1.5 credit course of practical will consist of 3 hours of laboratory exercise for 12 weeks.
- 1.5 credit course of practical/demonstration will consist of 6 hours of laboratory exercise for 12 weeks.

FIRST SEMESTER SHALL HAVE 5 THEORY COURSES, 2 PRACTICAL COURSES

- 2 Theory courses x 3 credits = 06 credits
- 3 Theory courses x 4 credits = 12 credits
- 2 Practical course x 1.5 credit = 03 credit

Total = 21 credits

SECOND SEMESTER SHALL HAVE 3 THEORY COURSES, 2 PRACTICAL COURSES

- 3 Theory courses x 4 credits = 12 credits
- 2 Practical course x 1.5 credit = 03 credit

Total = 15 credits

THIRD SEMESTER SHALL HAVE 2 PRACTICAL COURSES OF 18 HRS./WK EACH

- 36 Practical courses/wk of 0.5 credit each = 18 credit

Total = 18 credits

FOURTH SEMESTER SHALL HAVE 1 PRACTICAL COURSE 36 HRS./ WK

- 36 Practical courses/wk of 0.5 credit each = 18 credit

Total = 18 credits

EVERY STUDENT SHALL COMPLETE 72 CREDITS IN A MINIMUM OF FOUR SEMESTERS. FIRST SEMESTERS WILL HAVE 21 CREDITS, IIND SEMESTER WILL HAVE 15 CREDITS, THIRD SEMESTER WILL BE OF 18 CREDITS AND FOURTH SEMESTER WIILL BE OF 18 CREDITS.

- First semesters 21 credits = 21 credits
- Second Semester 15 credits = 15 Credits
- Third semester 18 credits = 18 credits
- Forth semester 18 credits = 18 credits

Four semesters total credits = 72 credits

SCHEME OF SYLLABUS AND CREDIT SYSTEM

1) One credit is equal to one theory hour therefore three/four credits will be for each theory subject as the case may be & one credit is equal to two practical hours therefore for each practical subject there will be 1.5 credits.
2) Nine credits, in third semester have been allocated for recent trends in the Cosmetic Sciences.
3) Total Eighteen credits have been allocated for the seminar, dissertation & viva voce.
4) Academic calendar showing dates of commencement and end of teaching, internal assessment tests and term end examination shall be duly notified before commencement of each semester every year by the affiliated colleges.
5) Credit system offers more options to students and has more flexibility.
6) Students can get requisite credits from the concerned colleges where he is mutually permitted on terms mutually agreed to complete the same and be eligible to appear for term end examination.
7) The term end examination, however, shall be conducted by the Sant Gadge Baba Amravati University in the allotted centers.
8) The research/dissertation work shall be compulsory.
9) These activities, including preparation of the result-sheets for the students, would be co-ordinated by the Department Examination Committee comprising Course in-charges and HOD or Head of the institution.
10) A student who passes the internal tests but fails in Term End Examination of a course shall be given FF grade.
11) Student with FF grade in a course would be granted credit for that course but not the grade for that course and shall have to clear the concerned course.

12) The evaluation is based on average weightage system. Every subject has credit point based system. Every student is awarded grade point out of maximum 10 points in each subject (based on 10 point scale).
13) Grades-Marks for each course would be converted to grades as shown in following Table 1.

Table 1: Grade point for Theory/ Practical/Laboratory course /Seminar

Grade	Range of Marks obtained out of 100 or equivalent fraction	Grade point
AA	90-100	10
AB	80-89	9
BB	70-79	8
BC	60-69	7
CC	55-59	6
CD	50-54	5
FF	Below 50	0
ZZ	Absent in Examination	

14) Equivalence of the conventional division/class with the CGPA in final semester is in accordance with the following table 2 and Grade Points for SGPA and CGPA of M.Tech in Table-3.

Table-2: Equivalence of class/Division to CGPA

Sr.No.	CGPA	Class/Division
1.	7.5 or more than 7.5	First Class with Distinction
2.	6.00 or more but less than or equal to 7.49	First Class
3.	5.50 or more but less than or equal to 5.99	Higher Second Class
4.	5.00 or more but less than or equal to 5.49	Second Class

Table-3 : Grade Points for SGPA and CGPA of M.Tech.

Grade Point	Final Grade
9 - 10	AA
8 - 8.99	AB
7 - 7.99	BB
6 - 6.99	BC
5.5 - 5.99	CC
5 - 5.49	CD
0 - 4.99	FF
Absent in Examination	ZZ

15) Based on the grade point obtained in each subject, Semester Grade Point Average (SGPA) and then Cumulative Grade Point Average (CGPA) are computed as follows.

