

**Master of Science  
in  
Yoga and Cognitive Science  
[MSc YCS]**

**PROPOSED SYLLABUS**



**Amrita Mind Brain Center  
Interdisciplinary Sciences  
Amritapuri campus,  
Kollam-690 525,  
Kerala.**

**(YCS)**

**STUDY (CREDIT-BASED SEMESTER SYSTEM)**

SEMESTER I									
Sl. No.	Course No.	Subject	Teaching hrs/Week		Marks				Total
			L-T-P	Credits	Theory		Practical		
					Internal	External	Internal	External	
1	YCS401	Basics of Yogic Science	4-0-0	4	50	50	----	----	100
2	YCS402	Introduction to Sanskrit	3-0-0	3	50	50	----	----	100
3	YCS403	Human Anatomy and Physiology	4-0-0	4	50	50	----	----	100
4	YCS404	Introduction to Cognitive Science and Neuroscience	3-0-0	3	50	50	----	----	100
5	YCS405	Cell and Molecular Biology	3-0-0	3	50	50	----	----	100
6	YCS406	Basics of Computer Programming	4-0-0	4	50	50	----	----	100
7	YCS407	Ashtanga Yoga-Practical Skills	0-0-3	1	-----	-----	40	60	100
8	YCS408	Basics of Computer Programming-Laboratory	0-0-3	1	-----	-----	40	60	100
9	22ADM501	Glimpses of Indian Culture	1-0-0	1	50	50	----	----	100
10	SSD401	Soft Skills	2-0-0	2	50	50	----	----	100
		Total Credits		26	400	400	80	120	1000

SEMESTER II									
Sl.No.	Course No.	Subject	Teaching hrs/Week		Marks				Total Marks
			L-T-P	Credits	Theory		Practical		
					Internal	External	Internal	External	
1	YCS411	Patanjali's Yoga sutra	3-0-0	3	50	50	----	----	100
2	YCS412	Introduction to Cognitive Psychology	3-0-0	3	50	50	----	----	100
3	YCS413	Computational Neuroscience	3-0-0	3	50	50	----	----	100
4	YCS414	Research Methodology	3-0-0	3	50	50	----	----	100
5	YCS415	Yoga forms	3-0-0	3					
6	SSD402	Soft Skills II	1-0-0	1	50	50	----	----	100

7	YCS417	Statistics and Data analysis	3-0-0	3	50	50	----	----	100	
8	YCS418	Srimad Bhagavad Gita and Samkhaya Karika	4-0-0	4	50	50	----	----	100	
9	YCS419	Yoga practices	0-0-3	1	----	----	40	60	100	
10	YCS420	Statistics and Data analysis-laboratory	0-0-3	1	----	----	40	60	100	
Total					25	350	350	80	120	900
Credits										

SEMESTER III									
Sl. No.	Course No.	Subject	Teaching hrs/Week		Marks				Total Marks
			L-T-P	Credits	Theory		Practical		
					Internal	External	Internal	External	
1	YCS501	Mind, Health, Diet and Yoga	4-0-0	4	50	50	----	----	100
2	YCS502	Data Acquisition	3-0-0	3	50	50	----	----	100
3	YCS503	Yogic Counselling	2-0-0	2	50	50	----	----	100
4		Elective I	3-0-0	3	50	50	----	----	100
5		Elective II	3-0-0	3	50	50	----	----	101
7	YCS504	Yoga Therapy Techniques	0-0-3	1	----	----	40	60	100
8	YCS505	Neurophysiology Laboratory	0-0-3	1	----	----	40	60	100
		Total Credits		17	150	350	230	70	800

SEMESTER IV									
Sl. No.	Course No.	Subject	Teaching hrs/Week		Marks				Total Marks
			L-T-P	Credits	Theory		Practical		
					Internal	External	Internal	External	
1	YCS 506	Dissertation	0-0-10	10	----	----	----	100	100
2	YCS 507	Advanced Yoga Techniques	0-0-6	6	----	----	----	100	100
		Total Credits		16			-	200	200

## Semester I

**YCS401      Basics of Yogic Science      LTP:4-0-0      Credits: 4**

### Learning Objectives

To introduce yoga, its history, philosophy, various aspects of yoga practice, and different forms which will benefit physical, mental, and emotional health.

### Syllabus

#### **Unit I: Introduction:**

Origin, history, development, and philosophical foundation of yoga. Relevance, scope, and misconceptions of Yoga in the modern age. The eight limbs of yoga.

#### **Unit II: Do's and Don'ts of Yoga Practices along with the different types**

Diet, Place, Timing, and dressing philosophy for Yoga; Disciplines obstacles and failures in Yogic Practices; Different types of yoga and their unique approaches- Raja yoga, Hatha yoga, Mantra yoga, Laya yoga, Karma yoga, Gyana yoga, Bhakti yoga

#### **Unit III: Life sketch & Contribution of Eminent Yogis**

Maharshi Patanjali, Gorakshanath, and Swatmaram Suri, Swami Vivekananda, Shankaracharya, Swamy Satyanand Sarawathy, Ramana Maharshi, Sree Narayana Guru, Swamy Kuvlayanand, Swamy Shivanand, Swamy Tapovan Maharaj, Sri Mata Amritanandamayi Devi

#### **Unit IV: Institutes of Yoga**

Major Organisations: Mata Amritanandamayi Math, Swami Kuvalyananda (Kevalyadham, Lonavala), Swami Satyanand (Bihar School of yoga), Swami Shivananda (Divine Life Society), Swami Vivekananda, Yoga Anumandhan Samsthan, Bangalore, (SVYASA), Morarji Desai National Institute of Yoga, Delhi (MDNIY) and Central Council for Research in Yoga & Naturopathy, Delhi, (CCRYN)

### References:

1. "Bhartiya Yoga Parampara ke Vividh Ayam (Diverse Dimensions of Indian Yoga Tradition)" by Rajkumari Pandey, 2018, Radha publication.
2. "Swami Vivekananda's concept of jnana yoga, raja yoga, karma yoga and bhakti yoga" by Yogeshwar G. Anc Sci Life. 1994 Jan;13(3-4):261-5.
3. "Yoga Origin, History and Development in India" by Chandan Singh, Dr. T.O. Reddy Indian Journal of Movement Education and Exercises Sciences (IJMEES), Bi-annual Refereed Journal & A UGC Approved & Notified Journal Vol. VIII No. 1 Jan-June 2018, Online ISSN 2249-6246, Print ISSN 2249-5010
4. "Yoga Sutra" by Patanjali. (c. 2nd century BCE - 4th century CE).

## **Course Outcomes**

CO1: Explain the history and philosophy of yoga

CO2: Understand the benefits of yoga for physical, mental, and emotional health

CO3: Identify the eminent yogis and yogic institutes

CO4: Categorise the different types of yogic practices

## **YCS402 Introduction to Sanskrit LTP:3-0-0 Credits: 3**

### **Learning Objectives**

The course covers the basics of Sanskrit grammar, vocabulary, and syntax, with a focus on developing reading, writing, and speaking skills. The subject provides an overview of learning Sanskrit and its relationship between Indian literature, philosophy, and culture. Also the course focuses on the application level of Sanskrit language and how it enhances the cognitive abilities such as improved memory, concentration, and critical thinking skills.

### **Syllabus**

#### **UNIT 1- Learning of Sanskrit Language**

Sanskrit Language-Origin, History and facts, Principle categories of Sanskrit Languages- Vedic Sanskrit and Classical Sanskrit, Concepts of Sanskrit Languages- Devanagari script – Vowels and consonants, pronunciation, classification of consonants, conjunct consonants, words – nouns and verbs, cases – introduction, numbers, Pronouns, communicating time in Sanskrit.

#### **UNIT 2- Sanskrit Language and Vocabulary**

Verbs- Singular, Dual and plural – First person, Second person, Third person. Tenses – Past, Present and Future – Atmanepadi and Parasmaipadi – karthariprayoga

#### **UNIT 3-Sanskrit Language for Communication**

Words for communication, Conversational Sanskrit-understanding Sanskrit with LSRW (Listening, Speaking, Reading & Writing), Sanskrit and English-Sanskrit Connections to English Words, Translation of simple sentences from Sanskrit to English and vice versa.

#### **UNIT 4- Sanskrit literary tradition-Epics and Plays**

Slokas, Moral stories, Subhashithas, Riddles. Learning of selected slokas from Valmiki Ramayana, Kalidasa's works and Bhagavad Gita, Ramayana – chapter VIII – verse 5, Mahabharata – chapter 174, verse -16, Bhagavad Gita – chapter – IV verse 8, Kalidasa's Sakuntalam Act IV – verse 4

#### **UNIT 5- Sanskrit Language and cognition**

The relationship between Sanskrit language, culture and cognitive abilities, the history and evolution of Sanskrit as a language for cognitive enhancement, The use of Sanskrit in yoga practices and its cognitive effects, research on Sanskrit language and cognition.

### **References:**

1. "The Sanskrit Language: An Introductory Grammar and Reader" by Walter Harding Maurer.
2. "Sanskrit: A Complete Course for Beginners" by Michael Coulson
3. "The Science of Sanskrit Mantras" by Swami Sivananda Radha
4. "Sanskrit and Its Impact on Human Cognitive Development" edited by Ram Lakhan Pandey and Sanjay Kumar Singh.
5. "The Yoga of Sound: Tapping the Hidden Power of Music and Chant" by Russill Paul

### **Course Outcomes**

- CO1: Learn one of the ancient languages, Sanskrit -its basic concepts and grammatical structures.  
CO2: Acquire knowledge in Epics (learning slokas, morals, riddles) using Sanskrit Languages.  
CO3: Evaluate the relationship between Sanskrit language and cognition.  
CO4: Contemporary research based on the application of Sanskrit language for enhancing cognitive abilities like memory, concentration, and critical thinking.

