

Courses of Study

2019-20

M.Sc Cosmetic Science

IILP

School of Fashion Design and Beauty Cosmetology

Semester	Course I				Course II				Course III				Course IV				Course V				Course VI				L	T	P	C	Contact Hours				
	L	T	P	C	L	T	P	C	L	T	P	C	L	T	P	C	L	T	P	C	L	T	P	C						L	T	P	C
I	PCS 101				PCS 102				PCS 103				PCS 104				PCS 111				PCS 112												
	4	0	0	4	4	0	0	4	4	0	0	4	4	0	0	4	0	0	4	2	0	0	4	2					2				
	PC				PC				PC				PC				PC				UC				16	0	4	22	20				
	RM-I				CCC-I				CQA-I				CAN-I				CCC-I-L				CQA-I-L				Seminar I								
II	PCS 201				PCS 202				PCS 203				PCS 204				PCS 211				PCS 212												
	4	0	0	4	4	0	0	4	4	0	0	4	4	0	0	4	0	0	4	2	0	0	4	2					2				
	PC				PC				PC				PCE1				PC				PC				UC				16	0	4	22	20
	CCC-II				CQA-II				CAN-II				DEI				CCC-II-L				CQA-II-L				Seminar II								

Chairman,
Board of Studies, Civil Engineering

School of Fashion Design and Beauty Cosmetology

Semester	Course I				Course II				Course III				Course IV				Course V				Course VI				Course VII				L	T	P	C	Contact Hours
	L	T	P	C	L	T	P	C	L	T	P	C	L	T	P	C	L	T	P	C	L	T	P	C	L	T	P	C					
III	PCS 301				PCS 302								PCS311												12	0	1/2	20	24				
	4	0	0	4	4	0	0	4	4	0	0	4	0	0	4	2	0	0	8	4	0	0	0	2						0	0	0	0
	PC				PC				PCE2				PC				UC				UC												
	CCC-III				CAN-III				DEII				CCC-III-L				Project Stage I				Internship I												
IV	Code				Code				Code				Code				Code				Code				0	0	3/2	16	32				
	L	T	P	C																	L	T	P	C									
	0	0	3	1																	0	0	0										
	UC																																
Project Stage II & Viva Voce																																	

Chairman,
Board of Studies, Civil Engineering

Department Elective I						
Cosmetic Science						
Course Code	Course	L	T	P	C	
1	Research Methodology	4		2	6	
2	Quality Assurance Principles	4		2	6	
3						

Department Elective II						
Cosmetic Science						
Course Code	Course	L	T	P	C	
1	Concepts of Naturals and Ayurceuticals	4		2	6	
2	Skin Dermatology	4		2	6	
3						
4						
5						

Chairman,
Board of Studies, Civil Engineering

School of Fashion Design and Beauty Cosmetology

First Year M.Sc Cosmetics Science (IILP)

Year: First Year

Semester: I

Course: : Concepts of Cosmetic Chemistry I(Theory)

Course Code: PCS101

Teaching Scheme (Hrs/Week)				Continuous Internal Assessment (CIA)					End Semester Examination		Total
L	T	P	C	CIA-1	CIA-2	CIA-3		Lab	Theory	Lab	
4	0	-	4	20	20	10		-	100	-	100
Max. Time, End Semester Exam (Theory) - 3Hrs.											

Prerequisite	<ol style="list-style-type: none"> 1. Introduction and basic concepts of Chemistry. 2. Basic concepts and methods for synthesis of chemicals.
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Course Objectives

- 1 The learners will acquire comprehensive knowledge of cosmetic bases and factors affecting their physical properties, chemical properties and stability.
- 2 The students will get clear understanding of the concepts of rheology, micromeritics and dispersion techniques.

