



Department of Sports Science and Yoga

Ramakrishna Mission Vivekananda Educational and Research Institute

(NAAC A++ Accredited Deemed University)
Belur Math, Howrah 711202
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MSc Yoga Program Brochure

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1. About Yoga

The tradition of Yoga has always been passed on individually from teacher to student through oral teaching and practical demonstration. The formal techniques that are now known as Yoga are, therefore, based on the collective experiences of many individuals over many thousands of years. The particular manner in which the techniques are taught and practiced today depends on the approach passed down in the line of teachers supporting the individual practitioner. Yoga is essentially a spiritual discipline based on an extremely subtle science, which focuses on establishing harmony between mind, body, thought and action; restraint and fulfillment; harmony between man and nature and a holistic approach to health and well-being. Yoga is not about exercise but to discover the sense of oneness With ourselves, the world and Nature. It is an art and science for healthy living. The word "Yoga" is derived from the Sanskrit root 'yuj' meaning "to join", "to yoke" or "to unite". According to Yogic scriptures, the practice of Yoga leads to the union of individual consciousness with universal consciousness. In addition to this, Yoga is becoming popular day by day and has become a wave which is sweeping across the globe. In this course we introduce yoga as a science of Holistic living and not merely as yoga postures. During the course the student will be able to understand the concept of Preventive Healthcare, Promotion of Positive Health and Personality Development through Yoga.

Salient features of MSc Yoga program

The two-year full time M.Sc. Yoga program is a unique blend of study of Yogic texts and modern scientific disciplines related to Yoga. Equal importance is given to subjects in modern science, such as Anatomy, Physiology, Neuroscience, Biomechanics, both theory and practical, and subjects in ancient texts, such as Hatha Yoga, Yoga Upanishads, Bhagavadgita, Principal Upanishads, Yoga Vasistha etc. Students from Science background can complement their knowledge of science with the knowledge of Sanskrit and Yogic texts, while students of Humanities background will gain knowledge of scientific subjects that are closely related to Yoga.

Yoga as a Science: The main emphasis of teaching and research in the Department is Yoga as science, such as research is conducted on acute cardiorespiratory responses during suryanamaskar and investigating the changes in brainwaves during pranayama.



2. Curriculum

2.1. Aim of the course

The aim of the course is to propagate and promote yoga for positive health

2.2 Objectives of the course:

1. To introduce basic concepts of preventive health and health promotion through yoga
2. To introduce concepts of Human Body to the students so as to make their Understanding clear about the benefit and contraindication of a practice.
3. To train teachers on preventive health and promotion of positive health through yoga and personality development

2.3 Duraton: Duration of the course is 4 semesters (**2 Years**)

2.4 Mode: The MSc Yoga program is **Regular, full time**

2.5 Eligibility Criteria

1. B.Sc Yoga / B.Sc. Yoga Therapy / B.Sc. Yoga and Naturopathy / B.Sc. in any Science stream (full time, regular mode) from a recognised University with minimum 50% marks in aggregate.(45% for reserve category)
2. Note: BA Yoga / Yoga Philosophy are not eligible to apply for MSc Yoga

2.6 Admission Procedure

1. From the current academic year admission is conducted through CUET. Candidates should qualify the CUET PG exam paper code COQP21. An interview/counseling is conducted after screening based on the admission test score.
2. For details of application procedure and other formalities please refer to <https://sy.rkmvu.ac.in/admission-msc-ss/>

