Re-Accredited 'B++' 2.86 CGPA by NAAC
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વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી
યુનિવર્સિટી કેમ્પસ, ઉધના-મગદલ્લા રોડ, સુરત - ૩૯૫ ૦૦૭, ગુજરાત, ભારત.
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ક્રમાંક :ઓથો./પરિપત્ર/૧૨૨૫૯/૨૦૨૫
તા.૦૨/૦૬/૨૦૨૫

પ્રતિ,
વડાશ્રી,
બાયોસાયન્સ વિભાગ,
વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી,
સુરત.

વિષય:– PG Diploma in Herbal Technology and Integrated Wellness ના અભ્યાસક્રમ અંગે.

સુજ્ઞશ્રી,

સવિનય જણાવવાનું કે, શૈક્ષણિક વર્ષ ૨૦૨૫–૨૬ થી અમલમાં આવનાર PG Diploma in Herbal Technology and Integrated Wellness ના અભ્યાસક્રમને વિજ્ઞાન વિદ્યાશાખાની તા.૩૦/૦૪/૨૦૨૫ની સભાનાં ઠરાવ ક્રમાંક: ૩ અંતર્ગત સુચવેલ સુધારા સાથે જૈવ વિજ્ઞાન વિષયની અભ્યાસ સમિતિનાં ચેરમેનશ્રીએ અભ્યાસ સમિતિ વતી અને વિજ્ઞાન વિદ્યાશાખાનાં અધ્યક્ષશ્રીએ વિજ્ઞાન વિદ્યાશાખા વતી મંજુર કરી એકેડેમિક કાઉન્સિલને કરેલ ભલામણ સ્વીકારી એકેડેમિક કાઉન્સિલની તા.૦૫/૦૫/૨૦૨૫ ની સભાનાં ઠરાવ ક્રમાંક:૧૫૧ થી મંજુર કરેલ છે. જેનો અમલ કરવા આથી જાણ કરવામાં આવે છે.

બિડાણ: ઉપર મુજબ

કુલસચિવ

પ્રતિ,
૧) ડીનશ્રી, વિજ્ઞાન વિદ્યાશાખા.
૨) પરીક્ષા નિયામકશ્રી, પરીક્ષા વિભાગ, વીર નર્મદ દ. ગુ. યુનિવર્સિટી, સુરત.
.....તરફ જાણ તેમજ અમલ સારૂ.

Post Graduate Diploma in Herbal Technology and Integrated Wellness(PGDHT)

1. **Title of the Course:** P.G. Diploma in Herbal Technology and Integrated Wellness(PGDHT)
2. **Eligibility:** Candidate should have any of the following

   • Candidates must have completed a **Bachelor's degree in Science** or a related field (e.g., **Botany, Zoology, Biotechnology, Biochemistry, Agriculture, Microbiology, Ayurveda, Pharmacy, or Life Sciences**) from a recognized university.

   • Those with a **BAMS, BHMS, B.Sc. Nursing, or B.Pharm** background may also be eligible, depending on institutional policy.

3. **Duration:** One Year (2 Semester)
4. **Medium of Instruction:** English

Program Outcomes (POs)

1. **Remembering (Knowledge - Level 1)**
   - Define and describe fundamental concepts of herbal technology, medicinal plants, and integrated health systems.
   - Identify key herbs and their traditional uses in different healthcare systems (e.g., Ayurveda, Traditional Chinese Medicine).
2. **Understanding (Comprehension - Level 2)**
   - Explain the principles of herbal extraction, phytochemical screening, and quality control of herbal products.
   - Compare conventional medicine with herbal and integrative health approaches.
3. **Applying (Application - Level 3)**
   - Demonstrate the preparation of herbal formulations (e.g., decoctions, extracts, oils, and tablets).
   - Use standard techniques for evaluating the efficacy and safety of herbal products.
4. **Analyzing (Analysis - Level 4)**
   - Differentiate between various phytoconstituents and their therapeutic effects.
   - Assess the impact of environmental, ethical, and regulatory factors on herbal product development.
5. **Evaluating (Evaluation - Level 5)**
   - Critically evaluate scientific literature on herbal medicine for evidence-based application.
   - Justify the role of herbal technology in integrative health systems and public healthcare policies.
6. **Creating (Synthesis - Level 6)**
   - Develop innovative herbal formulations considering safety, efficacy, and standardization.
   - Design integrative health models combining herbal medicine with modern healthcare approaches.
7. **Affective Domain (Attitude & Values)**
   - Appreciate the role of traditional knowledge in modern herbal technology.
   - Demonstrate ethical responsibility in the sourcing and usage of medicinal plants.
8. **Psychomotor Domain (Skills & Hands-on Learning)**
   - Perform laboratory techniques for herbal extraction, isolation, and standardization.
   - Conduct hands-on identification of medicinal plants and their parts used in therapy.

Program Specific Outcomes (PSOs)

PSO 1: Understanding the Fundamentals of Herbal Technology

- **Remembering (L1):** Recall the history, scope, and significance of herbal medicine in different cultures.
- **Understanding (L2):** Explain the fundamental principles of herbal technology, including extraction methods and phytochemical screening.
- **Applying (L3):** Utilize knowledge of medicinal plants to classify herbs based on their active constituents and therapeutic uses.

