

# **Madan Bhandari Academy of Health Sciences**



## **Department of Clinical Physiology and Yogic Sciences**

**Departmental Information Booklet**

# **2022**

# **Madan Bhandari Academy of Health Sciences**

## **Department of Clinical Physiology and Yogic Sciences**

### **Departmental Information Booklet**

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## **Madan Bhandari Academy of Health Sciences**

### **Department of Clinical Physiology and Yogic Sciences**

#### **Introduction**

“Physiology of today is the medicine of tomorrow” as Ernest Henry Starling once said. Physiology derived from the greek word ‘phusis’ - nature and ‘logia’ - study of is the study of functions and mechanisms in a living system. The Department of Clinical Physiology is one of the first three departments established in the Year 2077 according to the academic plan of Madan Bhandari Academy of Health Sciences (MBAHS). The Department of Clinical Physiology and Yogic Sciences has actively taken an integral participation in teaching physiology to students of allied health sciences which includes Bachelor in Medical Laboratory Technology, Bachelor of Pharmacy and Bachelor of Public Health in Knowledge Village (Nawalpur) from the academic year 2077/78.

The Department of Clinical Physiology and Yogic Sciences is equipped with its own lab where practicals focusing on development of the skills of the students are conducted. The department of clinical physiology encourages students as well as the faculty members to research activities to fulfill innovation oriented with ingenious pursuit.

The teaching laboratories have adequate working space and enough technical equipment for facilitation of the learning process. A separate teaching and faculty area dedicated for the Department of Clinical Physiology and Yogic Sciences is also available within the premises of Knowledge Village which is planned to shift to Gauritar in Bhadra 2079.

The Department of Clinical Physiology incorporated Yogic Sciences in the academic session 2079/80. This integrates the Eastern and Western teachings. “Yoga is a methodised effort towards self-perfection” - Sri Aurobindo. The physiological alteration brought in a human body function by yoga is normal than before. Yoga falls in the realm of Physiology. The increasing interest and acceptance in yoga as a non pharmacological prevention and treatment to diseases gives the students an opportunity to learn about alternative methods which are patient centric.

## **Madan Bhandari Academy of Health Sciences**

### **Department of Clinical Physiology and Yogic Sciences**

## **Academic Course**

### **Applied Integrated Basic Sciences**

The Department of Clinical Physiology and Yogic Sciences has developed a curriculum of Applied Integrated Basic Sciences (AIBS) for allied health sciences programme along with Department of Clinical Anatomy, Clinical Microbiology, Clinical Biochemistry, Pharmacy and Clinical Pharmacology, Community Medicine and Public Health and Clinical Pathology since the academic year 2077/78. The curriculum envisions incorporating a multidisciplinary basic pillar of knowledge to encourage students to learn and practice a patient centric art of health care.

Additionally, the department offers a Professional Development Course which is designed to prepare students to work efficiently as professionals. The course emphasizes on the importance of professionalism, attitude, medical humanities, ethics and communication skills in the health care system.

The entry requirements and admission process in this program will be as per the rules, regulations, and guidelines set by the Medical Education Commission.

The Academic Council of MBAHS approved the curriculum of AIBS for allied health sciences. Practice sessions in communication skills and professionalism development will assist our students in becoming better communicators, good team leaders, and patient-friendly professionals. Incorporation of yoga will allow students to practice an alternate patient centric art of health care.

The course for AIBS for the bachelor program for allied health shall extend over a period of two semesters (one academic year). In the near future Department of Clinical Physiology and Yogic Sciences aims to conduct physiology and elective yogic science classes to undergraduate and postgraduate programmes of health sciences.

The course outline of the AIBS course is as follows.