Course Content

Unit No.	Content	Hours
1	Consideration of physical and chemical problems inherent in the formulation and development of cosmetic preparations. a) Physical properties :-Physical forms, practical size, solubility, wetting of solids and flow, cohesiveness and organoleptic properties. b) Chemical properties and stability of ingredients and additives. Introduction to Cosmetic Formulations: Emulsions, creams, lotions, suspensions, oils, powders etc	10



2	<p>Interfacial Phenomena</p> <p>Liquid-Liquid interface : Insoluble monolayers, surface pressure, surface potential, surface rheology and their measurement, structure and state of monolayers, mixed monolayer, Macromolecular films, Biological membranes, Liquid-Solid interface, details study of wetting , detergency and water repellence.</p>	10
3	<p>Rheology:</p> <p>Theoretical considerations, Thixotropy, spurs and bulges in the hystorisis loop, continuous shear rheometry of semisolids, viscoelasticity, creep test study including principle of operation and applications. Plate Stormer, Mac Michael, Brook-field viscometers. Chemical and Physical factors effecting rheological properties, Rheology and product design, Rheology and cosmeceutical processing, Rheology and biological applications.</p>	15
4	<p>Micromeritics</p> <p>Adsorption, air permeability techniques and determination of surface area and size of particles. Classification and evaluation of some basic properties of powders, flow properties of various powder systems. Complexes.</p> <p>Study of Body powders, face powders, talcum powders, baby Powders, Deodorant powders, skin whitening powders.</p>	10
5	<p>Emulsions:</p> <p>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, prevention of interaction on between preservatives and emulsion ingredients like surface active agents hydrophilic polymers, suspended particles packaging materials etc</p> <p>Suspensions: Flocculated and non-flocculated suspensions, selection of wetting suspending and dispensing agents, preparations and stability. Recent stability parameters of emulsion and suspension. Review of marketed formulations based on suspensions.</p>	15
Total No. of Hrs		60

Recommended Resources

- Text Books**
1. Text book of Pharmacognosy – Trease and Evan’s
 2. Pharmacognosy – Claus and Taylor.
 3. Text Book of Pharmacognosy – T. E. Wallis.
 4. Materia Medica – By Nadkarni



School of Fashion Design and Beauty Cosmetology

First Year M.Sc Cosmetics Science (IILP)

Year: First Year

Semester: I

Course: Concepts of Quality Assurance-I

Course Code: PCS102

Teaching Scheme (Hrs/Week)				Continuous Internal Assessment (CIA)					End Semester Examination		Total
L	T	P	C	CIA-1	CIA-2	CIA-3		Lab	Theory	Lab	
4	-	0	4	20	20	10			100		100
Max. Time,End Semester Exam (Theory) -3Hrs.									End Semester Exam (Lab) – 2Hr		

Prerequisite	<ol style="list-style-type: none"> 1. Basic concepts of quality assurance and testing of finished products and raw materials. 2. Introduction of different instrumental analysis and chemical analysis of raw materials and finished products.
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Course Objectives

- 1 At the end of this course, students will be familiar with the basic concepts of cosmetics and will understand commonly used cosmetic bases .The student will study basics of different bases used in formulations.

Course Content

Unit No.	Content	Hours
1.	Quality assurance management ,Good manufacturing practices (GMP),Introduction Quality & related terms Basic concepts. Inspection and Test Inspection & Inspection planning, Inspection manual, Product acceptance Inspection, Inspector errors.	15
2.	Quality assurance management ,Good manufacturing practices (GMP),Introduction Quality & related terms Basic concepts. Inspection and Test Inspection & Inspection planning, Inspection manual, Product acceptance Inspection, Inspector errors.	15



3.	. Quality assessment of packaging materials, containers, closures etc.	15
4.	Study of shelf life determination by various methods and instruments like rheometry etc	15
	Total No. of Hrs	60

Recommended Resources

Text Books

1. New Cosmetic Science by Takeo Mitsui
2. Harrys Cosmetology
3. Cosmetic Science and technology by Sagrin C.B4) Handbook of Cosmetic Science and technology by Marc paye, Andre. O. Barel.