PSO 2: Herbal Formulation, Standardization, and Quality Control

- **Analyzing (L4):** Differentiate between various methods of herbal drug standardization and quality control.
- **Evaluating (L5):** Assess the purity, safety, and efficacy of herbal formulations using scientific parameters.
- **Creating (L6):** Develop new herbal formulations considering stability, bioavailability, and regulatory guidelines.

PSO 3: Integration of Herbal Medicine with Modern Healthcare Systems

- **Understanding (L2):** Explain the concepts of integrative health and the role of herbal medicine in complementary and alternative medicine (CAM).
- **Applying (L3):** Identify potential interactions between herbal and allopathic medicines for better patient outcomes.
- **Evaluating (L5):** Critically assess research studies supporting the use of herbal medicine in integrated health models.

PSO 4: Ethical, Environmental, and Sustainable Practices in Herbal Technology

- **Analyzing (L4):** Examine ethical concerns, environmental sustainability, and legal aspects of herbal drug development.
- **Affective Domain:** Develop a responsible attitude towards biodiversity conservation and sustainable use of medicinal plants.

PSO 5: Practical Skills in Herbal Technology *(Psychomotor Domain)*

- **Applying (L3):** Perform extraction, isolation, and identification of phytochemicals using laboratory techniques.
- **Creating (L6):** Innovate new herbal products by integrating traditional knowledge with modern scientific approaches.

5. Paper Style for Core Papers: Total Marks: 70

Q-1: 14 marks: Objective type Question (Equal distribution from each unit)

Q-2: 14 marks (Unit 1)

Q-3: 14 marks (Unit 2)

Q-4: 14 marks (Unit 3)

Q-5: 14 marks (Unit 4)

6. Standard of Passing:

a. Candidate must obtain 40 % marks in theory papers and practical papers separately.

b. There will be a separate head of passing for theory papers and practical. If candidate fails in one of the heads, he / she has to reappear only for the failed head.

7. Qualification of the Examiners: All examiners on the University panel for theory and practical should have Master degree in the subject/ relevant subject. There will be two examiners (Preferably one internal and one external) for practical examination in each subject.

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT

Post Graduate Diploma in Herbal Technology and Integrated Wellness

(PGDHT) Course Structure of Semester 1

Semester-1							
Course Code	**Title of The Course**	**Course Credit**	**Hrs. Per Week**	**Internal Exam Marks**	**External Exam Marks**	**Total Marks**	**Duration of External Exam (Hr.)**
Core Course							
PGDHT-1001	Fundamentals of Herbal Technology	04	04	30	70	100	03
PGDHT-1002	Ancient Indian Herbal Drug Technologies	04	04	30	70	100	03
PGDHT-1003	Spiritual and Emotional Health in Holistic Practices	04	04	30	70	100	03
Elective Course (Any One)							
PGDHT-1004A	Human Physiology & Human Disorders	04	04	30	70	100	03
Practical Course							
PGDHT-1005	PGDHT-1005: PRACTICALS BASED ON PAPER PGDHT- 1001, 1002,1003 &1004	08	16	60	140	200	12
Skilled Based Elective Course (Any One)							
PGDHT- 1006 A	MOOC/ Swayam	02	02	20	30	50	02
Total		26	34	200	450	650	

PGDHT-1001: Fundamentals of Herbal Technology

Semester: I	
Course (subject) Code	PGDHT-1001
Subject Title	Fundamentals of Herbal Technology
Course Type	Core Compulsory
Teaching Time	15×4=60 Hours
Subject Outcome	At the end of the course, the students will get knowledge of • Understand the fundamentals of herbal technology, holistic health principles, and global traditional systems. • Identify medicinal plants, their phytochemicals, and explain their therapeutic roles and preparation methods. • Develop basic skills in formulating herbal remedies for wellness, integrating natural therapies and lifestyle practices. • Evaluate safety, ethical considerations, and sustainable practices in the use and development of herbal products.

Course Content:

Unit No.	Content	Teaching Hours
Unit-1	**Introduction to Herbal Technology and Holistic Health**	**15 Hr.**
1.1	Definition and scope of herbal technology, Historical perspective and evolution of herbal technology	
1.2	Overview of global herbal systems (Ayurveda, Traditional Chinese Medicine, Indigenous herbal practices).	
1.3	Core concepts of holistic health and its relation to herbal technology.	
1.4	Role of herbal technology in preventive health and wellness, Integrating herbs as part of a holistic lifestyle.	
1.5	Natural therapies: Shirodhara, Nasytherapy, Acupressure, Acupuncture, Detox Technique, Janubasti	
Unit-2	**Basics of Medicinal Plants and Phytochemistry**	**15 Hr.**
2.1	Basics of plant biology, morphology, and taxonomy, Identification and classification of medicinal plants, Common medicinal plants used in herbal technology	
2.2	Overview of phytochemicals (alkaloids, flavonoids, terpenes, tannins, etc.) and their roles in health.	
2.3	Extraction methods and solvent use in isolating active compounds, Mechanisms of action of key herbal constituents	
2.4	Developing daily routines that integrate spiritual and emotional health practices, Incorporating meditation, journaling, nature connection, and herbal supports.	