## **YCS403 Human Anatomy and Physiology LTP:4-0-0 Credits: 4**

### **Learning Objectives**

The course provides a comprehensive knowledge of the human body's overall development and structure. The course also describes the anatomy and physiology of the major organs and structures within each system, including their location, structure, and function.

### **Syllabus**

#### **Unit I: Cell, Tissue & Immune system**

Cell Organelles; Tissue: Types, Structure and function; Immunity: Innate immunity, Acquired immunity; Allergy, hypersensitivity and immunodeficiency, Psycho-neuro-immunology; Sense Organs

#### **Unit II: Muscular-skeletal, Respiratory Cardiovascular system**

Anatomy of the Skeleton; Classification of bones-Axial bones and appendicular bones; Types of joint– Synovial joints and Fibrous joint; Structure of synovial joints; Types of Muscles in the body; Mechanism of muscle contraction; Neuromuscular junction

Respiratory system of human; Mechanism of breathing; Transport of respiratory gases; Regulation of respiration; Pulmonary ventilation



This course introduces the interdisciplinary field of cognitive science and neuroscience, which seeks to understand how the mind and brain work in perception, action, and thought, including those supporting memory, motor control, attention, language, vision, and other cognitive and neural functions. It presents fundamental neuroanatomy, behavioural cognition tests, and approaches for drawing conclusions about the neural underpinnings of cognition.

## **Syllabus**

### **Unit I: The Brain**

History of neuroscience; Structure and Function of the Brain; Neuron: structure, types and functions; Classification of nerve fibres; Ion channels and membrane potential; Nerve conduction synaptic transmission

### **Unit II: Nervous system**

Central nervous system; Autonomic Nervous system: sympathetic and parasympathetic; Peripheral Nervous System: spinal and cranial nerves; Basics about special senses: Eye (vision), ear (hearing), and tongue (taste); Perceptual and motor processes, decision-making, learning and memory, attention, language, reward processing, reinforcement learning, sensory inference, and cognitive control; Yoga and Nervous System;

### **Unit III: Introduction to Cognitive Science**

What is consciousness; A brief history of cognitive science; Phenomenal and access consciousness; Neural Basis of Cognition; Methods in Cognitive Science and Neuroscience

## **References**

1. "Principles of neural science" by Kandel, E. R., Schwartz, J. H., Jessell, T. M., Siegelbaum, S. A., Hudspeth, A. J., & Mack, S. (2013) (Fifth edition.). New York, N.Y.: McGraw-Hill Education LLC.
2. "Neuroscience" by Purves, Dale. Sunderland, Mass: Sinauer Associates, Publishers, 2004.
3. "The NEURON" by Nicholas T. Carnevale and Michael L. Hines. 2009. (1st. ed.). Cambridge University Press, USA.
4. "Cognitive neuroscience: The biology of the mind" by Gazzaniga, M. S., Ivry, R. B., & Mangun, G. R. (2014) (4th ed.). W. W. Norton & Company.
5. "Cognitive science: An introduction to the science of the mind" by Bermúdez, José Luis, Cambridge University Press, 2014.

## **Course Outcomes**

CO1: Understand the interdisciplinary nature of cognitive science and neuroscience

CO2: Develop an understanding of the fundamental cognitive processes and their neural basis

CO3: Familiarize with the different methods used to study the brain and cognition

CO4: Develop critical thinking and analytical skills in the context of cognitive science and neuroscience

# **YCS405 Cell and Molecular Biology LTP:3-0-0 Credits: 3**

## **Learning objectives:**

The course involves understanding the concepts of protein sorting, apoptosis, and circadian rhythms. It also includes the communication between different cells by understanding various signaling pathways and their role in Cancer, Cell death, and other pathological conditions in addition to the applications of stem cells. Students will gain in-depth knowledge in the fields of cell biology and stem cell biology.

## **Syllabus**

### **Unit 1**

Overview of cells and their structure; organelle's structure marker and function, Endoplasmic reticulum, Golgi complex, Types of vesicles - transport and their functions, Lysosomes. Nucleus - Internal organization, Nuclear pore complex, Nucleosomes Chromatin. Mitochondrial Genome, Structure and Function – Oxidative Metabolism in the Mitochondrion – The Role of Mitochondria in the formation of ATP – Introduction to DNA, RNA, and protein synthesis; Central Dogma;

### **Unit 2**

Translocation of Protons and the Establishment of a proton-motive force – The Machinery for ATP formation – Peroxisomes. Genome studies of Mitochondria. Chloroplast structure and function – An overview of photosynthetic Metabolism, Cytoskeleton – components of Cytoskeleton, Microtubules, Intermediate filaments – Microfilaments, Protein trafficking, Cellular communication and signaling pathways; Cell- to -Cell Signaling;

### **Unit 3**

Hormones and Receptors, Intracellular signaling in Development and Disease, Transport across Cell Membranes, Protein Sorting: Organelle Biogenesis and Protein secretion, Stem Cell Biology, Cancer, Regulation of Cell Death; Apoptosis, Circadian Rhythms.

### **Unit 4**

Overview of brain plasticity; Mechanisms underlying neuroplasticity; Impact of yoga and meditation on brain plasticity Overview of epigenetics and its role in gene expression; Impact of lifestyle factors on epigenetic changes; Role of epigenetics in aging and disease; Review of current research in the field Potential for incorporating yoga and mindfulness practices into healthcare settings

## **References**

1. “Molecular Cell Biology” by Harvey Lodish, Arnold Berk, Paul Matsudaira, Chris Kaiser, Monty Krieger, Matthew Scott, Lawrence Zipursky and James Darnell. W.H Freeman and Company. 5th Edition
2. “The Cell: A Molecular Approach” by Geoffrey M. Cooper and Robert E. Hausman (7th edition)
3. “Molecular Biology of the Cell” by Bruce Alberts, Alexander Johnson, Julian Lewis, David Morgan, Martin Raff, Keith Roberts, and Peter Walter (6th edition)

## **Course Outcomes**

CO1: Understand the basic principles of cell and molecular biology.

CO2: Connect the cellular communication to signalling pathways and thus diseases

CO3: Relate cellular structures to molecular functions.

CO4: Learn how yoga and meditation affect cellular and molecular mechanisms in the body and brain.

## **YCS406          Basics of Computer          LTP:4-0-0          Credits: 4** **Programming**

### **Learning Objectives**

To introduce programming concepts, scripting concepts in Linux operating system, and concept of Python programming language along with the introduction of modules and Important packages.

### **Syllabus**

#### **Unit 1**

Introduction – Programming languages – Problem-solving Technique, Programming concepts, Flow charts, Compilers, Interpreters, Linux command, Shell script.

#### **Unit 2**

Introduction of Python programming, Introduction to Python IDEs and other programming environments, Fundamentals of data handling, File handling, Flow control, Flow control (loops), Fine tuning of flow control,

#### **Unit 3**

Functional programming, Lambda and map functions, Classes and object in Python, Introduction NumPy, Data manipulation using nd-arrays, Structured data processing using Pandas, Structured data visualization, Regular expressions, Introduction to database management using python, HTTP requests using requests package, Data/Web scraping with Python, Saving and managing scraped Data to Databases using ORM, Managing and Maintaining Code using Version Control Systems

### **References:**

1. "Python for Everybody: Exploring Data in Python 3" by Charles Severance
2. "Learning Python, 5th Edition" by Mark Lutz:
3. "Think Python, 2nd Edition" by Allen B. Downey

### **Course Outcomes**

CO1: Solve complex problems by breaking them into smaller, more manageable parts, thus identifying and fixing errors in their code.

CO2: Understand the basic concepts of programming, such as data types, control structures, functions, and object-oriented programming.

CO3: Use common Python libraries and tools, such as NumPy, Pandas, and Jupyter Notebook, and learn how to use them to solve more complex problems.

CO4: Introduce collaboration tools like Git and GitHub and learn how to work with others on coding projects, including version control and code reviews.

CO5: Create web pages with database connectivity

## **YCS407 Ashtanga Yoga- Practical LTP:0-0-3 Credits: 1**

### **Learning Objectives**

To teach the sequence of yoga coordinated with breath so as to integrate yoga into their daily lives by cultivating mindfulness and presence through guided meditation and relaxation techniques.

### **Syllabus**

#### **Unit 1**

Centering; Warm-up; Sun Salutations; Standing Poses (Garudasana, Natarajasana, Vatayanasana, Murdhasana, Ekapadangusthasana, Chackrasana, Sarvangpusthi);

#### **Unit 2**

Seated Poses (Ardhamatesendryasana, Akarnadhanurasana, Purna-Ustrasana, Purnmatseyandra, Rajkapot, Mayurasana, Bakasana, Sirsasana, Uttankoormasana, Kukkutasana, Yogamudrasana);

#### **Unit 3**

Backbends, Twists, Inversions, Supine Asana (Karanpeedasana, Sarvangasana, Setubandhasarvangasana , Markatasana), Prone Asana (Bhungasana, Kapotasana)

### **References:**

1. B. K. S. Iyengar: Light on Yoga, London, 2014.

### **Course Outcomes**

CO1: To get a general understanding of Yoga practice

CO2: To analyze the interconnectedness between the theory and practice of Yoga

## **YCS408 Basics of Computer Programming-Laboratory LTP:0-0-3 Credits: 1**

### **Learning Objectives**

To introduce programming concepts, scripting concepts in Linux operating system and concept of Python programming language through laboratory sessions.

### **Syllabus**

#### **Unit 1**

Introduction – Programming languages – Problem-solving Technique, Programming concepts, Flow charts, Compilers, Interpreters, Linux command, Shell script.

