



# **Savitribai Phule Pune University**

(formerly University of Pune)

## **Department of Physical Education**

Under the

## **Faculty of Inter-disciplinary Studies**

### **Syllabus for**

### **Diploma in Mountaineering & Allied Sports**

### **(D.M.A.S.)**

### **Semester and Credit System**

(Academic Year 2021–2022)

## **Diploma in Mountaineering & Allied Sports (D.M.A.S.)**

### **Semester & Credit System**

#### **Structure of the course**

##### **Objectives :**

- ❖ To incorporate experiential education through outdoor sports as per the **New Education Policy 2020** by MHRD, Gov. of India.
- ❖ To develop confident, healthy & courageous youth for nation, through safe & systematic training & learning platform for enthusiastic and energetic students.
- ❖ To enable to understand the disciplinary content knowledge, application of content knowledge to further teaching the contents.
- ❖ To make students accustomed to the world of global adventure sports Sector.
- ❖ To introduce potential employable opportunities in Maharashtra, India, and abroad in the adventure sector

##### **Admission requirements :**

- ❖ Minimum XII Std. or equivalent, passed from Govt. Board.
- ❖ Age Limit :- 18 to 60 Years (Both inclusive)
- ❖ Medical Test :- Candidates should be medically fit and sound provided other conditions of admissions are fulfilled.
- ❖ A candidate has to fulfill all the other conditions required in the admission procedure. Admission will be given based on merit based on regulations of state government and Savitribai Phule Pune University.

##### **Intake Capacity of the Program :**

The Intake capacity of the program will be 40 students per batch.

##### **Duration of the Program :**

The duration of the Diploma program will be of one academic year divided in Two semesters. However, in case of failures, the student can complete the program in the 3<sup>rd</sup> and 4<sup>th</sup> semester, whichever is applicable.

## TUITION FEE :-

Category	Amount
Tuition Fee for Indian Students	Rs. 90,000/- (Rupees Ninety thousand only)
Tuition Fee for Foreign Students	Rs. 2,70,000/- (Rupees Two lakh Seventy thousand Only)

# Note :-

- ❖ Other fees as per University rules and All other Government / University Rules will be applicable.

## General Instructions :

1. The **Diploma in Mountaineering & Allied Sports (D.M.A.S.)** consists of **Two semesters** spread over **one academic year and 36 credits (18 credits / semester)**.
2. A student must successfully complete 36 credits (6x3 = 18 credits per semester) in a minimum of one year.
3. One credit will be equivalent to 15 clock hours of student-teacher contact per semester.
4. Details of the theoretical and practical components of each semester are given in the structure of the program.
5. Internal evaluation will follow Continuous Comprehensive Evaluation procedures. Internal evaluation should be done on every credit of each course or minimum two per course as decided by the teacher concerned.

## Rules & Regulations

The **Diploma in Mountaineering & Allied Sports (D.M.A.S.)** will be awarded to a student who completes a total of 36 credits (6 x 3 = 18 credits per semester) in a minimum of one year taking 06 courses per Semester.

### Each course will have

1. 50 % of marks as semester end examination
2. 50 % marks for internal assessment

Each core unit will have an Internal (continues) assessment of 50 % of marks and a teacher may select a minimum of two of the following procedures:

- Written Test
  - Term Paper
  - Mid Term Test
  - Journal / Lecture / Library Notes
  - Seminar Presentation
  - Short Quizzes
  - Assignments
  - Field Work
- 
- ❖ To pass a student shall have to get minimum aggregate 30% marks in each head of passing (i.e. Internal assessment and semester end examination) and minimum aggregate 40% marks in each course.
  - ❖ Revaluation of the semester end exam answer scripts but not of Internal assessments paper according to Ordinance No. 134 A & B.
  - ❖ Internal assessment answer book may be shown to the students Concerned but not the semester - end examination answer scripts.
  - ❖ While marks will be given for all examinations, they will be converted into grades. The Semester end and final grade sheets and transcripts will have only grades and grade-points average.
  - ❖ To pass a student shall have to get minimum aggregate 40% marks (E and above on grade point scale) in each course.
  - ❖ The system of evaluation will be as follows: Each assignment/ test will be evaluated in terms of marks. The marks for separate assignment and the final (semester end) examination will be added together and converted into a grade

and later grade point average. Results will be declared for each semester and the final examination will give total marks, grades, grade point average.