16) Computation of SGPA and CGPA:

Every student is awarded point out of maximum out of 10 point in each subject. (Based on 10 point scale). Based on the Grade point obtained in subject the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA) are computed. The computation of SGPA and CGPA is as under.

Semester Grade Point Average (SGPA) is the weightage average of point obtained by a student in a semester and computed as follows.

$$SGPA = \frac{U1xM1 + U2xM2 + \ldots UnMn}{U1+U2+\ldots\ldots Un}$$

Where U1, U2,…… are subject credit of the respective course and M1, M2,…….. are the grade point obtained in the respective subject (out of 10).

The Semester Grade Point Average (SGPA) for all the four semester is also mentioned at the end of every semester.

The Cumulative Grade Point Average (CGPA) is used to describe the overall performance of a student in the course and is computed as under. CGPA shall be calculated on final semester of the course (i.e from Semester I-IV).

$$CGPA = \frac{\sum_{n=1}^{n=4} SGPA(n)C(n)}{\sum_{n=1}^{n=4} C(n)}$$

Where SGPA (n) is the n^{th} semester SGPA of the student and C_n is the n^{th} semester total credit. The SGPA and CGPA are rounded off to the second place of decimal.

ACADEMIC CALENDAR AND TERMS

The terms and academic activities of the college affiliated to Sant Gadge Baba Amravati University under CGPA shall be as per the dates given below, only the years shall be changed i.e. the dates shall remain same as given below irrespective of the year.

Beginning of First Term (Semester I, and III)	: As per University academic calendar
Vacation	: As per University academic calendar
Beginning of Second Term (Semester II, and IV)	: As per University academic calendar

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Syllabus prescribed for the course of Master of Cosmetics Technology

(Ist Semester)

(Implemented from the Academic Session 2012-13)

1-T-1 Principles of Cosmetics Technology

(Common for all specialization)

Theory :

Inter facial 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 weting , detergency and water repellance.

Solubilization : Micelle formation, factors affecting micelle formation and physical methods of investigation of miceller solutions, Theory and mechanism of solubilization. Some factors in the formulation of cosmeticeuticals containing solubilized materials like choice of surface active agents, effects and the nature of the solubility, effect of co-solublizing 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 equations, 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 hysterisis loop continuous shear rheometry of semisolids, viscoelasticity,

the creep test, study including principle of operation and application cone & plate, blonnei, Mac Michal, Brooke - field viscometer. Chemical and physical factors affecting rheological proporities. Rheology and product design, Rheology of cosmetic products. Rheological and Biological application.

Micromerities: 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. "juiysical Pharmacy"
3) Lachman et al "The Theory and Practice of Industrial Pharmacy".
4) "Remington, Pharmaceutical Practice" Mac Publications, USA.
5) Badger W.L., & Banchero "Introduction of Chemical Engineering."
6) Chemical Engineering by Richardson & Crudson.

1-T-2 Quality Assurance Technique

(Common for all specialization)

Theory :

1) The theoretical aspects, basic instrumentation and applications of following technique in analysis of cosmetic raw materials and cosmetic preparation.
   a. Separation technique :- Gel filteration Chromatrography, ion exchange chromatrography, affinity chromatography, HPLC, HPTLC, GLC and paper chromatography.
   b. Introduction and brief study of spectroscopic technique UV Visible , IR, NMR, Mass , Atomic absorption spectroscopy and flame photometry.
   c. Light scattering methods in qualitative analysis. Nephilometry and Turbidimetry.
2) General methods of analysis to determine quality of raw materials used in cosmetic industry and evaluation of products :- Emulsion (Liquid, Cream), Suspension (lotion), Powders (Talcum, Baby, Compact), Lipsticks, Mascara, Kajal, Hair Care products (Shampoo, Colorants), Tooth paste, tooth powder, Deodorants, aerosols etc.
3) Validation of analytical methods and calibration of instruments and equipments.
4) Sampling plans and procedures

5) Stability testing – Role of stability testing, stability test guidelines, protocols of stability testing including testing under different climatic zones, and conditions, presentations and recording of stability data and determination of shelf life.

6) Documentation – Importance of documentation, statutory requirements and procedure for documentation.

7) Principles and procedure involved in Biological tests of Following.

   a. Absence of pyrogens.

   b. Histamine like substances

8) Determination of toxic elements.

9) Introduction of skin absorption and studies and their importance.

10) Quality assessment of packaging containers, closures etc

11) Compliance and drug and cosmetic act 1940 with reference to provisions for pakaging and labelling (Rule 150A, Schedule S) permitted colors, flavours etc.