#### **Unit 2**

Introduction of Python programming, Introduction to Python IDEs and other programming environments, Fundamentals of data handling, File handling, Flow control, Flow control (loops), Fine tuning of flow control,

#### **Unit 3**

Functional programming, Lambda and map functions, Classes and object in Python, Introduction NumPy, Data manipulation using nd-arrays, Structured data processing using Pandas, Structured data visualization, Regular expressions, Introduction to database management using python, HTTP requests using requests package, Data/Web scraping with Python, Saving and managing scraped Data to Databases using ORM, Managing and Maintaining Code using Version Control Systems

### **References:**

1. "Python for Everybody: Exploring Data in Python 3" by Charles Severance
2. "Learning Python, 5th Edition" by Mark Lutz:
3. "Think Python, 2nd Edition" by Allen B. Downey

### **Course Outcomes**

- CO1: Solve complex problems by breaking them into smaller, more manageable parts, thus identifying and fixing errors in their code.
- CO2: Understand the basic concepts of programming, such as data types, control structures, functions, and object-oriented programming.
- CO3: Use common Python libraries and tools, such as NumPy, Pandas, and Jupyter Notebook, and learn how to use them to solve more complex problems.
- CO4: Introduce collaboration tools like Git and GitHub and learn how to work with others on coding projects, including version control and code reviews.
- CO5: Create web pages with database connectivity

## **22ADM501 Glimpses of Indian Culture    LTP:1-0-0    Credits: 1**

### **Learning Objectives**

To identify and analyze the cultural practices, values, and beliefs of modern India, recognizing the ways in which cultural identities intersect with systems of power and oppression. Moreover, the students will be able to reflect on their own cultural biases and assumptions to work towards becoming more culturally competent and inclusive in their personal and professional lives.

## **Syllabus**

### **Unit 1**

What is Sanatana Dharma; The Heritage of Scriptures ; The idea of Īśvara; Guru Tattva and Avatara Tattva

### **Unit 2**

Theory of Karma; Purusharthas; Sanyasa; Yajna; Symbolism

### **Unit 3**

Understanding Nataraja; Temples: The Cradle of Culture;

### **Unit 4**

Other Heterodox Systems in India; Sadhana

## **References:**

1. Glimpses of Indian Culture
2. Sanatana Dharma- The Eternal Truth (A compilation of Amma's teachings on Indian Culture)

## **Course Outcomes**

CO1: Understand the relevance of legendary people who are involved with restoring balance and harmony or guiding humanity toward spiritual liberation.

CO2: Demonstrate an understanding of the historical and cultural contexts that have shaped the role of women in society.

**SSD401**

**Soft Skills**

**LTP:2-0-0**

**Credits: 2**

## **Learning Objectives**

To prepare students to become aware of personal speech habits and characteristics, develop speech preparation and presentation techniques, audience awareness, and self-awareness, and cultivate poise and self-confidence.

## **Syllabus:**

Presentation Skills Speech techniques, content, purpose, strengths, and weaknesses. Develop good listening and feedback skills; Resume Writing Purpose of Resumes, Resume Formats, Parts of the Resume; Group Discussion Type of GDs, Roles one could play, PESTLE analysis; Interview Skills Types of Interviews, Behavioral interviews, STAR, HR questions

## **Course Outcomes**

CO1: Teach how to write resume.

CO2: Understand the key skills and behaviors required to facilitate a group discussion, speak with confidence, exhibit leadership skills and make the group achieve the goals and also competent to answer behavioral and HR questions.

## Semester II

**YCS411      Patanjali's Yoga Sutra      LTP:3-0-0      Credits: 3**

### Learning Objectives

The course describes the historical and cultural context of the Yoga Sutras, and explain their significance for contemporary yoga practice.

### Syllabus

#### **Unit 1**

Overview of the text, its history, and significance; Key concepts and terminology, including "yoga," "sutra," "chitta," and "samadhi"; Overview of the eight limbs and their relationship to one another; Discussion of the first two limbs, yama and niyama, and their ethical principles

#### **Unit 2**

Overview of the third and fourth limbs, asana and pranayama; Discussion of the benefits of asana and pranayama for physical, mental, and spiritual health; Overview of the fifth and sixth limbs, pratyahara and dharana; Discussion of the role of pratyahara in turning inward and quieting the senses, and the practice of dharana as concentration and focus; Overview of the seventh and eighth limbs, dhyana and samadhi; Discussion of the difference between dharana and dhyana, and the state of samadhi as union with the divine

#### **Unit 3**

Review of the eight limbs and their interrelationship; Discussion of how to integrate the principles and practices of the Yoga Sutras into everyday life; Application of the principles and practices to contemporary issues and challenges; Overview of modern interpretations of the Yoga Sutras; Discussion of critiques and challenges to the text, including its historical and cultural context, its emphasis on individual liberation, and its relationship to social justice; Exploration of how to engage with the text in a critical and inclusive manner

### References:

1. "Bhartiya Yoga Parampara ke Vividh Ayam (Diverse Dimensions of Indian Yoga Tradition)" by Rajkumari Pandey, 2018, Radha publication.
2. "Swami Vivekananda's concept of jnana yoga, raja yoga, karma yoga and bhakti yoga" by Yogeshwar G. *Anc Sci Life*. 1994 Jan;13(3-4):261-5.
3. "Yoga Origin, History and Development in India" by Chandan Singh, Dr. T.O. Reddy *Indian Journal of Movement Education and Exercises Sciences (IJMEES)*, Bi-annual Refereed Journal & A UGC Approved & Notified Journal Vol. VIII No. 1 Jan-June 2018, Online ISSN 2249-6246, Print ISSN 2249-5010
4. "Yoga Sutra" by Patanjali. (c. 2nd century BCE - 4th century CE).

## Course Outcomes

CO1: Analyze and interpret key concepts and terms in the Yoga Sutras,

CO2: Compare and contrast the different limbs of yoga and their interrelationship and explain how they contribute to the goal of samadhi.

CO3: Reflect on their own learning and growth and identify areas for improvement and development.

## **YCS412 Introduction to Cognitive Psychology LTP:3-0-0 Credits: 3**

### Learning Objectives

This course will introduce the basic problems of philosophy of mind: the nature of the mental, classification of mental phenomena, the mind-body dilemma, awareness problems, and intentionality problems (mental representation).

### Syllabus

#### **Unit 1:**

The subjective and the objective (What distinguishes those aspects of the world we call 'mental' or 'psychological'? What is the 'mark' of the mental?); Intentionality (for the mind's representation of reality); Consciousness ('phenomenal' and 'access' consciousness); Intentionality and consciousness (relationship between intentionality, Intentionalists, the doctrine of 'phenomenal intentionality'; Belief and reason (What are beliefs? How is belief related to action, and to judgement? is belief conscious?).

#### **Unit 2: The Will**

The Will (Mental faculty of the will, reason (belief) and conation (desire) Decisions, acts of the will? and intentions, states of the will, motivational structures.); The mind and the brain

#### **Unit 3: Mind-Body Problem and Behaviourism**

Psychology before the Cognitive Revolution.; Multisensory integration in cortex; information fusion; from sensation to cognition

#### **Unit IV: Social Cognition & Disorders of consciousness**

Key points in social cognition (context and social judgment, schemas, social signals); Social and cultural influences; Coma, vegetative states, locked-in syndrome; Schizophrenia; Somnambulism and Crime, Non-human consciousness, Infant consciousness; Mild cognitive impairment and Alzheimer's disease, Cognition in Alzheimer's disease.

### References

1. "Cognitive psychology" By Braisby, N., & Gellatly, A." (2nd ed.) (2005) Oxford University Press.

2. "Philosophy of Mind" by Kim, J. (3<sup>rd</sup> ed)(2018). Routledge.

### **Course Outcomes**

- CO1: Understanding the basic principles and theories of cognitive psychology, including perception, attention, memory, language, and problem-solving.  
CO2: Developing critical thinking skills and the ability to evaluate research in cognitive psychology  
CO3: Explain the basic principles of cognitive psychology to understand different brain disorders

## **YCS413 Computational Neuroscience    LTP:3-0-0    Credits: 3**

### **Learning Objectives**

This course deals with the study of the structure and function of the nervous system and how information is transmitted from one part to the other with an emphasis on physiology, development, and anatomy.

### **Syllabus**

#### **Unit 1**

Introduction to computational neuroscience; Neural coding and information theory; Systems theory for the analysis of neurons and neural circuits, as well as cable theory, passive and active compartmental modeling, numerical integration methods,

#### **Unit 2**

Models of plasticity and learning, models of brain systems, and their relationship to artificial neural networks, Network dynamics and oscillations

#### **Unit 3**

Applications of computational neuroscience; Modeling using NEURON, different types of neural codes.

### **References:**

1. "Theoretical neuroscience: Computational and mathematical modeling of neural systems." By Dayan, P., & Abbott, L. F. (2005). MIT Press.
2. "Biophysics of Computation" by Christof Koch, (1999) Oxford University Press: New York, New York,.
3. "Fundamentals of computational neuroscience" by Trappenberg, Thomas., (2009)OUP Oxford.
4. "From computer to brain: foundations of computational neuroscience" by Lytton, William W., (2007), Springer Science & Business Media.

### **Course Outcomes**

CO1: Understand the basics of computational neuroscience, including the relationship between neurons, synapses, and circuits.

CO2: Learn how to use computational tools and techniques to model neural systems and analyze neural data.

CO3: Learn about synaptic plasticity and how neural circuits adapt to changing inputs and environments.

CO4: Gain experience in implementing and analyzing learning algorithms for artificial neural networks.