2.5	Building a supportive lifestyle with sleep hygiene, nutrition, and mindful practices	
Unit-3	**Preparation and Formulation of Herbal Remedies**	**15 Hr.**
3.1	**Basic Techniques in Herbal Preparation:** ○ Introduction to standard methods: infusions, decoctions, tinctures, powders, syrups, and salves. ○ Step-by-step preparation of herbal remedies. ○ Dosage forms and standardization of herbal products. ○ Classification of herbal products: teas, tinctures, capsules, topical applications (creams, oils, balms), and personal care items. ○ Forms of administration and absorption pathways for each product type. ○ Overview of traditional vs. modern approaches to herbal product formulation	
3.2	**Formulating Herbal Blends:** ○ Understanding herbal synergy and compatibility. ○ Formulating blends for specific health concerns (e.g., immune support, relaxation, digestion). ○ Personalizing herbal formulas based on individual health needs.	
Unit-4	**Safety, Ethics, and Sustainable Practices in Herbal Technology**	**15 Hr.**
4.1	**Herbal Safety and Contraindications:** ○ Safe use of herbs: dosage, potential side effects, and interactions. ○ Guidelines for herbal use across various populations (children, elderly, pregnant individuals). ○ When to seek professional guidance and contraindications to consider	
4.2	**Ethics and Sustainability in Herbal Technology:** ○ Ethical considerations in sourcing and using medicinal plants. ○ Importance of sustainable harvesting and fair trade practices. ○ Role of herbalists and herbal technology in supporting environmental health.	

Reference Books:

- HOLISTIC HEALTH AND FITNESS: A Medical Approach to Wellness by Dr Ballarapu Girija Kumari
- THE HOLISTIC WELLNESS BOOK BUNDLE A Guide to Reiki, Chakra Healing, Ayurveda, The Vagus nerve and Meditation 5 in 1 Holistic health book Bundle by Monika Daniel
- Thrive A Holistic Guide to Mental Health, Self-Help, Keto Diet, Fitness, and Wellness by DR. TAMIL CHATRIYAN
- **Health and Wellness text book by Elbin Raju (Author), Abhiraj T.K**
- **Health and Wellness by Pranab Paul**
- Gupta AK & Sharma M. 2008. *Reviews on Indian Medicinal Plants.* ICMR.
- Gupta AK, Tandon N & Sharma M. 2008. *Quality Standards of Indian Medicinal Plants.* ICMR.

PGDHT-1002: Ancient Indian Herbal Drug Technologies

Semester: I	
Course (subject) Code	PGDHT-1002
Subject Title	Ancient Indian Herbal Drug Technologies
Course Type	Core Compulsory
Teaching Time	15×4=60 Hours
Subject Outcome	At the end of the course the students will • Understand the foundational principles of ancient Indian herbal medicine and Ayurveda. • Identify key Indian medicinal plants, their therapeutic uses, and preparation methods. • Learn traditional techniques for herbal drug formulation and ensure quality control. • Explore modern applications, ethical practices, and the global relevance of Indian herbal technologies.

Course Content

Unit No.	Content	Teaching Hours
Unit-1	**Foundations of Ancient Indian Herbal Medicine**	**15 Hr.**
1.1	**Introduction to Indian Herbal Traditions:** o Historical evolution and significance of herbal medicine in Indian culture. o Concept of "Rasayana" (rejuvenation) and its role in Indian herbal therapy	
1.2	**Basic Principles of Ayurveda and Holistic Health:** o The five elements (Pancha Mahabhuta) and the three doshas (Vata, Pitta, Kapha). o Concept of balance in Ayurveda and its relation to physical and mental health. o Classification of herbs based on their properties, potency, and effects on doshas.	
Unit-2	**Indian Medicinal Plants and Their Applications**	**15 Hr.**
2.1	**Key Medicinal Plants in Ancient Indian Herbal Medicine:** o Introduction to commonly used Ayurvedic herbs: Ashwagandha, Tulsi, Turmeric, Neem, Amla, and Brahmi. o Botanical description, active compounds, and health benefits of each plant.	