School of Fashion Design and Beauty Cosmetology

First Year M.Sc Cosmetics Science (IILP)

Year: First Year

Semester: I

Course: Concepts of Naturals & Ayurceuticals -I

Course Code: PCS103

Teaching Scheme (Hrs/Week)				Continuous Internal Assessment (CIA)					End Semester Examination		Total
L	T	P	C	CIA-1	CIA-2	CIA-3		Lab	Theory	Lab	
4	0	0	4	20	20	10			100		
Max. Time,End Semester Exam (Theory) -3Hrs.									End Semester Exam (Lab) – 2Hr		

Prerequisite	<ol style="list-style-type: none"> 1. Study of herbs, extraction and standardisation of herbal actives. 2. Cosmetic applications of herbs.
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Course Objectives

- 1 At the end of this course, students will be familiar with mandatory chemical and microbiological Quality requirement of naturals and ayurceuticals in Cosmetic Industry.

Course Content

Unit No.	Content	Hours
1	Introduction to Ayurveda and Traditional medicines for cosmetics. Brief understanding on Ayurvedic formulation types, preparation and their methods based on Ayurvedic formulary of India.	10
2	. Basic principles and general methods for extraction of phyto-constituents from plant materials: Decoction, Maceration, Percolation, infusion, Distillation, Soxhlet extraction, Supercritical fluid extraction, Microwave assisted extraction.	10
3	. Introduction to Ayurvedic Pharmacopoeia and methods for Standardization and quality control of herbal extracts & products. Qualitative & quantitative analysis of herbal extracts.General Method of Analysis of Herbs	15
4	Analysis of raw materials and evaluation of finished products giving emphasis on physic-chemical properties, chemical analysis, identification, instrumental analysis, biological and toxicological testing, microbiological testing	15



5	Various chromatographic techniques for the separation, identification, purification and estimation of phytopharmaceuticals and natural products. TLC & HPTLC finger print techniques and importance of biomarkers.	10
	Total No. of Hrs	60

Recommended Books	<ol style="list-style-type: none">1) Microbiology by Michael.J. Pelczar, J.R.,E.C.S Chan and Noel kreig.2) Microbiology by Ananthnarayan3) Microbiology: A textbook of university students by Sharma P.D.4) Fundamentals of analytical chemistry-Skoog D.A and West D.M.Saunders,College Publication5) Principle and practice of analytical chemistry-Fifield F.W and kealyD,Blackwell science.
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School of Fashion Design and Beauty Cosmetology

First Year M.Sc Cosmetics Science (IILP)

Year: First Year

Semester: I

Course: Research Methodology-I

Course Code: PCS104

Teaching Scheme (Hrs/Week)				Continuous Internal Assessment (CIA)					End Semester Examination		Total
L	T	P	C	CIA-1	CIA-2	CIA-3		Lab	Theory	Lab	
4	0	0	4	20	20	10			100		100
Max. Time,End Semester Exam (Theory) -3Hrs.									End Semester Exam (Lab) – 2Hr		

Prerequisite	1. Basic concepts of Research
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Course Objectives

- At the end of this course, students will be familiar with mandatory chemical and microbiological Quality requirement of naturals and ayurceuticals in Cosmetic Industry.

Course Content

Unit No.	Content	Hours
1	Science: Scientific methods, Scientific approach	
2	Scales of measurement and the appropriate statistical techniques , Critical analysis of research, Analysis of data and research report	
3	Types of Research: Historical, Survey, Experimental, Case Study, Social Research, Participative Research	
4	Types of Research: Historical, Survey, Experimental, Case Study, Social Research, Participative Research	
5	Data Gathering Instruments: Observation, Questionnaire, Interview, Scaling Methods, Case Study, Home Visits, reliability and validity of measuring instruments	
Total No. of Hrs		60



Resources

Recommended Books

1. Bhandarkar P.L. and Wilkinson T.S. (2000): Methodology and Techniques of Social Research, Himalaya Publishing House, Mumbai
2. Bhatnagar G.L. (1990): Reseach Methods and Measurements in Behavioural and Social Sciences, Agri Cole Publishing Academy, New Dehi.
3. Dooley D. (1995): Strategies for Interpreting Qualitative Data: Sage Publications, California.
4. Gay L.R. (1981,2nd Edition): Common Problems Proper Solutions: Avoiding Errors in Quantitative Research, Beverly Hills, Sage Publications, California.
5. Mukherjee R. (1989): The Quality of Life: Valuation in Social Research, Sage Publications, New Delhi.
6. Stranss A And Corbin J. (1990): Basis of Qualitative Research: Grounded Theory Procedures and Techniques, Sage Publications, California.