## **YCS414      Research Methodology      LTP:3-0-0      Credits: 3**

### **Learning Objectives**

This course gives an understanding of the basic principles of research methodology and their application in the field of yoga and cognitive science research thus helping the student to develop research questions and hypotheses, select appropriate research designs and methods, and write research proposals or write papers

### **Syllabus**

#### **Unit 1: Introduction to Research Methodology**

Overview of research methodology; Types of research designs; Steps in the research process; Ethical considerations in research; Introduction to yoga research; Types of yoga research; Challenges in conducting yoga research; Yoga research case studies; Introduction to cognitive science research; Types of cognitive science research; Challenges in conducting cognitive science research; Cognitive science research case studies

#### **Unit 2: Quantitative & Qualitative Research Methods**

Introduction to quantitative research methods; Variables, hypothesis testing, and statistical analysis; Types of quantitative research designs; Practical exercises in quantitative research methods; Introduction to qualitative research methods; Types of qualitative research designs; Data collection techniques (interviews, focus groups, observations, etc.); Data analysis techniques (coding, thematic analysis, etc.); Introduction to mixed methods research; Types of mixed methods designs; Advantages and disadvantages of mixed methods research; Practical exercises in mixed methods research

#### **Unit 3: Writing a Research Proposal**

Elements of a research proposal; Developing a research question and hypothesis; Research design and methods; Ethical considerations in research proposals; Introduction to data analysis and interpretation; Types of data analysis techniques (descriptive statistics, inferential statistics, content analysis, etc.). Reporting research findings; Practical exercises in data analysis and interpretation

#### **Unit 4: Writing a Research Paper**

Elements of a research paper; Structure and formatting of a research paper; Writing styles and conventions; Tips for effective academic writing

#### **Unit 5: Presenting Research Findings**



of Raja Yoga; Benefits and challenges of Raja Yoga; Tantra Yoga-Overview of Tantra Yoga; Importance of energy and consciousness in yoga; Kundalini yoga and its benefits; Benefits and challenges of Tantra Yoga

### **Unit 3- Different Formats of Yoga Practices**

Face yoga; Yin Yoga; Yang Yoga; Power Yoga; Restorative Yoga; Prenatal Yoga

#### **References:**

1. “The role of Yoga-Asanas in Mind-body Harmony” by Dr. Amruthur Narasimhan and Dr. Marehalli G Prasad
2. <http://www.yogapoint.com/info/typesofyoga.htm>
3. <https://www.healthifyme.com/blog/types-of-yoga/>

#### **Course Outcomes**

CO1: Appreciate the mind-body-spirit connection in yoga

CO2: Gain basic knowledge of different forms of yoga postures and breathing techniques

CO3: Apply the principles of yoga to daily life and personal practice.

**SSD402**

**Soft Skills II**

**LTP:1-0-0**

**Credits: 1**

#### **Learning Objectives**

The objective of this course to give students training and experiences that will allow them to be successful in their second year and beyond. There are two components in this course. Verbal skills that equip students with vocabulary skills, Essential Grammar, write Cover letter and SOPs

#### **Syllabus**

Cover Letter Skills, key words, action words; S V Agreement Subject, Pronoun, Verb, to write grammatically correct sentences; Modifier Adjectives and Adverbs; Clauses Noun, clause, Relative clauses etc.; Punctuation marks; Time, Tenses,; Reading and Comprehension Language, pronunciation; SOP

#### **Course Outcomes**

CO1: Teach how to write covering letter.

CO2: Understand the key skills and behaviors required to facilitate a group discussion, speak with confidence, exhibit leadership skills and make the group achieve the goals and also competent to answer behavioral and HR questions.

**YCS417 Statistics and Data analysis**

**LTP:3-0-0**

**Credits: 3**

## **Learning Objectives**

This course gives a basic understanding of the statistical concepts and techniques to analyze and interpret data. This course also helps in data management, cleaning, and preparation for data analysis

## **Syllabus**

### **Unit-I Descriptive Statistics:**

How to enter data into statistical software, the sample mean, measures of variability, correlation, scatter-plot and box-plot, 2x2 tables, relative risk, odds ratio, calculating descriptive statistics with statistical software.

### **Unit-II Inferential Statistics:**

Review of probability theory, introduction to estimation, introduction to hypothesis testing, p-values, confidence intervals, comparing groups of continuous data, comparing groups of categorical data, multiple-comparison procedures, estimation, and hypothesis testing with statistical software.

### **Unit-III Statistical Models:**

Introduction to analysis of variance, simple linear regression, multiple linear regression, logistic regression, introduction to survival analysis, cox regression, fitting statistical models with statistical software.

### **Unit-IV Design of Experiments:**

Parallel group designs, crossover designs, dose-finding designs, sample size calculations with statistical software. Qualitative data analysis: content analysis, grounded theory, and thematic analysis.

### **Unit V- Data analysis:**

Data visualization: charts, graphs, and other visualizations to communicate data.; Data management: data cleaning, data transformation, and data storage.; Ethics and responsible conduct in research: principles of informed consent, data privacy, and confidentiality.

## **Reference Books**

1. "Statistics for the life sciences" by Samuels, Myra L., Jeffrey A. Witmer, and Andrew A. Schaffner., San Francisco, California: Dellen Publishing Company, 1989.
2. "Biostatistics" by Sokal, Robert R., and F. James Rohlf., (1987). Francise & Co, New York
3. "Practical statistics for medical research" by Altman, Douglas G., 1990,CRC press.

## **Course Outcomes**

CO1: Demonstrate an understanding of statistical concepts, methods, and terminology

CO2: Apply statistical techniques to analyze and interpret data

CO3: Develop skills in data management, cleaning, and preparation for analysis.

CO4: Visualise data using different graphical methods

**YCS418 Srimad Bhagavad Gita and LTP:4-0-0 Credits: 4  
Samkhaya Karika**

### **Learning Objectives**

The course discusses Shrimad Bhagavad Gita & Samkhya karika as a basic philosophical and theoretical foundation of Yoga. These texts provide a deeper understanding to the yogic concepts mentioned in them and students will be able to relate to and implement in everyday activities.

### **Syllabus**

#### **Unit I: Introduction to Bhagavad Gita,**

General Introduction to Bhagavad Gita; History of Bhagavad Gita; Definitions of Yoga, their relevance & Scope; Importance of Bhagavad Gita in modern time

#### **Unit II: Essentials of Bhagavad Gita**

Samkhya and Gyan Yoga; Karma Yoga; Bhakti Yoga; Concept of - Atmaswarupa, Stithaprajna, Trividha sradha, Dharma, Samsara, Moksha

#### **Unit III: Introduction to Samkhya darshan-I**

General Introduction to Samkhya karika; Nature of Dukha; Introduction to 25 elements; Praman-Vivechan; Satkaryavada; Vyakta-Avyakta; Causes of Failure

#### **Unit IV: Introduction to Samkhya darshan-II**

Nature of Gunas; Purasha Vivechana; Buddhi k Lakshana and Dharma; Ahamkara se Sarg Privritti; Trayodashkaranaewam Sukshmasharir; Mukti vivechana

### **References:**

1. "Sadhaksanjeevani" by Swami Ramsukha Das, Geeta Press, Gorakhpur
2. "Bhagavad Geeta"- Geeta Press, Gorakhpur
3. "Shrimad Bhagavad Geeta Yathartharooopa", by Swami Prabhupada, (1972) Bhaktivedanta Book Trust, Iskon Temple
4. "SamkhayaKarika" by Ishwar Krishna. Chokhamba Publication, Delhi
5. "SamkhayaKarika" by Ishwar Krishna, (2005) Motilal Banarasi Das, Delhi

### **Course Outcomes**

CO1: Understand the central philosophical and religious concepts of the Shrimad Bhagwad Geeta and Samkhaya Karika.

CO2: Analyze and interpret key themes, motifs, and metaphors of the texts.

CO3: Evaluate the relevance of the texts' teachings to contemporary society, including their ethical and moral implications

CO4: Compare and contrast the teachings of the Shrimad Bhagwad Geeta and Samkhaya Karika with other Indian philosophical systems and understand the similarities and differences between them

**YCS419**

**Yoga Practices**

**LTP:0-0-3**

**Credits: 1**

### **Learning Objectives**

The main objective of the course is to introduce a regular and rigorous practice (sadhana) of yoga practices. The course focused to teach advanced yoga techniques and to provide knowledge about how to prevent health issues by encouraging good health and yoga practices.

### **Syllabus**

#### **Unit 1. Introduction to Yogic Sukshma Vyayamas**

Focuses on the yogic practices which have an impact on different body parts. The practical sessions include practices that loosens joints and remove the energy blocks from the body and as follow:- Neck Movement, Shoulder Rotation, Elbow Bending, Wrist Rotation, Knee Bending And Rotation, Ankle Bending And Rotation.