## Course Outline of AIBS

SEMESTER I	SEMESTER II
<b>Applied Integrated Basic Sciences (AIBS)</b> CB 111: General Concept CB 112: Musculoskeletal System and Integumentary System CB 113: Hematopoietic System CB 114: Respiratory System CB 115: Cardiovascular System <b>Workshop</b> <ul style="list-style-type: none"> <li>● Well being</li> <li>● Learning Skills</li> <li>● IT for healthcare professionals</li> <li>● Financial Literacy</li> <li>● AETCOM</li> </ul>	<b>Applied Integrated Basic Sciences (AIBS)</b> CB 121: Gastrointestinal System CB 122: Hepatobiliary System CB 123: Endocrine System CB 124: Urinary System CB 125: Reproductive System CB 126: Nervous System <b>Common Course</b> CR 122: Research and Biostatistics CP 122: Professional Development

## **Course Outline of Professional Development in Health Care**

### **Professional Development in Health Care**

The student is expected to achieve the following learning outcomes.

1. Define key elements of professionalism, attitude, medical humanities, ethics and communication skills.
2. To explain professional and ethically appropriate communication skills in various real-life scenarios.
3. To illustrate the cultural and social diversity in the health care system.

Facilitators will conduct the classes on professionalism, ethics, communication skills and medical humanities. The classes will be in the form of lecture, audio-visual, field visits, facilitator-student interaction and student-student interaction. Facilitators will be present to assist inquiries, research and active discussion sessions.

## **2. Other Academic Programs**

The department is providing Professionalism in Health Care classes. The course is designed to prepare students to work as a professional in the future in a specialty of health sciences or work efficiently in an interdisciplinary healthcare team. The course emphasizes on the importance of professionalism.

The Department of Clinical Physiology and Yogic Sciences will also provide teaching support for elective yogic modules.



## **Madan Bhandari Academy of Health Sciences**

### **Department of Clinical Physiology and Yogic Sciences**

#### **Infrastructure**

The Department of Clinical Physiology and Yogic Sciences of MBAHS has the provision of the following working space for teaching and laboratory services.

##### **1. Laboratory**

The Department of Clinical Physiology and Yogic Sciences is located in Gauritar. The total area of the laboratory is 18 square meters. The teaching laboratory has the following laboratory areas dedicated for each specialty of Clinical Physiology and Yogic Sciences.

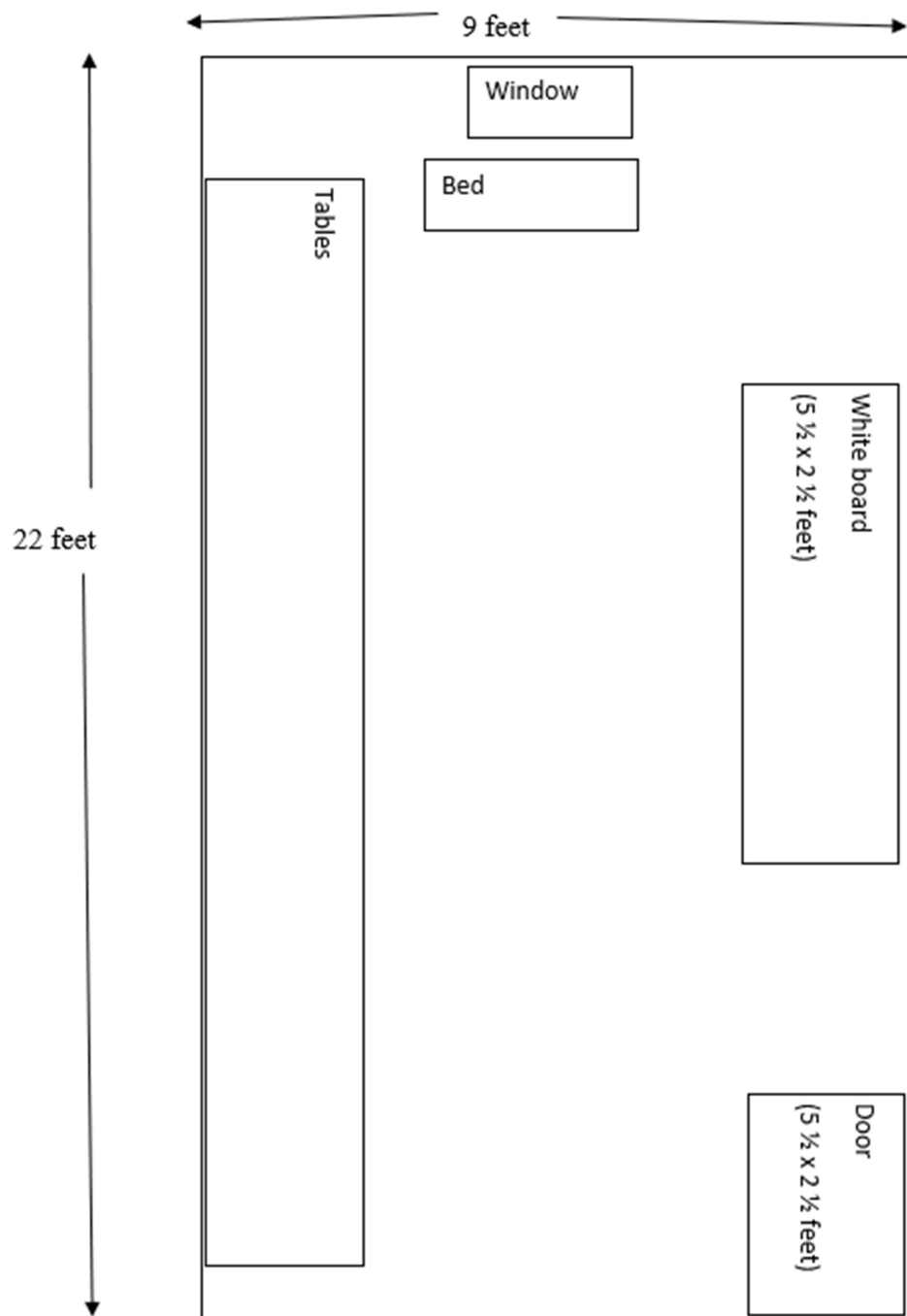
<b>SN</b>	<b>Lab Areas</b>	<b>Dimensions (m)</b>	<b>Total Area (m<sup>2</sup>)</b>	<b>Capacity</b>	<b>Remarks</b>
1	Clinical Physiology and Yogic Sciences	6.7 x 2.7	18	20	