School of Fashion Design and Beauty Cosmetology

First Year M.Sc Cosmetics Science (IILP)

Year: First Year

Semester: I

Course: Concepts of Cosmetic Chemistry-I-L

Course Code: PCS111

Teaching Scheme (Hrs/Week)				Continuous Internal Assessment (CIA)					End Semester Examination		Total
L	T	P	C	CIA-1	CIA-2	CIA-3		Lab	Theory	Lab	
0	0	4	2	20	20	10		50	0	50	100
Max. Time, End Semester Exam (Theory) -3Hrs.									End Semester Exam (Lab) – 3Hr		

Objectives	
1.	At the end of this course, students will know the various test prescribed by Bureau of Indian standards. They will also be familiar with analysis of raw materials with regard to its qualitative and quantitative tests.

Unit Number	Details	Hours
1	Study of physical and chemical properties of ingredients used in Cosmetics	4
2	Formulation of Dispersions (emulsions & suspensions) and evaluation as per BIS	4
3	Formulation of Talcum powder & compact powders and evaluation as per BIS.	4
4	Formulation of Lipsticks and evaluation as per BIS	4
5	Formulation of Shampoo and evaluation as per BIS	4
6	Formulation of Hair Colorants and evaluation as per BIS	8
7	Formulation of Tooth paste & powder and evaluation as per BIS	4
8	Formulation of Nail lacquers and evaluation as per BIS	4



9	Formulation of Shaving cream and evaluation as per BIS	4
10	Formulation of After shave lotion and evaluation as per BIS	4
11	Formulation of soaps and evaluation as per BIS	4
Total		48 Hrs

School of Fashion Design and Beauty Cosmetology

First Year M.Sc Cosmetics Science (IILP)

Year: First Year

Semester: I

Course: Concepts of Quality Assurance-I-L

Course Code: PCS112

Teaching Scheme (Hrs/Week)				Continuous Internal Assessment (CIA)					End Semester Examination		Total
L	T	P	C	CIA-1	CIA-2	CIA-3		Lab	Theory	Lab	
0	0	4	2	20	20	10		50	0	50	100
Max. Time,End Semester Exam (Theory) -3Hrs.									End Semester Exam (Lab) – 3Hr		

Objectives

The students will be aware of quality control methods applicable to commonly used raw material and finished products.

Unit Number	Details	Hours
1	Carry out identification, physicochemical properties, chemical analysis, instrumental analysis and safety testing for Raw Materials : Waxes, fatty acids/ Alcohols/ esters, dispersing agents, Emulsifiers colors, perfumes, preservatives, antioxidants, sweetening agents, etc.	16
2	Carry out evaluation of Finished Products : Emulsion, suspensions, powders (Talcum, baby and compacts). Lipsticks, mascara, Kajal, Hair care products (Shampoo, colorants), toothpaste, toothpowders, antiperspirant and deodorants, nail lacquers, aerosols, Mens toiletries (Shaving cream, after shave lotions, eue de colongne), soaps, perfumes.	16



3	Evaluation (determination and detection) of the following Color Perfumes Flavours	16
		48 hours

School of Fashion Design and Beauty Cosmetology

First Year M.Sc Cosmetics Science (IILP)

Year: First Year

Semester: II

Course: : Concepts of Cosmetic Chemistry II(Theory)

Course Code: PCS201

Teaching Scheme (Hrs/Week)				Continuous Internal Assessment (CIA)					End Semester Examination		Total
L	T	P	C	CIA-1	CIA-2	CIA-3		Lab	Theory	Lab	
4	0	-	4	20	20	10		-	100	-	100
Max. Time, End Semester Exam (Theory) - 3Hrs.											

Prerequisite	<ol style="list-style-type: none"> 1. Introduction and basic concepts of Chemistry. 2. Basic concepts and methods for synthesis of chemicals.
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Course Objectives

- 1 The learners will acquire comprehensive knowledge of cosmetic bases and factors affecting their physical properties, chemical properties and stability.
- 2 The students will get clear understanding of the concepts of rheology, micromeritics and dispersion techniques.