2.7 Semester Wise Courses with Credits

MSc Yoga curriculum Department of Sports Science & Yoga, RKMVERI Belur Math					
Semester 1			Semester 2		
Sl. no.	Subject	Credit	Sl. no.	Subject	Credit
1	Spiritual Heritage of India I	3	1	Spiritual Heritage of India II	3
2	Foundations of Yoga	3	2	Patanjali Yoga Sutra & Meditation	4
3	Human Anatomy & Physiology	4	3	Fundamentals of Ayurveda and Panchakarma	3
4	Yogic Lifestyle Management	3	4	Applied Yoga	3
5	Sanskrit Language	1	5	Physiology of Yogic Practices	3
6	Yoga Practicum I	2	6	Yoga Practicum II	2
7	Computer Applications†	2	7	Science of Pranayama	3
Semester Total		18	Semester Total		21
Semester 3			Semester 4		
Sl. no.	Subject	Credit	Sl. no.	Subject	Credit
1	Yoga and mental health	3	1	Science of Human Consciousness	3
2	Yoga Psychology	3	2	Indian Philosophy	3
3	Yoga Therapy I	3	3	Integral Yoga	3
4	Principal Upanishads and Bhagavadgita	3	4	Yoga Upanishads	3
5	The Four Yogas	3	5	Yoga Therapy II	3
6	Hatha Yogic Texts	3			
Semester Total		18	Semester Total		15
Swayam courses					Credit
			1	Counseling Psychology	4
			1	Introduction to Psychology	2
			2	Yoga and Positive Psychology for Managing Career and Life	2

Note: The curriculum has been revised according to the new directive National Credit Framework (NCrF) 2022 under NEP 2020

3. About the Department

In the year 2012, the University established a full- fledged academic department to promote scientific study and research related to sports, including adapted sports, and yoga - 'Department of Sports Science & Yoga'. The five-storey building christened as 'Atma-Vikas' (literally, five-layered self-development) houses the Department of Sports Science and Yoga, equipped with modern laboratories and classrooms, state-of-the-art conference room, a fully functional fitness center and huge Yoga halls, dedicated exclusively to teaching and research in the fields of Sports Sciences and Yoga.



Ramakrishna Mission is well known for its contribution in this field of education in India. The Ramakrishna Mission Vivekananda University (presently named RKMVERI) was established in 2005, under Section 3 of University Grants Commission (UGC) Act, 1956, in order to promote education and research in selected “thrust” areas – of which adapted sports and yoga were one of the important areas. In the year 2012, the University established a full-fledged academic Department to promote scientific study and research related to sports, including adapted sports, and yoga. The Department initially operated from the IRDM Narendrapur campus. A PG Diploma in Sports Science was started in 2012. The department sustained the initial years by contributing in e-PG Pathshala programme of MHRD and embarking on research activities. In 2017 the Department started operating from the Belur campus and launched the PhD program in Sports Science. In the same year the one year full-time PG Diploma in Yoga was also launched. Subsequent year was the start of PhD program in Yoga. Sincere efforts by many dedicated faculty members led to the stage where several programmes on sports science and yoga could be introduced within a few years of the genesis of the department. Recognizing the services of Ramakrishna Mission to mankind, UNESCO instituted a Chair (UNESCO Chair) in the field of “Inclusive Adapted Physical Education and Yoga” at the University in the year 2012.

3.1 Academic Programs

The Department of Sports Science and Yoga of the University offers the following programs–

1. Ph.D. in Sports Science
2. Ph.D. in Yoga
3. M.Sc. in Sports Science (Two Years Full time course)
4. M.Sc. in Yoga (Two years Full-time course)
5. PG Diploma in Yoga (One year Full time Course) -**Not offered in 2023 session**
6. Certificate Course in Yoga and Naturopathy (Six months course)