	○ Preparation methods and specific applications for various health concerns.	
2.2	**Herbs for Specific Therapeutic Applications:** ○ Ayurvedic herbs for immunity, digestion, stress management, skin health, and detoxification. ○ Role of adaptogens, rejuvenating herbs (Rasayana), and nervines in promoting wellness. ○ Dosage, safety considerations, and potential interactions with other herbs and medications.	
Unit-3	**Traditional Techniques in Herbal Drug Preparation**	**15 Hr.**
3.1	**Preparation and Formulation of Ancient Indian Herbal Remedies:** ○ Evaluation of drugs, Patenting and Regulatory requirement of natural products, Regulatory Issues ○ Classical techniques: decoctions (Kashayam), powders (Churna), herbal oils, and ghee (Ghrita). ○ Preparing Ayurvedic formulations such as Asavas (fermented preparations), Arishtas, and Lehya (herbal jams). ○ Understanding herbal combinations (Yogas) and the concept of herbal synergy	
3.2	**Quality Control and Standardization in Ancient Herbal Preparations:** ○ Traditional quality control measures and ensuring purity of herbs. ○ Importance of seasonal and environmental factors in the collection and preservation of herbs. ○ Modern approaches to standardizing ancient preparations to maintain efficacy and safety.	
Unit-4	**Applications and Integration of Ancient Indian Herbal Drug Technologies in Modern Holistic Health**	**15 Hr.**
4.1	**Contemporary Uses of Ancient Indian Herbal Medicines:** ○ Relevance of Ayurvedic and Indian herbal drugs in modern health issues: stress, lifestyle diseases, immunity, and chronic conditions. ○ Incorporating Indian herbs into modern health practices, diet, and lifestyle.	

4.2	**Sustainability, Ethics, and the Future of Indian Herbal Technology:** o General introduction to Herbal Industry, Schedule Good Manufacturing Practice of Indian system of medicine o Ethical sourcing, cultivation, and sustainable use of Indian medicinal plants. o Integrating traditional knowledge with modern scientific approaches for research and development. o Globalization of Indian herbal medicine: challenges, opportunities, and cultural considerations.

Reference Books:

- **"Principles of Pharmacognosy"** by Tyler and Foster
- **"Introduction to Herbal Medicine"** by R. G. T. Hayward

- **World Health Organization (WHO) Guidelines on Herbal Medicine**
- The Journey Towards Holistic Living: A new age reference book for Holistic Lifestyle, Personal Transformation, Well Being & Energy Healing. An Alternative Route, to Mind-Body Evolution that Says 'NO' to Medicine. by Aritri Sarkar
- The Complete Book Of Ayurvedic Home Remedies: A comprehensive guide to the ancient healing of India by Lad, Vasant
- The Herbal Healing Handbook: How to Use Plants, Essential Oils and Aromatherapy as Natural Remedies (Herbal Remedies) 2020 by Cerridwen Greenleaf

PGDHT-1003: Spiritual and Emotional Health in Holistic Practices

Semester: I	
Course (subject) Code	PGDHT-1003
Subject Title	Spiritual and Emotional Health in Holistic Practices
Course Type	Core Compulsory
Teaching Time	15×4=60 Hours
Subject Outcome	At the end of the course, the students will get knowledge of • Understand the concepts of spiritual and emotional health within holistic wellness practices. • Explore the role of self-awareness, purpose, and emotional regulation in overall well-being. • Apply mind-body techniques such as meditation, mindfulness, and visualization for inner balance. • Practice breathwork to support emotional resilience and spiritual growth,

Course Content

Unit No.	Content	Teaching Hours
Unit-1	**: Foundations of Spiritual and Emotional Health in Holistic Practices**	**15 Hr.**
1.1	**Understanding Spiritual Health:** o Definition and components of spiritual health. o The relationship between spiritual well-being and overall health. o Exploring concepts such as self-awareness, purpose, and connection	
1.2	**Emotional Health and Its Role in Holistic Health:** o Definitions and importance of emotional health. o The role of emotions in physical and mental well-being. o Impact of unresolved emotions on health and the holistic approach to healing emotional wounds.	
Unit-2	**Mind-Body Techniques for Emotional Balance and Spiritual Growth**	**15 Hr.**
2.1	**Meditation, Mindfulness, and Visualization:** o Introduction to meditation and mindfulness practices for emotional and spiritual health. o Visualization techniques for relaxation, focus, and goal-setting. o Understanding the connection between mindfulness and	

	emotional resilience.	
2.2	**Breathwork and Other Mind-Body Techniques:** o Breathing exercises (Pranayama) for emotional regulation and calming the mind.	
Unit-3	**Herbal and Natural Supports for Spiritual and Emotional Health**	
3.1	**Herbs for Emotional Support and Stress Management:** o Introduction to adaptogens and nervines: Ashwagandha, Tulsi, Lavender, Chamomile, and others. o Using herbal teas, tinctures, and aromatherapy for managing stress and anxiety. o Dosage, safety, and contraindications for emotional health-supporting herbs.	
3.2	**Herbs and Essential Oils for Enhancing Spiritual Practices:** o Introduction to herbs and essential oils that support spiritual practices, e.g., Sage, Frankincense, Sandalwood. o Role of these plants in grounding, focus, and meditation. o Practical use of incense, smudging, and essential oils in creating a spiritual space.	
Unit-4	**Cosmatology**	**15 Hr.**
4.1	Natural therapies: Shirodhara, Nasytherapy, Acupressure, Acupuncture, Detox Technique, Janubasti	
4.2	**Creating a Personal Holistic Routine:** o Developing daily routines that integrate spiritual and emotional health practices. o Incorporating meditation, journaling, nature connection, and herbal supports. o Building a supportive lifestyle with sleep hygiene, nutrition, and mindful practices	