#### **Unit.2 . Introduction to Shat Karmas or Shat Kriya**

Focuses on the cleansing techniques that purify internal organ system of human body. The practical session will conducted on follows techniques: Kapalbhathi- Cleansing of Frontal Lobes, Neti- Cleansing of Nasal Passages, Jyoti Trataka-Cleansing of Eyes, Nauli Kriya-Cleansing of abdominal organs, Dhauti-Cleansing of Digestive tract, Basti-Cleansing of Large intestine

#### **Unit.3. Relaxation techniques of yoga**

Focuses on progressive muscle relaxation techniques. This practical session mainly focuses on some physical poses in yoga and is as follows: Paschimottanasana-Seated Forward Bend, Malasana-Garland Pose, Balasana-Childs Pose, Viparita Karani -Legs-Up-the-Wall Pose-, Sukhasana -Easy Pose, Matsyasana -Fish Pose, Savasana-Corpse Pose

### **Reference Books:**

1. "Hatha Yoga Pradipika" by Saraswati, Swami Muktibodhananda, and Swami Satyananda Saraswati, Yoga Publications Trust, (1998).
2. "Asana pranayama mudra bandha" by Saraswati, Swami Satyananda, and Janez Kristijan Hiti. Bihar, India: Yoga Publications Trust, 1996.
3. "Light on yoga: the definitive guide to yoga practice" by Iyengar, Bellur Krishnamukar Sundara; (1965),

### **Course Outcomes**

- CO1: Comprehend how to use yoga to strengthen various systems
- CO2: Correlate yoga practices to increased social connectedness
- CO3: Explore various paths in the field of yoga and wellness

**YCS420 Statistics and Data analysis-      LTP:0-0-3      Credits: 1**  
**laboratory**

### **Learning Objectives**

This course gives a hands-on session with R software for understanding statistical concepts and techniques to analyze and interpret data. This course also helps in data management, cleaning, and preparation for data analysis using R

## **Syllabus**

### **Unit-I Descriptive Statistics:**

How to enter data into statistical software, the sample mean, measures of variability, correlation, scatter-plot and box-plot, 2x2 tables, relative risk, odds ratio, calculating descriptive statistics with R.

### **Unit-II Inferential Statistics:**

Hypothesis testing, p-values, confidence intervals, comparing groups of continuous data, comparing groups of categorical data, multiple-comparison procedures, estimation, and hypothesis testing with R.

### **Unit-III Statistical Models:**

Introduction to analysis of variance, simple linear regression, multiple linear regression, logistic regression, introduction to survival analysis, cox regression, fitting statistical models with R.

### **Unit IV- Data analysis:**

Data visualization: charts, graphs, and other visualizations to communicate data.; Data management: data cleaning, data transformation, and data storage.; Ethics and responsible conduct in research: principles of informed consent, data privacy, and confidentiality.

## **References**

1. "Statistics for the life sciences" by Samuels, Myra L., Jeffrey A. Witmer, and Andrew A. Schaffner., San Francisco, California: Dellen Publishing Company, 1989.
2. "Biostatistics" by Sokal, Robert R., and F. James Rohlf., (1987). Francise & Co, New York
3. "Practical statistics for medical research" by Altman, Douglas G., 1990,CRC press.

## **Course Outcomes**

CO1: Demonstrate an understanding of statistical concepts, methods, and terminology using R software

CO2: Apply statistical techniques in R to analyze and interpret data

CO3: Develop skills in data management, cleaning, and preparation for analysis using R.

CO4: Visualise data using different graphical packages in R

## Semester III

### YCS501 Mind, Health, Diet and Yoga LTP:4-0-0 Credits: 4

#### Learning Objectives

This course explains the relationship between the mind, health, diet, and yoga practices and identify and apply different yoga practices for enhancing mental and physical well-being

#### Syllabus

##### **Unit 1- Mind and Yoga**

The concept of mind in Yoga philosophy; The relationship between mind and body in Yoga; Techniques for managing and regulating the mind through Yoga practices; Yogic meditation practices for enhancing mental well-being

##### **Unit 2- Health and Yoga**

The role of Yoga in promoting physical health; The science behind the physiological benefits of Yoga practices; Understanding the therapeutic effects of Yoga in the treatment of various health conditions; Yoga practices for promoting overall health and wellness

##### **Unit 3- Diet and Yoga**

The importance of diet in Yoga philosophy; Understanding the relationship between food and consciousness; Yogic guidelines for healthy eating habits; Yogic practices for enhancing digestion and metabolism

#### Reference Books

1. Goleman, D., & Davidson, R. J. (Eds.). (2017). *The Science of Meditation: How to Change Your Brain, Mind, and Body*. Penguin.
2. Desikachar, T. K. V. (1995). *The Heart of Yoga: Developing a Personal Practice*. Inner Traditions/Bear & Co.
3. Khalsa, S. B. S., & Cohen, L. (2014). *Principles and Practice of Yoga in Health Care*. Handspring Publishing.
4. Cramer, H., Lauche, R., Haller, H., & Dobos, G. (2013). A Systematic Review and Meta-analysis of Yoga for Low Back Pain. *The Clinical Journal of Pain*, 29(5), 450–460. <https://doi.org/10.1097/ajp.0b013e31825e1492>
5. Gard, T., Noggle, J. J., Park, C. L., Vago, D. R., & Wilson, A. (2014). Potential Self-Regulatory Mechanisms of Yoga for Psychological Health. *Frontiers in Human Neuroscience*, 8. <https://doi.org/10.3389/fnhum.2014.00001>

#### Course Outcomes

CO1: Apply Yoga practices for managing and regulating the mind, promoting physical health, and maintaining a healthy diet

CO2: Evaluate the therapeutic effects of Yoga in the treatment of various health conditions

CO3: Develop and implement a personal Yoga practice for enhancing overall well-being

**YCS502**

**Data Acquisition**

**LTP:3-0-0**

**Credits: 3**

### Learning Objectives

This course develops an understanding of the various data acquisition methods, select appropriate data acquisition methods and interpret and present data used in yoga and cognitive science research.

### Syllabus

#### **Unit 1- Introduction to Data Acquisition**

Overview of data acquisition methods in cognitive science and yoga research; Introduction to research ethics and informed consent; Types of data: quantitative, qualitative, subjective, and objective

#### **Unit 2- Measuring Physiological Responses**

**Physiological data:** Physiological measures such as heart rate variability, cortisol levels, and skin conductance can be used to measure changes in the body's response to stress before and after yoga practice.; **Neuroimaging data:** Neuroimaging techniques such as functional magnetic resonance imaging (fMRI), electroencephalography (EEG), and magnetoencephalography (MEG) can be used to investigate changes in brain activity before and after yoga practice.

#### **Unit 3- Observational, Surveys and Self-Report Measures**

Techniques for coding and analyzing video recordings of yoga practice; Ethical considerations in observational research; **Behavioral data:** Data collected from performance on cognitive tasks, such as reaction time, accuracy, and memory recall. Best Practices for Behavioral Data Collection: - Mini-mental state examination (MMSE), California Verbal Learning Test-II, Rey Auditory Verbal Learning Test, 7-Minute Screen and the Memory Alteration Test (M@T), Big 5 inventory; **Self-report data:** Participants can provide subjective reports of their experiences, such as changes in mood, stress levels, or feelings of well-being.

#### **Unit 4- Case Studies and Research Project Presentations:**

Students present their research projects to the class, discussing their research question, data acquisition methods, and preliminary findings

### References

1. Gard, T., Holzel, B. K., & Lazar, S. W. (2014). The potential effects of meditation on age-related cognitive decline: A systematic review. *Annals of the New York Academy of Sciences*, 1307(1), 89-103.
2. Kozasa, E. H., Radvany, J., Finucane, C., & Bromfield, E. B. (2012). Mind-body medicine: An introduction and review of the literature. *Medical Clinics*, 96(3), 917-931.
3. Patel, N. K., Newberg, A. B., & Wintering, N. (2013). Meditation and yoga: Neural correlates. In *Brain and Behavior* (pp. 205-216). Springer New York.

4. Streeter, C. C., Gerbarg, P. L., Saper, R. B., Ciraulo, D. A., & Brown, R. P. (2012). Effects of yoga on the autonomic nervous system, gamma-aminobutyric-acid, and allostasis in epilepsy, depression, and post-traumatic stress disorder. *Medical Hypotheses*, 78(5), 571-579.
5. Desikachar, T. K. V. (1999). *The heart of yoga: Developing a personal practice*. Inner Traditions/Bear & Co.
6. John, O. P., & Srivastava, S. (1999). The Big-Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (Vol. 2, pp. 102–138). New York: Guilford Press.
7. A new assessment for episodic memory. Episodic memory test and caregiver's episodic memory test” by Tomas Ojea, M M González Álvarez de Sotomayor, O Pérez González, Oscar Fernández, December 2012, *Neurologia* (Barcelona, Spain) 28(8).

### **Course Outcomes**

CO1: Identify and use various data acquisition methods in yoga and cognitive science research.

CO2: Design and conduct research studies using appropriate data acquisition methods.

CO3: Analyze and interpret data using based on the case studies and present findings effectively.

**YCS503                      Yogic Counselling                      LTP:2-0-0                      Credits: 2**

### **Learning Objectives**

This course integrate yoga and cognitive science in counselling, therapy, and mental health care and also familiarises the art of counseling through the teaching of yogic practices.

### **Syllabus**

#### **Unit I: Introduction to Psychology and Cognitive psychology**

Definition of mind according to modern science and yoga; comparative understanding of the process of perception, learning, Intelligence, Creativity, memory and emotions according to modern psychology and yoga psychology; the five koshas (layers of being) and the chakra system A brief understanding of conventional methods of :- Psychotherapy, Existential/Humanistic Therapy; Psychodynamic Therapy; Behavioural Therapy; Cognitive Therapy.

#### **Unit 2: Yoga for personality development**

Meaning and Definition; Nature of personality; Determinants of Personality; Theories of personality – Freud’s Psychoanalytic Theory, Roger’s Humanist Theories; Eysenck’s Theory of Personality; The Five-Factor Theory of Personality; Yoga for total personality development as research data presentations

#### **Unit 3: Yogic Counseling**

Understanding the philosophy and principles of Yogic Counselling, its benefits and applications in modern life; Role of Shuddhi Prakriyas in treatment of illnesses, prevention and promotion of positive Health; Concepts of Karma Shuddhi (Yama, Niyama), Ghata Shuddhi (Shat-karma), Snayu Shuddhi (Asana), Prana Shuddhi (Pranayama), Indriya and Mano Shuddhi (Pratyahara), Chitta Shuddhi (Dharana, Dhyana and Samadhi)

#### **Unit 4: Principles and techniques of counseling**

Qualities of a counsellor; Role of catharsis as understood by modern psychology and counseling ; Yogic understanding of recognizable and unrecognizable stresses as karma, samskaras; Methods recommended for cleansing (chittashuddhi ) in healing; Yoga techniques to be used during counseling to cope with Hyper Sensitive Mind, Excessive Speed Of Mind, Problems Of Perfectionist Personality, Hereditary And Congenital Problems, Psychological Conflicts, Calamities/ Life Events (Present, Past, Concerns About Future Distressing Events), Ageing Etc.