3.2 List of Faculty & their Research Interest (<https://sy.rkmvu.ac.in/faculty/>)

Name	Area of Expertise	Highest degree & alma Mater
Swami Vidyapradananda <i>Head of Department, DSSY, RKMVERI Belur</i>	Yoga: Patanjali Yoga & Bharatiya Manovigyan, Physiological and neural correlates of pranayama techniques, Yoga Upanishads	Ph.D. in Operations Research from <i>The Pennsylvania State University, USA</i>
Dr. Kalipada Pal <i>Associate Professor, DSSY, RKMVERI Belur</i>	Ayurveda, Panchkarma, Naturopathy, Yoga Therapy	M.D. (Ayurveda) from <i>University of Calcutta</i>
Dr. Arkadeb Dutta <i>Assistant Professor, DSSY, RKMVERI Belur</i>	Neurophysiology & Cognition: Event-related markers of perception, attention and cognition, functional brain neuroplasticity using non-invasive methods (EEG & fMRI), neural correlates of cognition and behaviour using invasive techniques in animal models, behaviour oriented classification of interneuronal sub-types.	Ph.D. in Physiology from <i>Defence Institute of Physiology & Allied Sciences, Delhi,</i> Post doctoral fellow at <i>University of Freiburg, Germany, Technion, Israel and National Brain Research Center, Manesar</i>
Dr. Kunal Sikder <i>Assistant Professor, DSSY, RKMVERI Belur</i>	Sports Biochemistry: Diabetic cardiomyopathy (DCM), Cardiac inflammation, Intracellular cross-talks in diseased heart, iPSC culture and differentiation, Myocyte and fibroblast culture, Genetic manipulation in animal model and in vitro system	Ph.D.in Physiology from <i>University of Calcutta</i> Post doctoral fellow at <i>Center for Translational Medicine, Dept. of Medicine, Thomas Jefferson University, Philadelphia, USA</i>
Dr. Subhadip Paul <i>Assistant Professor, DSSY, RKMVERI Belur</i>	Computational Neuroimaging: Non-invasive structural and Function MRI of human brain, computational modeling of MRI signal, investigation of the human brain circuit dysfunctions in gait-related and other disorders. Pain management is one specialized area	Ph.D. in Computational Neuroscience from <i>National Brain Research Center, Gurgaon</i> Post doctoral: Newton International Fellow, <i>Institute of Psychiatry, Psychology & Neuroscience, King's College London,</i> Researcher at <i>MIND Institute, USA</i>

Dr. Arnab Das <i>Assistant Professor, DSSY, RKMVERI Belur</i>	Sports & Exercise Physiology: Cardiorespiratory demand of sports, Exercise responses at altered environment, Physiology of yoga Fitness assessment & interpretation: Lab based, Field based	Ph.D. in Physiology from <i>University of Burdwan</i> Research Fellow at <i>Sports Authority of India, Bangalore</i>
Dr. Manohar Kumar Pahan <i>Assistant Professor, DSSY, RKMVERI Belur</i>	Sport Psychology: Psychological Intervention, athletic potential management, long-term athletic development, normative data-hub, Sports Training: Program design, Strength & conditioning, movement education, athlete assessment	Ph.D. in Sport Psychology from <i>Lakshmibai National Institute of Physical Education, Gwalior</i>
Dr. Rangaraj Giridharan <i>Associate Professor & Head, GAPEY, RKMVERI Coimbatore</i>	Adapted Physical Activity: Curriculum Development and Delivery of Inclusive Adapted Physical Activity, Design and Development of Adapted Sports Gadget	Ph.D. in Physical Education from <i>Bharathiar University</i>
Dr. J. Viswanathan <i>Assistant Professor GAPEY, RKMVERI Coimbatore</i>	Performance analysis: software based movement analysis. Exercise physiology: basketball training, taping & peaking.	Ph.D in Physical Education from <i>Bharathidasan University, Tiruchirapalli</i>
Dr. Vijendra Kumar Grover <i>Assistant Professor GAPEY, RKMVERI Coimbatore</i>	Exercise Physiology: Sports genetics, molecular exercise physiology Strength & Conditioning: Boxing	Ph.D. in Exercise Physiology from <i>Lakshmibai National Institute of Physical Education, Gwalior</i>

Adjunct & Guest faculty

Name	Area of Expertise	Highest degree & alma Mater
Swami Samarpanananda <i>School,of Indian Heritage, RKMVERI Belur</i>	Indian Heritage, spirituality,	MA , University of Delhi
Swami Kaleshanda <i>Registrar, RKMVERI Belur School,of Indian Heritage, RKMVERI Belur</i>	Patanjali Yoga, Meditation	Ph.D. in Environmental Science , from IARI Pusa, New Delhi
Dipankar Pal <i>Guest faculty</i>	Psychology	M.Sc Physiology from <i>Calcutta University</i> , B.Ed
Prasanta Samanta <i>Instructor</i>	Yoga Practicum	MA (Yoga) from <i>Himalayan Garhwal University</i>
Soumendranath Manna <i>Guest faculty</i>	Physiology of Yoga	MSc Physiology from <i>Vidyasagar University</i> PGDY from RKMVERI

3.3 Laboratories and Equipments (<https://sy.rkmvu.ac.in/ssy-labs/>)

The Department of Sports Science and Yoga is housed in a recently built (in 2018) five-storey building christened as 'Atma-Vikas' (literally, five-layered self-development), and is equipped with