Books Recommended

1) Principles of Instrumental analysis by D.A. Skoog
2) Instrumental methods of chemical analysis by B.K. Sharma
3) Instrumental methods of chemical analysis by G.R. Chatwal and S.K. Anand
4) Introduction to instrumental analysis by F.D. Brawn
5) Analytical chemistry by G.D. Christian.
6) Classification of cosmetic raw materials and adjuncts IS 3958 of Indian standard.
7) F.V. Smith , J.T. Stewart Text Book of Bio pharmaceutical analysis.
8) Indian Pharmacopocia 2007 controller of publications Govt. of India, New Delhi.
9) Beckett and stanlake practical pharmaceutical chemistry part I & II
10) K.A. Cannors, Text Book of pharmaceutical analyser

1-T-3 Product Development & Formulation

(Common for all specialization)

Theory :

1) Development of New Cosmetics :- Steps involved in development new cosmetics, abstracts to its evaluation, limitation of screening procedures, skin toxicity test. Generation of Laboratory data & new cosmetics application as per WHO norms. Requirements and guidelines on clinical trials of new cosmetic in India.

2) Pilot Plant scale up techniques – Purpose & function, concept of & pilot plant for development & contract, planning of pilot plant size of pilot plant, organization & personnels, as per schedules

3) Topical active delivery system – Percutanous absorption, factors affecting vehicles and in cosmetic preparation, enhancers, controlled released cosmetics & general consideration, design & formulation options as microencaplation, Liposome, nano technoogy etc.

4) Product Developemnt Approaches :- Product Development Approaches for Emulsion, suspension, powders, shampoos, tooth paste, antiperspirants, deodorant, Nail lacquers, Aerosal, Soaps & perfume.

5) Performualtion studies :- Physicals & chemical problems inherent in development of new formualtion.

6) Physical proteries – physical form, particle size, solubility wetting of solid, flow properties, organoleptic properties. Chemical properties & stability .

Recommended Books

1) Cosmetic Science and Technology Vol I, II, III by Sagarin.
2) Harry's 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 CSIR

1-T-4 Biostatistics

(Common for all specialization)

Theory :

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; Confidance intervals, square methods, regressions and randomizations; Analysis of variance (1-2- and 3-way) and covariance; quantitative response relationship and probit analysis, Correlation and Co-efficient of Correlation.

REFERENCES

1) Pharmaceutics Statistics by Bolton Marcel Dekkar inc.
2) Biostatistics and Computer by Dr.Paradkar.

1T5 Research Methodology

(Common for all specialization)

Theory :

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) Methodology of Economic Research by A.K.Dasgupta.

1-P-1 Quality Assurance Technique

(Common for all specialization)

Practicals

1) Use of spectrophotometer for analysis of cosmetic raw materials and their formulations.
2) Applications of Basic Chromatographic techniques.
3) Simultaneous estimation of combination preparation.
4) Application of IR for interpretation of samples with different functional groups.
5) Analysis of cosmetic and their adulteration with reference to drugs and cosmetic rules 1945.

1-P-2 Product Development & Formulation

(Common for all specialization)

Practicals

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

Syllabus prescribed for the course of Master of Cosmetics Technology with Specialization in Perfume and Colour

(IInd Semester)

(Implemented from the Academic Session 2012-13)

2-T-1 Advance Perfumes I

Theory :

1) Introduction :- 1) Definitions :- Definitions of perfumes, deters ottos and aromatic waters.
2) Historical Background of perfumes :- Egyptian and Indian civilization.
3) Classification of perfumes :-
    a. Perfumes obtained from plant sources.
    b. Perfumes obtained from animal sources
    c. Various terms used in perfumery
    d. Chemical classification of perfumes
4) Essential Oils :- Introduction production study of various physical and chemical properties of essential oils, concentrate oils, absolute oils, essential oils derived from distillation, essential oils obtained by expression.
5) Perfume Industry :- Historical background, present scenario & various equipments required for set up of perfume industry, study of safety & precautions to be taken in perfumery industries.
6) Methods of Preparation and manufacture of perfumes :- Including (Natural & Synthetic) general operation flow sheets for manufacturing of various essential oils and perfumes, statistics.
7) Analysis and standardization of perfumes:- Includes analysis of essential oils and various physicochemical tests & parameters used for analysis of various perfumes.
8) Essences – Herbal and synthetic attors, cologne, & aromatic water, method of preparation small scale and large scale uses.
9) Odour application :- Odour, its classification and fixation and various methods for odour appreciation.
10) Uses of perfumes :- 1) Aromatherapy and massage using perfumes 2) Use of perfumes in various cosmetics like skin cosmetics, hair cosmetics, mens toiletories.
11) Safety :- Definition, safe use of perfumes, study of safety use of perfumes on naked skin including various dermatological tests.
12) Packaging and marketing :- Importance of presentation, packaging in the past, the impact of aerosols giving a perfumes identity, perfume and world of fashion.