Course Content

Unit No.	Content	Hours
1	Nanotechnology Encapsulation techniques for topical delivery eg Spraydrying. Liposomes and Proliposomes to Enhance Cosmetics Delivery and its approaches. Techniques of manufacturing: physical, physiochemical, chemical methods, Release methods and pattern, safety aspects and applications. Nanoparticles: Techniques of manufacturing, safety aspects and applications. Liposomes : Classification, Techniques of manufacturing, safety aspects and applications. Niosomes and Transfersomes: Classification, Techniques of manufacturing, safety aspects and applications.	10



2	Pilot Plant Scale up technique of Emulsions, suspensions, powders and gels. General considerations - review of formula, raw materials, equipment etc. In process evaluations, preparation of master formula and process, establishing pilot plant scale up techniques. Preparation of Batch manufacturing record.	10
3	Methods of Up scaling and filling technology for production of liquids and aerosols.	15
4	Packaging of cosmetics – Filling of solids, semisolids & liquids. Recent Materials used for cosmetic packaging. Review trends in green and biodegradable packaging and airless packaging helping to reduce microbiological growth.	10
5	Review of invivo and invitro testings in Skincare and haircare.	15
Total No. of Hrs		60

Recommended Resources

Text Books

1. Text book of Pharmacognosy – Trease and Evan's
2. Pharmacognosy – Claus and Taylor.
3. Text Book of Pharmacognosy – T. E. Wallis.
4. Materia Medica – By Nadkarni



School of Fashion Design and Beauty Cosmetology

First Year M.Sc Cosmetics Science (IILP)

Year: First Year

Semester: II

Course: Concepts of Quality Assurance-II

Course Code: PCS202

Teaching Scheme (Hrs/Week)				Continuous Internal Assessment (CIA)				End Semester Examination		Total	
L	T	P	C	CIA-1	CIA-2	CIA-3		Lab	Theory	Lab	
4	0	0	4	20	20	10			100		100
Max. Time,End Semester Exam (Theory) -3Hrs.									End Semester Exam (Lab) – 2Hr		

Prerequisite	<p>3. Basic concepts of quality assurance and testing of finished products and raw materials.</p> <p>4. Introduction of different instrumental analysis and chemical analysis of raw materials and finished products.</p>
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Course Objectives

- At the end of this course, students will be familiar with the basic concepts of cosmetics and will understand commonly used cosmetic bases .The student will study basics of different bases used in formulations.

Course Content

Unit No.	Content	Hours
1.	Ultraviolet and visible spectroscopy: Introduction, Principle, Working, Different versions available and its applicability in various sectors of Cosmetics.	15
2.	Flame photometry: Introduction, Principle, Working,General principles and determination of metal ions like alkali and alkaline earth metals.	15
3.	Chromatography: Introduction, Principle, Working, General principles, type-columns, paper, thin layer, Introduction to gas and high pressure liquid chromatography, Different commercial grades available and its applicability in various sectors of Cosmetics	15
4.	Stains and staining method in microbiology.Review of recent microbiological evaluation methods used in cosmetic industry,its significance	15
Total No. of Hrs		60



Recommended Resources

Text Books

- 1) Pharmaceutical analysis: Kasture Vadodkar
- 2) Pharmaceutical analysis:P.D.Chaitanya Sudha
- 3) Quantitative Analysis: Vogel



School of Fashion Design and Beauty Cosmetology

First Year M.Sc Cosmetics Science (IILP)

Year: First Year

Semester: II

Course: Concepts of Naturals & Ayurceuticals -II

Course Code: PCS203

Teaching Scheme (Hrs/Week)				Continuous Internal Assessment (CIA)				End Semester Examination		Total
L	T	P	C	CIA-1	CIA-2	CIA-3		Lab	Theory	Lab
4	0	0	4	20	20	10			100	
Max. Time,End Semester Exam (Theory) -3Hrs.									End Semester Exam (Lab) – 2Hr	

Prerequisite	5. Study of herbs, extraction and standardisation of herbal actives. 6. Cosmetic applications of herbs.
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Course Objectives

- 1** At the end of this course, students will be familiar with mandatory chemical and microbiological Quality requirement of naturals and ayurceuticals in Cosmetic Industry.