Reference Books:

- Thrive A Holistic Guide to Mental Health, Self-Help, Keto Diet, Fitness, and Wellness by DR. TAMIL CHATRIYAN
- **Health and Wellness text book by Elbin Raju (Author), Abhiraj T.K**
- **Health and Wellness by Pranab Paul**
- **The Complete Handbook of Nature Cure (5th Edition) Dr. H. K. Bakhru**
- **Textbook on Naturopathy and Yoga Treatment (All India Naturopathy & Yoga Education Council) by Dr. Dinesh Kumar Shukla**
- **Secrets of Naturopathy & Yoga Paperback – 15 April 2013 by Dr. Brij Bhushan Goyal**
- The Complete Book Of Ayurvedic Home Remedies: A comprehensive guide to the ancient healing of India by Lad, Vasant
- The Herbal Healing Handbook: How to Use Plants, Essential Oils and Aromatherapy as Natural Remedies (Herbal Remedies) 2020 by Cerridwen Greenleaf

PGDHT-1004: Human Physiology & Human Disorders

Semester: I	
Course (subject) Code	PGDHT-1004
Subject Title	**Human Physiology & Human Disorders**
Course Type	Core Elective
Teaching Time	15×4=60 Hours
Subject Outcome	At the end of the course, the students will get knowledge of • Understand the basic structure and function of major human organ systems. • Explain key physiological processes like circulation, respiration, digestion, and neural control. • Identify and describe common disorders related to organ systems and hormonal imbalance. • Gain awareness of genetic and autoimmune diseases and their physiological impact.

Course Content:

Unit No.	**Content**	**Teaching Hours**
Unit-1	**Unit 1: Basics of Human Physiology** • Overview of Major Organ Systems: ○ Circulatory (Heart & Blood) ○ Respiratory (Lungs & Breathing) ○ Digestive (Stomach & Nutrition) ○ Nervous (Brain & Nerves) ○ Endocrine (Hormones & Glands)	**15 Hr.**
1.1	Introduction to Human Physiology: Structure and Function	
1.2	Homeostasis: Body Balance and Control Mechanisms	
1.3	Overview of Major Organ Systems: ○ Circulatory (Heart & Blood) ○ Respiratory (Lungs & Breathing) ○ Digestive (Stomach & Nutrition) ○ Nervous (Brain & Nerves) ○ Endocrine (Hormones & Glands)	
Unit-2	**Unit 2: Important Body Functions & Regulation**	**15 Hr.**
2.1	Blood Circulation & Oxygen Transport	

	○ How the heart works ○ Blood pressure & its regulation	
2.2	Breathing & Gas Exchange ○ Mechanism of respiration ○ Common lung problems	
2.3	Digestion & Energy Production ○ Role of liver, stomach, and intestines ○ Metabolism and nutrition basics	
2.4	Brain & Nerve Functions ○ How the brain controls body functions ○ Reflex actions & sensory processing	
Unit-3	**Unit 3: Common Human Disorders**	**15 Hr.**
3.1	• Heart & Blood Disorders ○ Hypertension, Heart Attack, Stroke	
3.2	• Lung & Breathing Problems ○ Asthma, Pneumonia, COPD	
3.3	• Digestive Issues ○ Acid reflux, Liver Cirrhosis, Kidney Failure	
3.4	• Brain & Nervous System Disorders ○ Alzheimer's, Parkinson's, Epilepsy	
3.5	• Hormonal Disorders ○ Diabetes, Thyroid Problems	
Unit-4	**Genetic & Autoimmune Diseases**	**15 Hr.**
4.1	• Genetic Disorders (Inherited Conditions) ○ Down Syndrome, Sickle Cell Anemia	
4.2	• Autoimmune Diseases (Body Attacking Itself) ○ Rheumatoid Arthritis, Lupus	
4.3	• Mental Health Disorders ○ Depression, Anxiety, Schizophrenia	
4.4	• New Research & Treatments ○ Stem Cell Therapy, Gene Therapy	

Reference Book:

- Anatomy and Physiology for (DMLT, DRT, DOTT & Various Other Diploma & Degree Paramedical and Nursing Course Students with Practice Manual of Human Anatomy & Physiology By Teena Kumari
- Anatomy And Physiology For Nursing by A K Jain

PGDHT-1005: PRACTICALS BASED ON PAPER PGDHT- 1001, 1002,1003 &1004

Semester: I	
Course (subject) Code	PGDHT-1005
Subject Title	PRACTICALS BASED ON PAPER PGDHT- 1001, 1002,1003 &1004
Subject Outcome	At the end of the course, the students will able to • Demonstrate practical skills in yoga, meditation, and wellness techniques for holistic health. • Apply biochemical and physiological tests to assess health parameters and herbal efficacy. • Formulate and evaluate herbal products and functional foods for therapeutic applications. • Integrate traditional knowledge with scientific methods for personalized wellness planning.