##### **2. Teaching and Faculty Area**

The teaching and faculty area of the Department of Clinical Physiology is located in Gauritar. The total area of the teaching, faculty area and program director room is .... square meters. The teaching and faculty area has the following designated room and areas.

<b>SN</b>	<b>Areas</b>	<b>Dimensions (m)</b>	<b>Total Area (m<sup>2</sup>)</b>	<b>Capacity</b>	<b>Remarks</b>
1	Hall 1			80	
2	Hall 2			40	
2	Faculty Room			2	

The master plans of the aforementioned laboratories, areas, and rooms are as follows.



Labex of Clinical Physiology and Yogic Science

**Madan Bhandari Academy of Health Sciences**  
**Department of Clinical Physiology and Yogic Sciences**

**Equipment and Item List**

**1. Department of Clinical Physiology and Yogic Sciences Laboratory**

<b>Items</b>	<b>Quantity</b>	<b>Remarks</b>
<b>1. Stools</b>	<b>25</b>	
<b>2. Posters</b>	<b>10</b>	
<b>3. White Board</b>	<b>1</b>	
<b>4. Table (Desk)</b>	<b>1</b>	
<b>5. Chair</b>	<b>2</b>	
<b>6. Bed</b>	<b>2</b>	
<b>7. Fridge</b>	<b>1</b>	
<b>8. Hand wash soap</b>	<b>1</b>	
<b>9. Mattress</b>	<b>2</b>	
<b>10. Pillow</b>	<b>2</b>	
<b>11. Pillow covers</b>	<b>2</b>	
<b>12. Bed sheets</b>	<b>4</b>	
<b>13. Markers</b>	<b>3</b>	
<b>14. Dusters</b>	<b>1</b>	
<b>15. Dust bin for sharps</b>	<b>1</b>	
<b>16. Dust bin</b>	<b>3</b>	

