

GUJARAT TECHNOLOGICAL UNIVERSITY
Integrated Master of Science (Biotechnology)

Semester: 9

Subject Name: Panchakarma and Detoxification Therapie

Subject Code: 1390410

Prerequisite: The prerequisites for Panchakarma and detoxification therapies include a thorough health assessment by an Ayurvedic practitioner to determine individual dosha imbalances. Patients should follow a preparatory phase (Purva Karma), which involves dietary adjustments, internal and external oleation (Snehana), and sweating therapy (Swedana) to loosen toxins. A light, easily digestible diet is recommended, along with proper hydration and mental relaxation. Certain contraindications, such as pregnancy, severe illness, or extreme weakness, should be considered before undergoing Panchakarma.

Rationale: Panchakarma and detoxification therapies are rooted in Ayurvedic principles, aiming to cleanse the body of accumulated toxins (Ama) and restore balance to the doshas (Vata, Pitta, and Kapha). These therapies involve a systematic process of purification, including five main procedures—Vamana (therapeutic emesis), Virechana (purgation), Basti (medicated enema), Nasya (nasal therapy), and Raktamokshana (bloodletting). By eliminating toxins, improving digestion, and rejuvenating bodily systems, Panchakarma enhances overall health, strengthens immunity, and promotes mental clarity. It is particularly beneficial for preventing diseases, managing chronic conditions, and supporting overall well-being.

Course Scheme:

Teaching Scheme			Total Credits	Assessment Pattern and Marks				Total Marks
L	T	PR	C	Theory		Practical		
				ESE (E)	PA(M)	ESE (V)	PA (I)	
0	0	4	2	0	0	0	50	50

Course Content:

Sr. No.	Course Content	No. of Hours	% of Weightage
1	<p>Unit 1: Fundamentals of Panchakarma and Detoxification</p> <ul style="list-style-type: none"> • Introduction to Panchakarma in Ayurveda <ul style="list-style-type: none"> ○ Concept and Importance of Detoxification in Traditional Medicine ○ Role of Panchakarma in Health Maintenance and Disease Management • Understanding Ama (Toxins) and Its Effects on the Body <ul style="list-style-type: none"> ○ Concept of Ama and Agni (Digestive Fire) in Ayurveda ○ Scientific Basis of Toxin Accumulation and Elimination • Comparison of Panchakarma with Modern Detoxification Techniques <ul style="list-style-type: none"> ○ Liver Detoxification, Heavy Metal Chelation, Colon Cleansing 	18	30

GUJARAT TECHNOLOGICAL UNIVERSITY
Integrated Master of Science (Biotechnology)
Semester: 9
Subject Name: Panchakarma and Detoxification Therapie
Subject Code: 1390410

	<ul style="list-style-type: none"> ○ Integrative Approaches: Ayurveda, Naturopathy, Functional Medicine <p>Practical sessions :</p> <ul style="list-style-type: none"> ● Preparation of Ama–Agni comparative concept chart ● In-vitro simulation of digestive efficiency using enzyme activity model ● Comparative chart of Panchakarma and modern detoxification techniques 		
2	<p>Unit 2: The Five Panchakarma Therapies – Mechanisms and Applications</p> <ul style="list-style-type: none"> ● Vamana (Therapeutic Emesis) <ul style="list-style-type: none"> ○ Indications, Contraindications, Procedure, and Physiological Effects ○ Modern Perspectives on Vomiting as Detox Therapy ● Virechana (Therapeutic Purgation) <ul style="list-style-type: none"> ○ Role of Purgation in Detoxification of the Liver and Gut ○ Use of Herbal and Pharmaceutical Laxatives ● Basti (Medicated Enema Therapy) <ul style="list-style-type: none"> ○ Types of Basti: Anuvasana and Niruha ○ Gut Microbiota Modulation and Colon Health ● Nasya (Nasal Administration of Medication) <ul style="list-style-type: none"> ○ Detoxification of the Head and Sinuses ○ Role in Neurological and ENT Disorders ● Raktamokshana (Bloodletting Therapy) <ul style="list-style-type: none"> ○ Jalaukavacharana (Leech Therapy), Siravedha (Venesection) ○ Modern Applications: Cupping Therapy, Phlebotomy <p>Practical Sessions :</p> <ul style="list-style-type: none"> ● Preparation of herbal decoction (Kwatha) for Virechana ● Formulation of medicated oil (Sneha Kalpana model) ● Charting Panchakarma therapies with target physiological systems 	22	37
3	<p>Unit 3: Scientific Basis and Physiological Impact of Detoxification Therapies</p> <ul style="list-style-type: none"> ● Detoxification at the Cellular and Molecular Level <ul style="list-style-type: none"> ○ Role of Liver, Kidneys, and Lymphatic System in Detoxification 	20	33