Course Content

1. Perform and master foundational yoga postures (Tadasana, Trikonasana, Bhujangasana, Sirsasana, Mayurasana, and Chakrasana etc.).
2. Learn and practice breathing exercises like Anulom Vilom, Bhastrika, and Kapalbhati.
3. Practice hand gestures (Mudras) and energy locks (Bandhas) for enhanced panic flow.
4. Apply yoga techniques for managing diabetes, hypertension, and back pain.
5. To measure alpha and beta brainwaves before and after mediation by EEG.
6. The objective is to assess the telomere size of chromosomes among individuals from various age groups.
7. Identify alkaloids, flavonoids, and tannins in herbal extracts. By biochemical methods.
8. Measure the antioxidant properties of some selected medicinal plants by DPPH.
9. Measure and analyze BP before and after physical activity.
10. Heart Rate Variability (HRV) Study – Observe changes in heart rate during rest and activity.
11. Neurological Reflex Testing – Perform and interpret simple neurological reflex tests.
12. Herbal Soap Making – Formulate and test a herbal skincare soap.
13. Lip Balm and Herbal Cosmetics Preparation – Develop and package natural cosmetics.
14. Herbal Hair Oil Formulation – Create hair oil using Ayurvedic herbs.
15. Herbal Deodorant and Perfume Making – Experiment with natural fragrances.
16. Herbal Shampoo and Conditioner Formulation – Develop herbal hair care products.
17. Nutritional Analysis of Functional Foods – Test and compare nutrient content in superfoods.
18. Preparation of Probiotic Beverages – Make kombucha, kefir, or fermented herbal drinks.
19. Herbal Smoothie and Detox Drink Preparation – Create functional smoothies for different health benefits.
20. Sprouted Grains and Fermentation – Study the effects of fermentation on nutrient absorption.
21. Designing Personalized Meal Plans – Use nutrigenomic data for diet customization.
22. Comparison of Cooking Methods on Nutrient Retention – Test raw vs. cooked superfoods.

23. Herbal Tea Blending for Health Conditions – Develop blends for digestion, stress, and immunity.
24. Functional Energy Bar Preparation – Make nutrient-dense snack bars with herbs.
25. Low-GI Meal Planning for Diabetics – Develop and test diabetic-friendly meals

References Books:

- "Light on Yoga" by B.K.S. Iyengar
- "The Heart of Yoga: Developing a Personal Practice" by T.K.V. Desikachar
- "Mudras: Yoga in Your Hands" by Gertrude Hirschi
- "Yoga Bandhas: The Energy Locks" by Mark Stephens
- "Yoga for Wellness: Healing with Yoga" by Gary Kraftsow
- "Phytochemical Methods: A Guide to Modern Techniques of Plant Analysis" by J.B. Harborne
- "Methods in Plant Biochemistry" by M. R. Saxena
- "The Herbal Apothecary: 100 Medicinal Herbs and How to Use Them" by JJ Pursell
- "The Complete Book of Essential Oils and Aromatherapy" by Valerie Ann Worwood
- "Fermented Foods, Part II: The Health Benefits of Fermented Foods and Beverages" by Robert E. Fuller
- "The Low GI Diet: The Easy and Effective Guide to Eating for a Healthy Lifestyle" by Dr. Jennie Brand-Miller
- "Herbal Medicine: Biomolecular and Clinical Aspects" by Iqbal Ahmad and Mohammad Aqil

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT

Post Graduate Diploma in Herbal Technology and Integrated Wellness

(PGDHT) Course Structure of Semester 2

Semester-2							
Course Code	**Title of The Course**	**Course Credit**	**Hrs. Per Week**	**Internal Exam Marks**	**External Exam Marks**	**Total Marks**	**Duration of External Exam (Hr.)**
Core Course							
PGDHT-2001	Functional Food and Nutrigenomic	04	04	30	70	100	03
Elective Course (Any One)							
PGDHT-2002	Nutraceuticals	04	04	30	70	100	03
Practical Course							
PGDHT-2003	Dissertation/Training/Internship	12	-	50	150	200	-
Skilled Based Elective Course (Any One)							
PGDHT-2004	MOOC/ Swayam	02	02	20	30	50	02
Total		22		110	240	450	

PGDHT-2001: Functional Food and Nutrigenomics

Semester: II	
Course (subject) Code	**PGDHT 2001**
Subject Title	**Functional Food and Nutrigenomics**
Course Type	Core Compulsory
Teaching Time	15×4=60 Hours
Subject Outcome	At the end of the course, the students will get knowledge of • Understand the concepts of functional foods and nutrigenomics, including their role in gene-diet interactions and gut health. • Identify and evaluate bioactive compounds, herbal remedies, and traditional diets for disease prevention and wellness. • Apply knowledge of functional food preparation, food synergy, and personalized meal planning for health benefits. • Analyze future trends, ethical concerns, and regulatory frameworks shaping the nutraceutical and personalized nutrition industry.