Course Content		
Unit No.	Content	Hours
1	Collection and identification of Herbal raw material, methods for identification. Functional evaluation & herbal actives, significance of research, characteristics of pharmacological research, design of pharmacological study on herbal medicines.	15
2	Extraction and isolation of compounds from herbs Compounds, structures and properties. Methods of extraction of compounds Solvents, distillation, Supercritical fluid extraction.	15
3	Standardization and quality control of herbal extracts & products. Standardization QA, AC & GMP, SOP, Qualitative & quantitative analysis of herbal extracts and products. New technologies and other bioassays for screening and mechanism study. Key to functional mechanism study of Herbal medicines	15
4	Evaluation of total microbial count of natural herbs. Isolation and identification of aerobic microorganisms of natural herbs as specified in BIS and CTFA guide lines.	15

	<p>Isolation and identification of anaerobic microorganisms from natural herbs</p> <p>Evaluation of antimicrobial activity and determination of minimum MIC of synthetic compounds and herbal extracts.</p> <p>Determination of preservative efficacy in herbal extracts and in finished products.</p>	
	Total No. of Hrs	60

<p>Recommended Books</p>	<ol style="list-style-type: none"> 1) Microbiology by Michael.J. Pelczar, J.R.,E.C.S Chan and Noel kreig. 2) Microbiology by Ananthnarayan 3) Microbiology: A textbook of university students by Sharma P.D. 4) Fundamentals of analytical chemistry-Skoog D.A and West D.M.Saunders,College Publication 5) Principle and practice of analytical chemistry-Fifield F.W and kealyD,Blackwell science.
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School of Fashion Design and Beauty Cosmetology

First Year M.Sc Cosmetics Science (IILP)

Year: First Year

Semester: II

Course: Concepts of Cosmetic Chemistry-II-L

Course Code: PCS211

Teaching Scheme (Hrs/Week)				Continuous Internal Assessment (CIA)					End Semester Examination		Total
L	T	P	C	CIA-1	CIA-2	CIA-3		Lab	Theory	Lab	
0	0	4	2	20	20	10		50	0	50	100
Max. Time,End Semester Exam (Theory) -3Hrs.									End Semester Exam (Lab) – 3Hr		

Objectives

1.	At the end of this course, students will know the various test prescribed by Bureau of Indian standards.They will also be familiar with analysis of raw materials with regard to its qualitative and
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quantitative tests.

Unit Number	Details	Hours
1	Preparation of Nanotechnology based vesicles for skincare	8
2	Preparation of Nanotechnology based vesicles for Haircare	8
3	Understanding formulation and Preparation of containers and closures for Skincare	4
4	Understanding formulation and Preparation of containers and closures for Haircare.	4
5	Preparation of new Skincare/Haircare bases in Cosmetics with reference to recent Cosmetic Patents.	8
6	Researching and formulating cancer free plastics/green packaging for a Cosmetic brand	8
Total		40 Hrs

School of Fashion Design and Beauty Cosmetology

First Year M.Sc Cosmetics Science (IILP)

Year: First Year

Semester: II

Course: Concepts of Quality Assurance-II-L

Course Code: PCS212

Teaching Scheme (Hrs/Week)				Continuous Internal Assessment (CIA)					End Semester Examination		Total
L	T	P	C	CIA-1	CIA-2	CIA-3		Lab	Theory	Lab	
0	0	4	2	20	20	10		50	0	50	100
Max. Time,End Semester Exam (Theory) -3Hrs.									End Semester Exam (Lab) – 3Hr		

Objectives	
	The students will be aware of quality control methods applicable to commonly used raw material and finished products.

Unit Number	Details	Hours
1	Determination of Microbial load of marketed skincare and Haircare products.	16
2	Evaluation of marketed Cosmetic Products using Chromatography	16
3	Evaluation of marketed Cosmetic Products using Conductometry	16
		48 hours