13) Standards on essential oils in India standardizations of essential oils standard for essential oils. material specifications for essential oils conclusion.

References Books

1) The chemistry and manufacture of cosmetics Vol IV
2) Antiperispirants and maison co-de nawarre and second editon revised and expanded edited by Karl Zaden.
3) Skin Permeation – Fundamental and applications edited by Joel L. Zats published by Allured Publishing corporation.
4) Flour oil and floral compounds in perfumery by Danite pajanjis Anones published by Perfmer and flavourist, alured publishing corp. stream illiones.
5) Aroma preservation – Essential oils and fragrances as antimicrobial agents.
6) Cosmetic and drug preservation- principals and practice edited by John J. Kalard.
7) Pouchers perfumes cosmetics and soaps.
8) Modem technology of perfumes, flavours and essential oils 2nd Edition NIIR Board.

(IInd Semester)

2-T-2 Advance Colours I

Theory :

1) Introduction :- Definition of colours, like dye & pigment Theory of color formation at molecules level including studies, rule of multiplicity.
2) Classification of colours :- Detailed classification should be emphasised including color obtained from natural sources like plant animal and mineral sources.
3) Details classification of synthetic colors, dyes & pigments & FDA classification.
4) Vat Dyes :- Indigo group, properties and derivatives.
5) Various physicochemical properties of dyes and colours and analysis of color and dye pigments using instrumental and chromatographic methods.
6) Methods of preparations and manufacture of dyes, pigments, lakes including raw material, flow sheets of selected dyes like indigo, azo dye & phenyline diamine.
7) Safety use in colours cosmetics.

References Books

1) Colours and cosmetics colour material – New cosmetic science mitsui.
2) The cosmetics industry – edited by Norman scientific and regulatory foundations.
3) Scientific and regulatory foundations.
4) Cosmetics safety
5) A Prime for cosmetics scientist.

(IInd Semester)

2-T-3 Skin Dermatology

(Common for all specialization)

Theory : Skin Dermatology

i) Skin : Anatomy and Physiology of skin and appendages. Hair, Nail, Sebaceous Gland, Sweat Gland.

ii) Common Dermatological Diseases and Therapy : Acne, Alopecia, Dermatitis (Atopjc Contact), Dry skin, Hyperpigmentation and Hypopigmentation, Miliria Seborrheic dermatitis and Dandruff, Sun reaction and protection, Preparation of skin aging.

iii) Formulary : Topical corticosteroids, Topical anti-infective, healing agents, Depilatories and removal of excess Hair by thermolysis, electrolysis, Keratolytic, Pigmenting agent.

References:

1) Anatomy and Physiology by Ross G Wilson.

2) Mannual of Dermatotoyc Therapeutics by Kennth A. Amdt, (A Little • Brown Company)

3) Roxburgh's cottmon skin diseases.

(IInd Semester)

2-P-1 Advance Perfumes I

Practical

1) To study the various perfumes obtained from natural sources
2) To study the various perfumes obtained synthetic sources.
3) Preparation of various perfumes using natural sources.
4) Preparation of various perfumes using synthetic sources.
5) Quality control of prepared natural perfumes and their standardization.
6) Quality control of prepared synthetic perfumes and their standardization.

(IInd Semester)

2-P-2 Advance Colours I

Practical :

1) Study the various colours obtained from natural sources.
2) Study the various colours obtained from Synthetic sources.
3) Synthesis of various colours obtained from natural sources.
4) Synthesis of various colours obtained from Synthetic sources.
5) Quality contrast of synthesized natural colour.
6) Quality contrast of synthesized synthetic colour.
7) Standardization of natural colours.
8) Standardization of synthetic colours.

Syllabus Prescribed for the course of Master of Cosmetics Technology
(IIIrd Semester)
(To be implemented from the Academic Session 2013-14)
(Common for all specialization)

Seminar :

(a) The seminar shall be based on research envisaged for dissertation.

(b) The seminar shall be based on recent trends in Cosmetic Sciences.

Syllabus Prescribed for the course of Master of Cosmetics Technology
(IVth Semester)
(To be implemented from the Academic Session 2013-14)
(Common for all specialization)

Dissertation :

Every student for the degree of Master of Cosmetic Technology (all specialization) shall be required to undertake a dissertation work involving Methodical research under the supervision of an approved guide and submit three copies of the report of the dissertation work, duly certified by the supervisor to the Head of the Department. .

Research Reviews:

Seminar on Dissertation :-

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.

Viva-Voce :

Viva-voce shall be based on dissertation work.

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