Course Content:

Unit No.	Content	Teaching Hours
Unit-1	**: Introduction to Functional Foods and Nutrigenomics**	**15 Hr.**
1.1	Definition, scope, and importance of functional foods in modern nutrition.	
1.2	Principles of nutrigenomics: How diet influences gene expression and health.	
1.3	Gene-diet interactions and their impact on metabolism and disease prevention.	
1.4	Role of gut microbiota in nutrigenomics and its connection to functional foods.	
1.5	Traditional vs. modern functional foods: Fermented foods, herbs, and superfoods	
Unit-2	**Bioactive Compounds, Diet Remedies & Their Health Benefits**	**15 Hr.**
2.1	Phytochemicals: Flavonoids, polyphenols, carotenoids, and their role in chronic disease prevention.	
2.2	Dietary fiber, probiotics, and prebiotics for gut health and immune function	
2.3	Omega-3 fatty acids and antioxidants for cardiovascular and brain health.	
2.4	Adaptogens & herbal remedies: Ashwagandha, turmeric, ginger, and their healing properties	
2.5	Diet-based remedies: Ayurvedic and traditional healing foods for common ailments (diabetes, inflammation, digestive issues).	
Unit-3	**Functional Food Recipes and Meal Planning**	**15 Hr.**
3.1	Anti-inflammatory smoothies and herbal teas	

3.2	Functional soups for digestion and immunity	
3.3	Protein-rich plant-based meals for muscle and brain health.	
3.4	Fermented food recipes (kombucha, kefir, sauerkraut, miso).	
3.5	Gluten-free, low-carb, and keto-friendly functional food recipes	
3.6	Meal planning for personalized nutrition based on genetic predisposition.	
3.7	Food synergy and bioavailability: Pairing foods for maximum nutrient absorption.	
Unit-4	**Future of Nutrigenomics, Ethics, and Regulations**	**15 Hr.**
4.1	Personalized nutrition: How genetic testing is shaping diet recommendations.	
4.2	Role of AI and technology in functional food development.	
4.3	Regulatory aspects: FSSAI, FDA, EFSA guidelines on functional foods and nutraceuticals	
4.4	Ethical considerations in nutrigenomics and personalized diets.	
4.5	Case studies: Successful functional food innovations and their market trend	

Reference Books:

- Herbal Bioinformatics: Challenges and Applications – P. Nagendra Rao & B. N. Vishwanath
- APPLIED NUTRITION, DIETETICS AND BIOCHEMISTRY FOR BASIC BSC NURSING By Clement
- Using nutrigenomics within personalized nutrition: A Practitioner's Guide (Personalized Nutrition and Lifestyle Medicine for Healthcare Practitioners) by Anne Pemberton (Author), Lorraine Nicolle
- Nutrigenomics and Nutrigenetics in Functional Foods and Personalized Nutrition Kindle Edition by DR. Mayeer Fenner
- Unlocking the Secrets of Food: Omics, the Microbiome, and the Future of Nutritional Wellness by Daniel Diaz
- Eating for the Future: The Science of Nutrigenomics and How It Can Help You Live a Healthier Life: The Cutting-Edge Science of Nutrigenomics: How It Can Transform Your Health and Well-being by Mary Richardson
- Journal Articles and Research Papers on specific medicinal plants and their uses

PGDMHT-2002: Nutraceuticals

Semester: II	
Course (subject) Code	**PGDHT-2002**
Subject Title	**Nutraceuticals**
Course Type	Elective
Teaching Time	15×4=60 Hours
Subject Outcome	The training in this subject enables the students • Understand the concept, types, and importance of nutraceuticals in health and wellness. • Identify and explain key bioactive compounds from natural sources and their functions. • Evaluate the role of nutraceuticals in managing lifestyle and chronic diseases. • Gain knowledge of safety, regulations, and market trends in the nutraceutical industry

Course Content:

Unit No.	Content	Teaching Hours
Unit-1	Introduction to Nutraceuticals (3 weeks)	15 Hr.
1.1	Definition and scope of nutraceuticals and functional foods.	
1.2	Historical background and global scenario.	
1.3	Differences between pharmaceuticals, nutraceuticals, and dietary supplements.	
1.4	Role in disease prevention and health promotion.	
Unit-2	Classification and Sources	15 Hr.
2.1	Classification: dietary supplements, functional foods, fortified foods, herbal nutraceuticals.	
2.2	Sources: plant-based, animal-based, microbial sources.	
2.3	Examples: phytochemicals (polyphenols, flavonoids, carotenoids, saponins, alkaloids), prebiotics, probiotics, omega-3 fatty acids, dietary fiber.	
Unit-3	Bioactive Compounds in Herbal Nutraceuticals	15 Hr.
3.1	Major bioactive phytoconstituents and their functions.	
3.2	Extraction and characterization techniques (brief overview).	
3.3	Case studies: turmeric (curcumin), garlic (allicin), green tea (catechins), moringa, amla, ashwagandha.	
3.4	Synergistic effects of herbal combinations.	
Unit-4	Regulatory, Safety and Market Aspect	15 Hr.
4.1	FSSAI and global regulatory frameworks (FDA, EFSA, etc.)	
4.2	Safety concerns, toxicity, and quality control.	
4.3	Market potential, recent trends, and challenges in the nutraceutical industry	
4.4	Case studies on commercial herbal nutraceuticals	

Reference Books:

- Wildman, R. E. (2006). *Handbook of Nutraceuticals and Functional Foods*. CRC Press.
- Gupta, R. C. (2016). *Nutraceuticals: Efficacy, Safety and Toxicity*. Academic Press.
- Gibson, G. R. & Williams, C. M. (2000). *Functional Foods: Concept to Product*. Woodhead Publishing.
- Indian Council of Medical Research (ICMR) and FSSAI guidelines.