#### **Unit 5: Ethics and Professionalism in Counselling**

Understanding ethical principles and guidelines for counsellors, including boundaries, confidentiality, and professionalism. Analyzing case studies and practicing yogic counselling techniques with peers and clients under the guidance of a qualified instructor.

#### **References**

1. "Introduction to Psychology" by Morgan, C. T., King R. A., Weisze J. R. and Schopler, J. (1987), Mc Graw Hill.
2. "Theories of personality" by Hall C. S. Lindzey, G. (1978), New York: Wiley Eastern Limited
3. "Yoga psychology: The science of the inward connection." By Desai, N. R. (2013). Lotus Press.
4. "Meditation states and traits: EEG, ERP, and neuroimaging studies" by Cahn, B. R., & Polich, J. (2006, Psychological bulletin, 132(2), 180.
5. "The science of meditation: How to change your brain, mind, and body" by Goleman, D., & Davidson, R. J. (2017). Penguin.
6. American Counseling Association. (2014). ACA Code of Ethics. Alexandria, VA: Author.
7. "A yogic approach to counselling" by Kudesia, R. S. (2018), International Journal of Yoga - Philosophy, Psychology and Parapsychology, 6(1), 11-19.
8. "Yoga as an adjunct to psychotherapy" by Khalsa, G. S., & Greiner-Ferris, J. M. (2019), In The Wiley Handbook of Theoretical and Philosophical Psychology (pp. 335-354). Wiley-Blackwell.

#### **Course Outcomes**

- CO1: Develop and display counselling skills such as active listening, empathy, and problem-solving  
CO2: Apply yogic counselling techniques for specific issues such as stress, anxiety, depression, addiction, and relationship problems.  
CO3: Understand the ethical principles and guidelines for counsellors.  
CO4: Analyzed case studies and practiced yogic counselling techniques with peers and clients

**Elective I**

**LTP:3-0-0**

**Credits: 3**

**Elective II**

**LTP:3-0-0**

**Credits: 3**

# **YCS504 Yoga Therapy Techniques LTP:0-0-3 Credits: 3**

## **Learning Objectives**

This course aims to provide an in-depth understanding of yoga therapy techniques to students. It also covers the history and philosophy of yoga therapy, anatomy and physiology, common health conditions, and yoga therapy techniques to address these conditions. Equipped with the knowledge and skills to design and implement yoga therapy techniques to address a range of health conditions. This course can serve as a foundation for further study and practice in the field of yoga therapy.

## **Syllabus**

### **Unit 1- Introduction to Yoga Therapy Techniques and common ailments**

Definition and history of yoga therapy; Understanding stress and psychosomatic ailments and how to tackle it. Understanding common health conditions and their causes. Yoga therapy techniques for stress management

### **Unit 2 Introduction to disorders**

Understanding the musculoskeletal, respiratory, cardiovascular, and nervous systems and their disorders; Brief classification of the types and tests like the Pulmonary function tests and their principles; Yoga therapy techniques for musculoskeletal issues. Yoga therapy techniques for respiratory issues. Yoga therapy techniques for mental health issues; Yoga therapy for Cardiovascular Disorders

### **Unit 3: Practical Applications of Yoga Therapy Techniques**

Designing yoga therapy sessions; Modification and adaptation of yoga therapy techniques; Yoga therapy techniques for specific populations (e.g. seniors, children)

## **Reference Books**

1. McCall, T. (2007). *Yoga as Medicine: The Yogic Prescription for Health and Healing*. New York: Bantam.
2. Desikachar, T. K. V. (1999). *The Heart of Yoga: Developing a Personal Practice*. Inner Traditions/Bear & Co.
3. Bosch, P. (2010). *Yoga Therapy in Practice: A Hands-On Guide to Cultivating Therapeutic Presence*. Singing Dragon.
4. Weller, S. (2007). *Healing yoga: A practical approach to healing common ailments with yoga*. Franz Steiner Verlag.
5. Udupa, Katil N. *Stress and its management by yoga*. Motilal Banarsidass Publ., 1985.
6. A. Mooventhan, L. Nivethitha, Evidence based effects of yoga in neurological disorders, *Journal of Clinical Neuroscience*, Volume 43, 2017, Pages 61-67, ISSN 0967-5868, <https://doi.org/10.1016/j.jocn.2017.05.012>.
7. Stefan G. Hofmann, Joshua Curtiss, Sat Bir S. Khalsa, Elizabeth Hoge, David Rosenfield, Eric Bui, Aparna Keshaviah, Naomi Simon, *Yoga for generalized anxiety disorder: design of a randomized controlled clinical trial*, *Contemporary Clinical Trials*, Volume 44, 2015, Pages 70-76, ISSN 1551-7144.

## **Course Outcomes**

CO1: Understand the history and philosophy of yoga therapy.

CO2: Explain and understand the effects of yoga therapy on different anatomical systems.

CO3: Identify common health conditions and apply appropriate yoga therapy techniques to address them.

CO4: Design yoga therapy sessions and modify techniques for specific populations.

## **YCS505 Neurophysiology Laboratory      LTP:0-0-3      Credits: 3**

### **Learning Objectives:**

This course aims to provide students with hands-on experience in studying the neurophysiology of yoga and its effects on cognitive function. The course also helps acquire practical skills in neurophysiological techniques, including electroencephalography (EEG) and heart rate variability (HRV) analysis. Neurophysiological data can be collected, analyzed and interpreted for yoga practice and related to cognitive outcomes.

### **Syllabus**

#### **Unit 1 Introduction**

Introduction to Neurophysiology and Yoga. Overview of neurophysiology and its relevance to the study of yoga and cognitive science

#### **Unit 2 Recording and Analysis**

Introduction to electroencephalography (EEG) recording and analysis techniques; Hands-on experience with EEG recording and data analysis; Introduction to heart rate variability (HRV) recording and analysis techniques; Hands-on experience with HRV recording and data analysis

#### **Unit 3 Effects of Yoga and analysis based on task**

Understanding memory, attention, emotion, and its neural basis; Hands-on experience with EEG recording and analysis during yoga practice and memory, attention and emotion regulation tasks

#### **Unit 4 Data Analysis and Interpretation**

Introduction to statistical methods for neurophysiological data analysis; Hands-on experience with data analysis and interpretation of neurophysiological data

### **Reference Books**

1. "Principles of Neural Science" by Eric Kandel, James Schwartz, and Thomas Jessell
2. "The Science of Yoga" by William Broad

## Course Outcomes

- CO1: Understand the basic principles of neurophysiology and its relevance to the study of yoga and cognitive science.
- CO2: Acquire practical skills in neurophysiological techniques, including electroencephalography (EEG) and heart rate variability (HRV) analysis.
- CO3: Apply neurophysiological techniques to study the effects of yoga on cognitive function, including attention, memory, and emotional regulation.
- CO4: Analyze and interpret neurophysiological data collected during yoga practice and relate them to cognitive outcomes.

## Electives

Electives									
Sl. No.	Course No.	Subject	Teaching hrs/Week		Marks				Total Marks
			L-T-P	Credits	Theory		Practical		
					Internal	External	Internal	External	
1	YCS511	Language Computations and Mental Architecture	3-0-0	3	50	50	----	----	100
2	YCS512	Decision making	3-0-0	3	50	50	----	----	100
3	YCS513	Data Analysis for Behavioral Research using R	3-0-0	3	50	50	----	----	100
4	YCS514	Message of Upanishads	3-0-0	3	50	50	----	----	100
5	YCS515	Scientific Study of Yoga and Consciousness	3-0-0	3	50	50	----	----	100
6	YCS516	Social cognition	3-0-0	3	50	50	----	----	100
7	YCS517	An Introduction to the Mahabharata	3-0-0	3	50	50	----	----	100
8	YCS518	An Introduction to the Ramayana	3-0-0	3	50	50	----	----	100
9	YCS519	Consciousness and cognitive Psychology	3-0-0	3	50	50	----	----	100
10	YCS520	Yoga & Naturopathy	3-0-0	3	50	50	----	----	100

# **YCS511 Language Computations and Mental Architecture      LTP:3-0-0      Credits: 3**

## **Learning Objectives**

This course introduces the study of language and its relation to the human mind. It covers the basic concepts of language computations, including syntax, semantics, and pragmatics, and explores the mental architecture of language processing in the brain. The course also introduces computational models of language processing and how they can be used to understand human language behavior.

## **Syllabus**

### **Unit 1: Introduction to Language and Computation**

Overview of language as a computational system; The Chomsky hierarchy and formal language theory; Basic concepts in algorithmic complexity and computability; The cognitive architecture of language processing; Models of sentence processing: garden-path model, constraint-based models, etc.; The role of working memory and attention in language processing

### **Unit 2: Language Acquisition and Thought**

Theories of language acquisition: behaviorist, nativist, constructivist, etc.; Stages of language development: phonology, syntax, semantics, pragmatics; Critical periods for language acquisition; The Sapir-Whorf hypothesis and linguistic relativity; Linguistic determinism vs. linguistic influence; Cognitive consequences of bilingualism and multilingualism

### **Unit 3: Neural Basis of Language and yoga**

Brain regions involved in language processing: Broca's area, Wernicke's area and other areas; Connectionist models of language processing; The role of mirror neurons in language and communication; Language and communication in yoga philosophy; Mantra chanting and its effects on the brain; The use of language in mindfulness and meditation practices

### **Unit 4: Computational Models of Yoga and Meditation**

Computational models of attention and concentration in yoga and meditation; Modeling the effects of yoga and meditation on mental states and cognitive performance; Virtual reality and other technologies for simulating yoga and meditation experiences

## **Reference Books**

1. Pinker, S. (1994). *The Language Instinct: How the Mind Creates Language*. New York: HarperCollins Publishers.
2. Chomsky, N. (1957). *Syntactic Structures*. The Hague: Mouton & Co.