GUJARAT TECHNOLOGICAL UNIVERSITY
Integrated Master of Science (Biotechnology)
Semester: 9
Subject Name: Panchakarma and Detoxification Therapie
Subject Code: 1390410

	<ul style="list-style-type: none"> ○ Impact on Oxidative Stress, Inflammation, and Immunity ● Microbiome and Gut Health in Detoxification <ul style="list-style-type: none"> ○ Panchakarma and Its Effect on Gut Microbiota ○ Fecal Microbiota Transplantation (FMT) vs. Basti ● Ayurvedic Herbs and Rasayanas for Detoxification <ul style="list-style-type: none"> ○ Triphala, Guduchi, Ashwagandha, Turmeric, and Their Pharmacological Actions ○ Role of Polyphenols, Antioxidants, and Adaptogens in Detoxification <p style="text-align: center;">Practical Sessions :</p> <ul style="list-style-type: none"> ● Evaluation of antioxidant activity of herbal extracts (DPPH assay) ● Preparation and comparison of aqueous and ethanolic herbal extracts ● Microbiome concept mapping: Panchakarma vs FMT 		
--	--	--	--

Reference Books:

1. Charaka Samhita – Panchakarma Chapter – Translated by P.V. Sharma
2. Ashtanga Hridayam – Panchakarma Vidhi – Vagbhata
3. Textbook of Panchakarma – Dr. Ravidatta Sharma
4. The Detox Prescription: Supercharge Your Health with Panchakarma – Woodson Merrell
5. Scientific Basis of Ayurveda and Detoxification – Robert Svoboda

Course Outcome:

After Completion of the Course, Student will able to:

Sr. No	Course Outcomes	RBT Level
1	Explain the fundamental concepts of Panchakarma, Ama, Agni, and detoxification in relation to modern biological processes.	UN, RM
2	Describe the preparation methods of Ayurvedic formulations such as Kwatha and medicated oils and their relevance in detoxification.	AP , UN
3	Apply basic biochemical and analytical techniques to evaluate digestion models and antioxidant properties of herbal extracts.	AP ,AN
4	Analyze and compare traditional Panchakarma therapies with modern detoxification approaches and microbiome-based interventions	AN
5	Develop charts, models, and concept maps integrating Ayurvedic principles with modern scientific understanding of detoxification.	UN, AP, CR

*RM: Remember, UN: Understand, AP: Apply, AN: Analyze, EL: Evaluate, CR: Create

List of Assignments (Minimum 5 to be completed):

1. Review Paper on Panchakarma in the Management of Metabolic Disorders

GUJARAT TECHNOLOGICAL UNIVERSITY
Integrated Master of Science (Biotechnology)

Semester: 9

Subject Name: Panchakarma and Detoxification Therapie

Subject Code: 1390410

2. Comparative Analysis of Ayurvedic Detoxification and Modern Detox Therapies
3. Case Study on the Effects of Basti Therapy in Gastrointestinal Disorders
4. Research Proposal for Investigating the Role of Nasya in Neurological Health
5. Analysis of Clinical Trials on Panchakarma and Chronic Disease Management