PGDHT-2003: Dissertation

Semester: I	
Course (subject) Code	PGDHT-2003
Subject Title	Dissertation/Training/Internship
Subject Outcome	At the end of the course, the students will able to • Conduct independent research in the field of **Herbal Technology** and **Integrated Wellness**, demonstrating critical thinking and innovative problem-solving skills. • Analyze and evaluate relevant scientific literature to develop a comprehensive understanding of the chosen dissertation topic. • Apply appropriate research methodologies, data collection, and analysis techniques to address practical challenges in herbal technology or wellness. • Demonstrate the ability to write and present a well-structured dissertation, adhering to academic and ethical standards. • Effectively communicate research findings and contribute to the advancement of knowledge in **herbal science**, **nutraceuticals**, and **holistic health** practices.

Terms and Conditions for Dissertation (Credit 12)

1. **Eligibility for Dissertation**
   - The dissertation is available to students who have successfully completed all core and elective courses in the **Herbal Technology and Integrated Wellness** program.
2. **Research Proposal Submission**
   - Students must submit a **research proposal** outlining the topic, objectives, methodology, and expected outcomes of the dissertation.
   - The proposal must be approved by a faculty supervisor from the department before starting the dissertation work.
3. **Supervision and Guidance**
   - Each student will be assigned a faculty supervisor based on their area of research interest.
   - Regular meetings with the supervisor are mandatory for project progress monitoring and guidance.
4. **Dissertation Scope and Topics**
   - The dissertation must be centered on **Herbal Technology**, **Integrated Wellness**, or related fields such as **Nutraceuticals**, **Herbal Remedies**, **Phytochemistry**, or **Holistic Health**.
   - Topics should be innovative, relevant to current trends, and must contribute to scientific knowledge or practical application in the field.
5. **Research and Data Collection**
   - Students are required to conduct original research, including data collection, experimentation, and analysis, in accordance with ethical research guidelines.
   - Ethical approval (if required) must be obtained before starting any fieldwork or experimentation.
6. **Dissertation Writing and Formatting**
   - **Title Page**: Include title, student name, course, supervisor name, and submission date.
   - **Abstract**: 250-300 words summarizing research objectives, methods, findings, and conclusions.
   - **Acknowledgements**: Thank supervisors, participants, and any contributors.
   - **Table of Contents**: List sections and page numbers.
   - **Introduction**: Background, research problem, objectives, scope, and study significance.

- **Literature Review**: Review relevant studies, theories, and identify research gaps.
- **Research Methodology**: Describe research design, data collection, analysis methods, and ethical considerations.
- **Results and Discussion**: Present and analyze findings with comparisons to existing research.
- **Conclusion**: Summarize key findings, implications, and suggestions for future research.
- **References**: List all cited sources in a consistent citation style (e.g., APA, MLA).
- **Appendices**: Include supplementary materials like questionnaires, raw data, etc.
- **Formatting:**

Font: Times New Roman, 12 pt
Line Spacing: 1.5
Margins: 1 inch

7. **Submission and Evaluation**
   - The dissertation must be submitted by the **final deadline** set by the department. Late submissions will incur penalties, as outlined in the program guidelines.
   - The dissertation will be evaluated by a **panel of faculty members**, including the supervisor, based on the quality of research, clarity of writing, originality, and relevance to the field of herbal technology and wellness.
8. **Oral Presentation and Viva Voce**
   - Students must present their dissertation findings in an **oral presentation** (viva voce) before a panel of examiners.
   - The viva will assess the student's understanding of the research, ability to discuss findings, and defend the conclusions drawn.
9. **Completion and Award of Credit**
   - The dissertation will carry **12 credits** upon successful submission, evaluation, and viva voce.
   - Upon successful completion of the dissertation and associated requirements, the student will be awarded the respective degree with credits for the dissertation module.

Terms and Conditions for Training/Internship (Credit 12)

As part of the Postgraduate Diploma in Herbal Technology and Integrated Wellness, students are required to undergo a 60-day practical training in a relevant Government, Semi-Government, or Private organization such as herbal industries, wellness centers, or research laboratories. The purpose of this training is to provide hands-on experience in areas like herbal product development, quality control, and integrated wellness practices, while also helping students become familiar with clinical or industrial environments. During the training, students must maintain a daily logbook detailing the work performed and observations made. They are also required to prepare a concise training report that includes information about the host organization and a summary of their learning experience. A training certificate issued by the authorized official of the training institution must be submitted along with the report. Faculty members will guide students throughout the process, particularly in compiling the report. The final evaluation will be based on the authenticity and relevance of the training certificate, the quality of the training report, and the completeness of the logbook.