3. Jackendoff, R. (1990). *Semantic Structures*. Cambridge, MA: MIT Press.
4. Jurafsky, D., & Martin, J. H. (2020). *Speech and Language Processing. An Introduction to Natural Language Processing, Computational Linguistics, and Speech Recognition* (3rd ed.). Upper Saddle River, NJ: Pearson.

### **Course Outcomes**

- CO1: Identify and explain the basic concepts of language computations, including syntax, semantics, and pragmatics.
- CO2: Describe the mental architecture of language processing in the brain.
- CO3: Analyze and evaluate computational models of language processing.
- CO4: Apply computational models to language data to understand human language behavior.

**YCS512                      Decision making                      LTP:3-0-0                      Credits: 3**

### **Learning Objectives**

This course will explore the principles and practices of decision-making through the lenses of yoga and cognitive science. Students will develop an understanding of the cognitive processes involved in decision-making, and how these can be influenced by emotional states, biases, and mindfulness practices. Through experiential learning, students will explore techniques for enhancing decision-making, including yogic practices such as meditation, breathwork, and visualization.

### **Syllabus**

#### **Unit 1: Introduction to Decision Making**

Overview of decision-making processes and models; Historical context of decision-making research; Cognitive processes involved in decision-making; The role of emotions and biases in decision-making; Techniques for mitigating biases and emotional influence; The benefits of mindfulness in decision-making

#### **Unit II: Yogic Techniques for Decision Making**

Meditation techniques for decision-making; Breathwork techniques for decision-making; Visualization techniques for decision-making; Case Studies in Decision Making- Analyzing decision-making in personal and professional settings; Group decision-making processes; Ethical decision-making considerations

#### **Unit III: Applying Decision-Making Principles**

Applying principles of decision-making to real-world situations; Incorporating yogic techniques into decision-making processes; Reflection on course learnings and personal growth

### **Reference Books**

1. "Thinking, Fast and Slow" by Daniel Kahneman
2. "The Power of Now" by Eckhart Tolle

3. "The Four Agreements" by Don Miguel Ruiz
4. "Mindfulness-Based Cognitive Therapy for Depression" by Segal, Williams, and Teasdale
5. "The Decision Book: 50 Models for Strategic Thinking" by Mikael Krogerus and Roman Tschäppeler.
6. "Yoga and the Quest for the True Self" by Stephen

### **Course Outcomes**

- CO1: Develop an understanding of the cognitive processes involved in decision-making and how they can be influenced by emotional states and biases.
- CO2: Understand the principles and practices of mindfulness and how they can enhance decision-making.
- CO3: Learn yogic techniques for decision-making, including meditation, breathwork, and visualization.
- CO4: Analyze case studies of decision-making in different contexts, including personal and professional settings.
- CO5: Apply principles of decision-making to real-world situations, including group decision-making and ethical decision-making.

## **YCS513 Data Analysis for Behavioral Research using R      LTP:3-0-0      Credits: 3**

### **Learning Objectives**

This course introduces the use of the R programming language for analyzing behavioral data in the context of yoga and cognitive science research. The course will cover various statistical techniques commonly used in behavioral research, including data manipulation, visualization, descriptive statistics, inferential statistics, correlation, and regression analysis. The course will also cover best practices for data management, data visualization, and reporting of results.

### **Syllabus**

#### **Unit 1: Introduction to R and RStudio**

Introduction to R and RStudio; Basic syntax and data structures; Importing and exporting data; Basic data manipulation; Introduction to data visualization; Creating basic graphs in R; Customizing plots  
Visualizing distributions and relationships

#### **Unit 2: Descriptive & Inferential Statistics**

Measures of central tendency; Measures of variability; Probability distributions; Sampling distributions; Hypothesis testing; t-tests; Analysis of variance (ANOVA); Effect sizes

#### **Unit 3: Correlation and Regression Analysis**

Correlation analysis; Simple linear regression; Multiple regression; Assumptions and model diagnostics

#### **Unit 4: Best Practices for Data Management and Reporting**

Data cleaning and preparation; Best practices for data management; Reporting results in APA format  
Creating reproducible reports using RMarkdown

### **Reference Books**

1. Wickham, H. (2016). *ggplot2: Elegant Graphics for Data Analysis*. Springer.
2. Field, A., Miles, J., & Field, Z. (2012). *Discovering Statistics Using R*. Sage Publications Ltd.
3. Crawley, M. J. (2013). *The R Book*. John Wiley & Sons.
4. Gelman, A., & Hill, J. (2007). *Data Analysis Using Regression and Multilevel/Hierarchical Models*. Cambridge University Press.
5. Fox, J. (2015). *Applied Regression Analysis and Generalized Linear Models*. Sage Publications Ltd.
6. Rosnow, R. L., & Rosenthal, R. (2008). *Beginning Behavioral Research: A Conceptual Primer*. Pearson.
7. Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2013). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*. Routledge.

### **Course Outcomes**

CO1: Understand the principles and methods of statistical analysis in the context of behavioral research

CO2: Gain practical experience in using the R programming language for data analysis

CO3: Learn best practices for data management, data visualization, and reporting of results

**YCS514      Message of Upanishads      LTP:3-0-0      Credits: 3**

### **Learning Objectives**

This course develops a deeper understanding of the philosophical and spiritual foundations of yoga and its potential applications in cognitive science. This course gives an insight into the nature of consciousness, the self, and the relationship between the mind and the external world.

### **Syllabus**

#### **Unit 1: Introduction to the Upanishads:**

Overview of the Upanishads, their historical context, and their significance in the Hindu tradition. Fundamental concepts and themes, central to the Upanishads, such as the nature of the self (Atman), the ultimate reality (Brahman), and the relationship between the two.

#### **Unit 2: Major Upanishads:**

Taittiriya Upanishad; Brihadaranyaka, Chandogya, and Katha Upanishads; Kena Upanishad, Prashna Upanishad; Mandukya Upanishad; Ishavasyopanishad; Swetaswataropanishad: Nadabindooopanishad; Yogakundali Upanishad; Dhyandindooopanishad; Yogarajopnishad: among others.

#### **Unit 3: The concept of Atman, Maya and Karma, the nature of reality, and the practice of meditation**

Nature of consciousness and the self, which is a central topic in cognitive science; law of cause and effect, which governs the cycle of birth and rebirth. Understanding illusion Role of intention and action in shaping our experiences and the importance of ethical behavior.

#### **Unit 4: Interpretation, Analysis and Application to Modern Life:**

Analyze and interpret the Upanishads, examining different interpretations and perspectives on their meaning and significance; relevance of the Upanishads to modern life and how their teachings can be applied to contemporary issues and challenges.

### **Reference Books**

1. The Upanishads: Breath of the Eternal by Swami Prabhavananda and Frederick Manchester.

### **Course Outcomes**

- CO1: Understand the foundational concepts of the Upanishads, including Brahman, Atman, and Maya.  
CO2: Explore the relationship between the Upanishads and Yoga, including the principles and practices of Yoga.  
CO3: Examine the intersection between the Upanishads and Cognitive Science, including current scientific research on consciousness and the mind.  
CO4: Discuss the concept of Karma and its relationship to ethical behavior and the nature of the self.

## **YCS515 Scientific Study of Yoga and Consciousness      LTP:3-0-0      Credits: 3**

### **Learning Objectives**

This course is designed to provide an overview of the scientific study of Yoga and its impact on consciousness. The course explores various scientific studies on the effects of Yoga on the mind and body, as well as the role of consciousness in Yoga practices.

### **Syllabus**

#### **Unit 1: Introduction to Yoga and Consciousness**

Overview of Yoga philosophy and practices; Understanding of the role of consciousness in Yoga; Exploration of the scientific basis of Yoga; Review of research studies on the effects of Yoga on the body and mind; Discussion of the limitations of scientific research on Yoga

#### **Unit 2: Yoga and Cognitive Science, Brain**

Exploration of the intersection of Yoga and cognitive science; Understanding of the neural mechanisms underlying Yoga practices; Discussion of the role of consciousness in cognitive science; Review of research studies on the effects of Yoga on the brain; Understanding of the neuroplasticity of the brain and its relationship to Yoga; Discussion of the limitations of neuroscience research on Yoga

#### **Unit 3: Yoga and Consciousness: Personal Practice and Teaching**

Understanding of the role of consciousness in personal practice and teaching; Exploration of techniques for cultivating consciousness through Yoga; Discussion of the challenges of integrating scientific and experiential knowledge in teaching Yoga

#### **Unit 4: Critiquing Scientific Studies and Applications of Yoga and Consciousness**

Understanding of the limitations and biases of scientific studies on Yoga and consciousness; Critique of selected scientific studies on Yoga and consciousness; Discussion of the importance of critical thinking in evaluating scientific research; Exploration of applications of Yoga and consciousness in various fields, such as healthcare and education; Understanding of the ethical considerations in applying Yoga and consciousness practices; Discussion of the challenges and opportunities in integrating Yoga and cognitive science in different contexts; Discussion of future directions in the scientific study of Yoga and consciousness