- ❖ **Eight state-of-the-art laboratories,**
- ❖ **Four ICT enabled classrooms,**
- ❖ **One state-of-the-art conference room with v-con facility,**
- ❖ **One state-of-the-art auditorium hall with 120 seating capacity and v-con facility,**
- ❖ **One fully functional fitness center with multi-gym**

The state-of-art well equipped eight laboratories are -

i) Kinanthropometry laboratory:

High resolution weighing machine (AVERY - Weigh-Tronix)
 Body composition analyzer cum stadiometer (Jawon Medical - ioi 353)
 Anthropometric rod
 Anthropometric tape
 Skinfold calipers (Harpenden & Holtain)
 Sliding caliper

ii) Exercise Physiology & clinical evaluation laboratory:

CPET metabolic cart (Cosmed - Quark CPET)
 Peak bike (Monark - Ergomedic 894E)
 Cycle ergometer (Monark - Ergomedic 828E)
 Treadmill (Turbuster - TR6800DI)
 Rowing ergometer (Concept II model D)
 Bicycle ergometer (Axos Kettler - Cycle P)
 Blood lactate analyzer (Arkray - Lactate Pro2)
 Spirometer (in-built in COSMED CPET)
 ECG (BPL CARDIART - 6208 VIEW)
 Heart rate monitor and watch (Polar - V800, H7, H10)
 Sphygmomanometers (Dr. Morepen - bp-02 & Omron HEM-8712) & stethoscopes
 Pulse oximeter (MEDITIVE - MPO-03)
 Pulse oximeter (ONIDEK - Finger Pulse Oximeter 6500)
 Digital hand grip dynamometer (CAMRY - EH101)
 Digital hand grip dynamometer (Takei - T.K.K 5401)
 Digital back-leg strength dynamometer (Takei - T.K.K 5402)
 Sit and reach box
 Metronome
 Microscope (GEMKO LABWELL G. S. 725)



iii) Biochemistry laboratory

(located at School of Biological Sciences, Ramakrishna Mission Seva Pratisthan, Kolkata)

Electrolyte Analyzer
 Cooling centrifuges & centrifuges (Thermo Fisher & Remi)
 Microplate reader
 UV-vis Spectrophotometer
 Nanodrop
 Gel electrophoresis apparatus (BioRad)
 Gel doc
 PCR-Thermal cyclers
 -80°C Freezer
 -20°C Freezer
 4°C Refrigerator
 Precision weighing scale
 Precision Pipettes Autoclave Sterilize



iv) Strength & Conditioning laboratory:

Cross trainer (Welcare WC-508)
 Spinning bike (Welcare)
 Lifting platforms
 Barbells and weights set
 Training disks
 Resistance bands
 Dumbbell set



v) Rehabilitation laboratory:

Ultrasound therapy unit (Bhogilal pvt. ltd.)
 Traction unit (Bhogilal pvt. ltd.)
 Foam roller
 Medicine ball
 Hydrotherapy & Steam bath
 Interferential Therapy Unit (Bhogilal pvt. ltd.)
 Theraband High & Mini Loop
 Resistance Band
 Rectangular Balance Board
 Circular Balance Board
 Swiss Ball
 Models of various joints



vi) Neurophysiology & Cognition Laboratory:

RMS-Brainview Plus 24 Channel Digital EEG machine
 RMS Digital Polyrite System. "Polyrite D"
 Multichannel Bio-potential recorder "RMS" Multipara Patient Monitor (Phoebus P512)



vii) Sports Psychology Laboratory

Biofeedback and neuro-feedback for GSR, Temp, Pulse Rate, Respiration, EMG, EEG (Alpha) (CBF-206 PSYCHOFEEBACK)