<b>17. Towel</b>	<b>3</b>	
<b>18. Snellen Chart</b>	<b>5</b>	
<b>19. Knee hammer (Reflex)</b>	<b>25</b>	
<b>20. Tuning fork (128 hz)</b>	<b>10</b>	
<b>21. Tuning Fork (512 hz)</b>	<b>10</b>	
<b>22. Clove oil</b>	<b>2bottle</b>	
<b>23. Jaeger's Chart</b>	<b>10</b>	
<b>24. Lister's Perimeter</b>	<b>1</b>	
<b>25. Ishihara Chart</b>	<b>10</b>	
<b>26. Measuring Tape</b>	<b>5</b>	
<b>27. Microscope</b>	<b>25</b>	
<b>28. Glass slides</b>	<b>2 boxes</b>	
<b>29. Lancets</b>	<b>2 boxes</b>	
<b>30. Spirit</b>	<b>2 bottles</b>	
<b>31. Sahli's Haemoglobinometer</b>	<b>25</b>	
<b>32. Hemocytometer</b>	<b>25</b>	
<b>33. Anti-sera</b>	<b>4</b>	
<b>34. Cotton</b>	<b>2 bundles</b>	
<b>35. Sphygmomanometer</b>	<b>25</b>	

<b>36. Stethoscope</b>	<b>25</b>	
<b>37. Rack</b>	<b>2</b>	
<b>38. Thermometer</b>	<b>4</b>	
<b>39. Mosso's ergometer</b>	<b>1</b>	
<b>40. Hand Dynamometer</b>	<b>1</b>	
<b>41. ECG Machine</b>	<b>1</b>	
<b>42. Student's Spirometer</b>	<b>2</b>	
<b>43. Automated Spirometer</b>	<b>1</b>	
<b>44. EEG machine</b>	<b>1</b>	
<b>45. Fire extinguisher</b>	<b>1</b>	
<b>46. Desktop</b>	<b>2</b>	

**Madan Bhandari Academy of Health Sciences**

**Department of Clinical Physiology and Yogic Sciences**

**Introduction of Faculty Members**

The following faculty members have been recruited in the Department of Clinical Physiology and Yogic Sciences by MBAHS for running the initial phase of the AIBS course in bachelor course of allied health sciences.

SN	Name	Subject	Qualification	License No.	Academic Rank with Date of Verification	Date of joining MBAHS
1	Dr. Pratiksha Khadka	Clinical Physiology	BDS, MD Clinical Physiology	NMC:12038	Lecturer (2079/05/01)	2079/05/01
2	Dr. Sanyukta Gurung	Clinical Physiology	MBBS MD Clinical Physiology	NMC: 16791	Lecturer (2079/05/30)	(2079/03/19)

#### Faculty Members

**Dr. Pratiksha Khadka**



Dr. Pratiksha Khadka has a Bachelor's degree in dental surgery from Dhaka University, in 2011. She has completed her residency in MD Physiology at Kathmandu University School Of Medical Sciences, Dhulikhel, Kavre. She has more than three years of experience in academics, research, and scientific presentations. Currently, she is working at Madan Bhandari Academy of Health Sciences. She is keenly interested in yogic science who believes “Yoga as a science, the science of well-being, a science of youthfulness, a science of integrating body, mind, and soul.

**Dr. Sanyukta Gurung**



Dr. Sanyukta Gurung is working as a lecturer in Madan Bhandari Academy of Health and Sciences. He completed his MBBS from People's Friendship University, Russia and his MD in Clinical Physiology from Maharajgunj Medical Campus. In addition to physiology he has also been conducting classes on professional development in health care. He is an enthusiastic researcher and is very interested in high altitude physiology, sports physiology and assessment tools.



## **Madan Bhandari Academy of Health Sciences**

### **Department of Clinical Physiology and Yogic Sciences**

#### **Future Plans**

#### **Academic Programmes**

The department of Clinical Physiology and Yogic Sciences plans to expand its current pool of faculty members on an annual basis for full-fledged operation of its AIBS course and elective yogic science course.

The department of Clinical Physiology and Yogic Sciences also plans to offers the following Bachelor, Postgraduate and PhD level programme in future

- A. Bachelors of Respiratory Technology
- B. Bachelors of Cardiovascular Technology
- C. MD in Clinical Physiology
- D. PhD

#### **Others**

A skill lab is also planned by the Department of Clinical Physiology and Yogic Sciences.