### **Reference Books**

1. "The Science of Yoga: The Risks and Rewards" by William J. Broad
2. "The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma" by Bessel van der Kolk
3. "Yoga Anatomy" by Leslie Kaminoff and Amy Matthews
4. "The Yoga Sutras of Patanjali" translated by Edwin F. Bryant
5. "The Psychology of Yoga: Integrating Eastern and Western Approaches for Understanding the Mind" by Georg Feuerstein
6. "Yoga for Emotional Balance: Simple Practices to Help Relieve Anxiety and Depression" by Bo Forbes
7. "The Heart of Yoga: Developing a Personal Practice" by T.K.V. Desikachar
8. "Yoga Therapy: A Guide to the Therapeutic Use of Yoga and Ayurveda for Health and Fitness" by A.G. Mohan and Indra Mohan

### **Course Outcomes**

- CO1: Understand the scientific basis of Yoga and its impact on consciousness  
CO2: Discuss various scientific studies on the effects of Yoga on the mind and body  
CO3: Apply knowledge of the intersection of Yoga and cognitive science in personal practice and teaching  
CO4: Analyze and critique scientific studies on Yoga and consciousness

**YCS516**

**Social cognition**

**LTP:3-0-0**

**Credits: 3**

### **Learning Objectives**

This course will explore the social aspects of cognition and how they relate to yoga practice. The course will focus on the integration of cognitive science and yoga philosophy to understand the social dynamics of yoga practice, including the role of mindfulness, self-awareness, and compassion in social interactions. Students will also be introduced to research methods in social cognitive neuroscience and their application to yoga practice.

### **Syllabus**

Unit 1: Introduction to Social Cognition and Yoga; Social Perception and Yoga Practice; Social Influence and Persuasion in Yoga; Social Cognition and Emotion in Yoga

Unit 2: Neural Basis of Social Cognition and Yoga; Yoga, Culture, and Social Contexts;

Unit 3: Research Methods in Social Cognitive Neuroscience and Yoga; Applications of Social Cognition and Yoga in Real Life;

### **Reference Books**

1. "Social Cognition" by Susan T. Fiske and Shelley E. Taylor
2. "Social Neuroscience" by John T. Cacioppo and Jean Decety
3. "The Social Animal" by David Brooks
4. "Social Influence: Science and Practice" by Robert B. Cialdini
5. "Mindfulness-Based Cognitive Therapy for Depression" by Zindel V. Segal, J. Mark G. Williams, and John D. Teasdale.

### **Course Outcomes**

CO1: Understand the fundamental theories of social cognition

CO2: Analyze the role of mindfulness and self-awareness in social interactions

CO3: Evaluate the impact of social influence on behavior and attitudes

CO4: Examine the neural basis of social cognition and emotion

CO5: Develop a critical understanding of the cultural and social contexts of yoga practice

## **YCS517      An Introduction to the      LTP:3-0-0      Credits: 3** **Mahabharata**

### **Learning Objectives**

The course will provide an overview of the epic, its major characters, themes, and key events. Students will also gain an understanding of the historical and cultural context of the Mahabharata and its enduring impact on Indian society and culture.

### **Syllabus**

#### **Unit 1: Introduction to the Mahabharata**

Historical and cultural context of the Mahabharata; Key concepts and themes in the Mahabharata; Poetic merits of the Mahabharata

#### **Unit 2: The Beginning of the Mahabharata**

The story of the birth of the Pandavas and Kauravas; Characters in the Mahabharata; The game of dice and its consequences

#### **Unit 3: The Bhagavad Gita**

The context of the Bhagavad Gita within the Mahabharata; Key concepts and themes in the Bhagavad Gita; The role of women in the Mahabharata; Analysis of selected female characters in the Mahabharata

#### **Unit 4: The Mahabharata in Contemporary Indian Society**



CO3: Contextualize the epic within Indian history and culture and articulate its relevance in contemporary Indian society.

## **YCS519 Consciousness and Cognitive Psychology      LTP:3-0-0      Credits: 3**

### **Learning Objectives**

This course focuses on understanding and developing of the human mind. The course also describes the key theories and models to understand the neural and biological processes that underlie consciousness and cognition.

### **Syllabus**

#### **Unit I: Introduction**

History of Consciousness and Cognitive Psychology; Key Theories and Models; Human Psychology and its' definition, scope and utility, Forces, Conflicts, Processes. Impact of disorders. Cause of emotions in the mind according to Yoga texts

#### **Unit II Emotions and Intelligence:**

Sensation, Perception, Attention, Memory, Learning, Feeling Their definitions and types, Intelligence and its' measurements; Emotional Intelligence and Social Intelligence.

#### **Unit III: Neural and Biological Bases of Consciousness and Cognition**

Brain Imaging Techniques; Neuropsychology of Consciousness and Cognition

#### **Unit IV: Real-World Applications of Consciousness and Cognition**

Education; Health; Artificial Intelligence

### **Reference Books**

1. Baars, B. J. (1997). In the Theater of Consciousness: The Workspace of the Mind. Oxford University Press.
2. Crick, F. (1994). The Astonishing Hypothesis: The Scientific Search for the Soul. Scribner.
3. Gazzaniga, M. S. (2005). The Ethical Brain: The Science of Our Moral Dilemmas. HarperCollins.
4. Miller, G. A. (1956). The magical number seven, plus or minus two: Some limits on our capacity for processing information. *Psychological Review*, 63(2), 81-97.
5. Neisser, U. (1967). *Cognitive psychology*. Appleton-Century-Crofts.
6. Pylyshyn, Z. W. (1999). Is vision continuous with cognition? The case for cognitive impenetrability of visual perception. *Behavioral and Brain Sciences*, 22(3), 341-365.
7. Schacter, D. L. (1996). *Searching for Memory: The Brain, the Mind, and the Past*. Basic Books.
8. Tulving, E. (1985). Memory and consciousness. *Canadian Journal of Psychology/Revue canadienne de psychologie*, 39(1), 1-12.

## Course Outcomes

- CO1: Understanding of the historical development of the study of consciousness and cognitive psychology
- CO2: Understand the neural and biological processes that underlie consciousness and cognition.
- CO3: Describe the key theories and models of consciousness and cognition.
- CO4: Apply their understanding of consciousness and cognition to real-world problem

**YCS520      Yoga & Naturopathy      LTP:3-0-0      Credits: 3**

## Learning Objectives

This course focuses on the Naturopathic principles, concepts, and practices appropriate for yoga treatment. This course also helps to learn about the therapeutic applications of yoga and naturopathy for physical and mental health, thus cultivating a deeper understanding of the mind-body connection and its role in overall well-being.

## Syllabus

### **UNIT I: Introduction:**

Meaning; Definition; History; Evolution; Basic elements; Principles and Philosophy of Naturopathy; Panchmahabhoot; Role of yoga and naturopathy in promoting physical and mental health.

### **UNIT II: Definition, Principles, Types, Methods, Benefits and Precautions of**

Mud Therapy; Hydro Therapy; Hip Bath, Steam Bath, Enema, Packs, Compress, Fomentation. Sun Therapy; Massage Therapy; Diet Therapy; Fasting Therapy

### **UNIT III: Treatment of various disorders by Naturopathy**

Common Cough & Cold; Insomnia; Fever; Hypertension; Constipation; Diabetes; Spondylitis; Obesity; Arthritis; Stress; Asthma

## Reference Books

1. Feuerstein, G. (2016). The Yoga Tradition: Its History, Literature, Philosophy and Practice. Hohm Press.
2. Kaur, R. (2018). Principles and Practice of Yoga in Health Care. Springer.
3. Sharma, R. (2015). Yoga as Therapy: A Practical Guide for the Healing of Common Ailments. North Atlantic Books.
4. Pizzorno, J. E., & Murray, M. T. (2012). Textbook of Natural Medicine. Elsevier.
5. Smith, J. A., & Greer, T. L. (Eds.). (2018). Handbook of Mind-Body Medicine for Primary Care. Sage Publications.

## Course Outcomes

- CO1: Apply the principles of yoga and naturopathy to enhance physical and mental health.
- CO2: Understand the therapeutic applications of yoga and naturopathy for various health conditions.
- CO3: Teach yoga and naturopathy to individuals and groups, using safe and effective techniques.
- CO4: Cultivate a deeper awareness of the mind-body connection and its impact on overall well-being.

## Semester IV

**YCS506**

**Dissertation**

**LTP:0-0-10 Credits: 10**

### Learning Objectives

Writing a dissertation exposes them to real-world scenarios, inspiring them to observe, analyze the information and draw conclusions from it, improve their writing and communication skills, and understand the process behind the findings.

The purpose of field experience for postgraduate students is to increase their level of practical knowledge through clinical training at a hospital for yoga treatment and cognitive findings. Case History Writing - Introduction to general parameters; Introduction to special parameter; Education of Participant Care; Psychological analysis; Data Entry and Data Analysis; Report Writing; Case Presentation

At the end of the semester, the student is supposed to submit a thesis and present their finding in front of panel members

### Course Outcomes

CO1: Annotating data

CO2: Analysing data

CO3: Analysing data

CO4: Deducing findings

**YCS507 Advanced Yoga Techniques**

**LTP:0-0-6**

**Credits: 6**

### Learning Objectives

This course briefs about advanced yoga techniques and practical knowledge about advanced meditation techniques.

### Syllabus

Unit I: Pranayama, Cyclic Meditation

Unit II: Asanas, Yoga Nidra

Unit III: Mudras, Mind Sound Resonance Technique

Unit IV: Bandhas, Pranic Energisation Techniques

### Reference books:

1. Saraswati, Swami Satyananda, and Janez Kristijan Hiti. Yoga nidra. Munger: Bihar School of Yoga, 1984.

**Course Outcomes**

CO1: Understanding advanced yoga techniques

CO2: Memorising relaxing technique