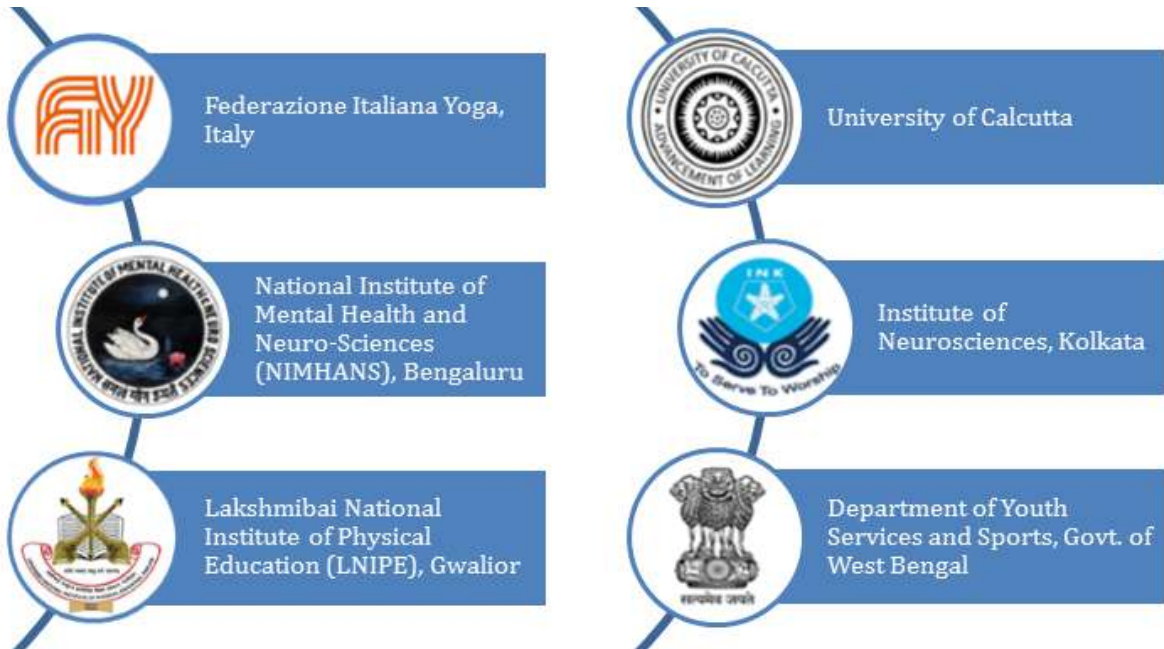
viii) Kinesiology Laboratory

High speed cameras (GoPro HERO7 Black)
OpenBCI Cyton wearable bio-sensing module for EMG recording (eight channel)
IDUN DRYODE™ ALPHA KIT



3.4 Memorandum of Understanding (MoU)

The Department currently has active MoUs with the following organizations -



3.5 Research Collaborations

The department has active research collaborations with the following institutions -



Institute of
Neurosciences
Kolkata

The Mind
RESEARCH NETWORK
FOR NEURODIAGNOSTIC DISCOVERY

3.6 UNESCO Chair in Inclusive Adapted Physical Education and Yoga

The department holds the very prestigious UNESCO Chair in the area of 'Inclusive Adapted Physical Education and Yoga' (1004), which was established in 2012 at Ramakrishna Mission Vivekananda Educational and Research Institute for activities in the field of inclusive adapted physical education and yoga. This Chair is first of its kind in the field of 'Inclusive Education' in Asia. Establishment of the chair during the 150th Birth Anniversary of Swami Vivekananda is a significant step towards realization of his vision of education for life-building, man-making and character building by combining the best elements of the East and the West.



Objectives of the Chair:

- Carry out research in inclusive physical education in collaboration with partners, and disseminate research results widely;
- Design an orientation programme in inclusive adapted physical education, and provide training to staff working in schools and colleges;
- Organize seminars and conferences to facilitate networking and the sharing of knowledge and good practices; and,
- Strengthen links and cooperation with local and international institutions active in the field of inclusive adapted physical education, to achieve the above objectives.

3.7 Yoga Camps, IDY & Extension Activities

The Department of Sports Science, RKMVERI conducts regular Yoga camps in various localities and villages in and around Kolkata. The Department also conducted yoga camps in various educational Institutes, such as IIM Ranchi, Ramakrishna Mission Vidyalaya, Narainpur etc. IDY is celebrated each year. Details of the events are available in <https://sy.rkmvu.ac.in/extension-activities/>. Yoga students also participated in All India Inter University Yogasana Championship held in KIIT Bhubaneswar in 2021 and 2022