## SimLab

S N	Equipment	Need	Status	Remarks
<b>Required for teaching basic life support (BLS)</b>				
1	CPR manikin – Adult	12	1	For teaching adult BLS
2	CPR manikin – Infant	12	1	For teaching infant BLS
3	CPR feedback device	12	NA	For monitoring of high quality CPR
4	Face mask – Adult (Size matching the adult CPR manikins mentioned in # 1)	12	NA	For teaching adult BLS
5	Face mask – Infant (Size matching the infant CPR manikins mentioned in # 2)	12	NA	For teaching infant BLS
6	Ambu bag – Adult	12	NA	For teaching adult BLS
7	Ambu bag – Infant	12	NA	For teaching infant BLS
8	Automated external defibrillator with adult pads	4	NA	For teaching adult BLS
9	Automated external defibrillator with child pads and dose attenuator	4	NA	For teaching infant BLS
<b>Required for teaching advanced cardiac life support (ACLS)</b>				
10	Full-body defibrillation-capable intubation-capable and venepuncture-capable manikin	2	NA	For teaching ACLS
11	Height adjustable patient bed with mattress and bed sheets (extra bed sheets required)	2	NA	For simulation of ICU/ER environment
12	IV stand	2	NA	For simulation of ICU/ER environment
13	Examination light with stand	2	NA	For simulation of ICU/ER environment
14	CPR board	2	NA	For teaching high quality CPR in ACLS
15	Manual defibrillator with monitor	2	NA	For teaching ACLS
16	ECG rhythm simulator with leads (must be all to simulate all life-threatening arrhythmias and normal rhythms of adults, children and infants)	2	NA	For teaching ACLS
17	Emergency drug cart	2	NA	For teaching ACLS
18	Set of emergency drugs with demo vials	2	NA	For teaching ACLS
19	IV Set	20	NA	For teaching ACLS
20	IV Cannula	20	NA	For teaching ACLS
21	Butterfly needle	20	NA	For teaching ACLS
22	Three-way stop cock	20	NA	For teaching ACLS
23	Sharps container – Needle	6	NA	For teaching infection

	breaker			prevention and control in critical care
24	Heart rate and oxygen saturation simulator	2	NA	For teaching ACLS
25	Capnography simulator	1	NA	For teaching ACLS
26	Nasal cannula for oxygen delivery	5	NA	For teaching oxygen delivery in ACLS
27	Face mask for oxygen delivery	5	NA	For teaching oxygen delivery in ACLS
28	Non-rebreather mask for oxygen delivery	5	NA	For teaching oxygen delivery in ACLS
29	Venturi mask for oxygen delivery	5	NA	For teaching oxygen delivery in ACLS
30	Oxygen concentrator	2	NA	For teaching oxygen delivery in ACLS
31	Simulated oxygen cylinder	2	NA	For teaching oxygen delivery in ACLS
<b>Required for teaching airway management</b>				
32	Airway manikin – Adult	3	NA	For teaching airway management in adult
33	Airway manikin – Child	3	NA	For teaching airway management in child
34	Airway manikin – Infant	3	NA	For teaching airway management in infant
35	Guedel's oropharyngeal airway (sizes matching the airway manikins mentioned in # 17, 18, and 19)	9	NA	For teaching airway management
36	Nasopharyngeal airway (sizes matching the airway manikins mentioned in # 17, 18, and 19)	9	NA	For teaching airway management
37	Laryngeal mask airway (sizes matching the airway manikins mentioned in # 17, 18, and 19)	18	NA	For teaching airway management
38	Endotracheal tube – Set of all sizes with stylet	6	NA	For teaching airway management
39	Combitube – 37 F and 41 F	2	NA	For teaching airway management
40	Lubricant bottle with sprayer – compatible with airway manikins mentioned in # 17, 18, and 19	6	NA	For teaching airway management
41	Laryngoscope – Macintosh - Set of all sizes	3	NA	For teaching airway management
42	Laryngoscope – Miller - Set of all sizes	3	NA	For teaching airway management
43	Suction machine	2	NA	For teaching airway management
44	Airway model that shows pharynx, larynx, epiglottis and vallecula from side	1	NA	For teaching airway management
<b>For teaching basic intervention skills</b>				
45	IV arm	5	NA	For teaching venepuncture

46	Arterial puncture arm	5	NA	For teaching arterial puncture
47	Manikin for intraosseous injection	2	NA	For teaching intraosseous puncture
48	Intraosseous injection needle set	2	NA	For teaching intraosseous puncture
49	Intraosseous injection gun with needle	1	NA	For teaching intraosseous puncture
50	Surgical wound simulator	10	NA	For teaching suturing skills
51	Suture set	10	NA	For teaching suturing skills
52	Surgical wound care tray	10	NA	For teaching suturing skills
53	Medical cart	5	NA	For teaching organization of equipment and items for intervention
54	Cervical spine collar	2	NA	For teaching cervical spine immobilization
55	Limb splints (set of upper limb and lower limb)	4	NA	For teaching splinting of extremities
<b>For teaching infection prevention and control</b>				
56	UV hand hygiene glow system	1	NA	For teaching hand washing
57	Washable training coverall – PPE	10	NA	For teaching donning and doffing of coverall – PPE
58	Washable training gown – PPE	10	NA	For teaching donning and doffing of gown – PPE
59	Gun boots	10	NA	For teaching infection prevention and control
60	Color-coded waste baskets (set)	2	NA	For teaching waste management
61	Buckets	10	NA	For teaching preparation of disinfectants
62	Body bags	5	NA	For teaching dead body management
63	Adult life-size dolls	5	NA	For teaching dead body management
64	Washable goggles	10	NA	For teaching infection prevention and control
<b>Required for teaching clinical assessment</b>				
65	Manikin for teaching normal and abnormal heart and lung sounds with all required accessories	2	NA	For teaching cardiac and respiratory examinations
66	Pelvic manikin for per anal examination	2	NA	For teaching prostate, anal, and rectal examinations
67	Manikin for teaching breast examination with different	2	NA	For breast examination

	consistencies of breast mass			
68	Ear manikin for teaching otoscopy with different clinical conditions that can be simulated in the manikin	2	NA	For teaching ear examination
69	Head manikin for teaching ophthalmoscopy skills with different clinical conditions that can be simulated in the manikin	2	NA	For teaching eye examination
70	Male pelvic manikin for testicular examination with different clinical conditions that can be simulated in the manikin	2	NA	For teaching testicular examination
<b>Required for teaching special interventions</b>				
71	Male pelvic manikin for urinary catheterization	2	NA	For teaching catheterization
72	Female pelvic manikin for urinary catheterization	2	NA	For teaching catheterization
73	Manikin for lumbar puncture and spinal block	2	NA	For teaching lumbar puncture and spinal block
74	Manikin for teaching digital block and local anesthesia	2	NA	For teaching digital block and local anesthesia
<b>Required for delivery conduction</b>				
75	Pelvis with baby, placenta, and umbilical cord	2	NA	For teaching basics of labour
76	Full-body pregnant female with fetus and capable for manual 'push' delivery	2	NA	For teaching basics of labour
77	Post-partum hemorrhage simulator device	2	NA	For teaching management of PPH
78	Delivery and labour table	2	NA	For teaching basics of labour
79	Cardiotocography (CTG) simulator	1	NA	For teaching basics of labour

SimLab requires the following furniture and fixtures.

S N	Furniture and fixtures	Quantity	Status	Remarks
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1	Simple demonstration table	12	NA	For demonstration purposes
2	Custom-made closed cabinets	12	NA	For storing manikins
3	Office table	5	NA	For office purposes
4	Office chairs	5	NA	For office purposes
5	Student chairs with hand rest	80	NA	For teaching purposes
6	Floor mat	15	NA	For teaching BLS

SimLab requires the following audiovisual aids and electrical items.

<b>S N</b>	<b>AV aids and electrical items</b>	<b>Quantity</b>	<b>Status</b>	<b>Remarks</b>
1	LED TV – 50 inch	1	NA	For video demonstration
2	Laptop	2	NA	For video demonstration
3	Audiovisual cable set	1	NA	For video demonstration
4	Slide changer and pointer	1	NA	For video demonstration
5	LCD Projector	1	NA	For video demonstration
6	Extension cords	10	NA	For video demonstration
7	Speaker system	1	NA	For video demonstration