<u>Marks</u>		<u>Grade</u>		
80 to	100	O :	Outstanding	10
70 to	79	A+ :	Excellent	09
60 to	69	A :	Very Good	08
55 to	59	B+ :	Good	07
50 to	54	B :	Above Average	06
45 to	49	C :	Average	05
40 to	44	P :	Pass	04
00 to	39	F :	Fail	00
--		Ab :	Absent	00

The formula for conversion of Grade point average (GPA) into the final grade

09.00	-	10.00	-	O
08.50	-	08.99	-	A+
07.50	-	08.49	-	A
06.50	-	07.49	-	B+
05.50	-	06.49	-	B
04.25	-	05.49	-	C
04.00	-	04.24	-	P
00.00	-	03..99	-	F

$$\text{GPA} = \frac{\text{Total Amt. Of Grade Points Earned X Credits hrs. for each course}}{\text{Total Credit Hours}}$$

- ❖ If a student misses an internal assessment examination, he/she will be given second chance with permission of the teacher concerned.
- ❖ Students who have failed and who have been absent for the semester end exam may reappear at the next semester-end exam. Their internal marks will not change.

❖ The description for each of the grades will be as follows:

<b><u>Grades</u></b>	<b><u>Proposed Norms</u></b>
<b>O : Outstanding</b>	<b>Excellent Analysis of the topic, (80% and above)</b> Accurate knowledge of the primary material, wide range of reading, logical development of ideas, originality in approaching the subject, neat and systematic organization of content, elegant and lucid style.
<b>A+ : Excellent</b>	<b>Excellent Analysis of the topic, (70 to 79%)</b> Accurate knowledge of the primary material, acquaintance with seminal publications, logical development of ideas, Neat and systematic organization of content, effective and clear expression
<b>A : Very Good</b>	<b>Good analysis and treatment of the topic (60 to 69%)</b> Almost Accurate knowledge of the primary material, acquaintance with seminal publication, logical development of ideas, fair and systematic organization of content, effective and clear expression.
<b>B+ : Good</b>	<b>Good analysis and treatment of the topic (55 to 59%)</b> Basic knowledge of the primary material, logical development of ideas, neat and systematic organization of content, effective and clear expression.
<b>B : Above Average</b>	<b>Some important points covered (50 to 54%)</b> Basic knowledge of the primary material, logical development of ideas, neat and systematic organization of content, good language, or expression.
<b>C : Average</b>	<b>Some points discussed (45 to 49%)</b> Basic knowledge of the primary material, some organization, acceptable language, or expression.
<b>P : Pass</b>	<b>Any two of the above (40 to 44%)</b>
<b>F : Fail</b>	<b>None of the above (00 to 39%)</b>

## **Academic integrity and Plagiarism**

It is the Department task to encourage ethical scholarship and to inform students and staff about the institutional standards of academic behavior expected of them in learning, teaching and research. Students have a responsibility to maintain the highest standards of academic integrity in their work. Students must not cheat in examination or other forms of assessment and must ensure they do not plagiaries.

The Department/Institute has adopted the following definition of Plagiarism:

Plagiarism is the act of misrepresenting as one's original work, the ideas, interpretations, words of creative works of another. These include published and unpublished documents, designs, music, sound, image, photographs, computer codes and ideas gained through working in a group. These ideas, interpretations, words, or works may be found in print and / or electronic media.

The following are the examples of plagiarism where appropriate acknowledgement or referencing of the author or source does not occur:

- ❖ Direct copying of paragraphs, sentences, a single sentence, or significant part of a sentence.
- ❖ Direct copying of paragraphs, sentences, a single sentence, or significant part of a sentence with an end reference but without quotation marks around the copied text.
- ❖ Copying ideas, concepts, research results, computer codes, statistical tables, designs, images, sounds or text or any combination of these.
- ❖ Paraphrasing, summarization or simply rearranging another person's words, ideas, etc. without changing the basic structure and/or meaning of the text.
- ❖ Offering an idea or interpretation that is not one's own without identifying whose idea or interpretations it is.
- ❖ A 'cut and paste' of statements from multiple sources.
- ❖ Presenting as independent, work done in collaboration with others.
- ❖ Copying or adapting another student's original work into a submitted assessment item.

## STRUCTURE OF DIPLOMA IN MOUNTAINEERING AND ALLIED SPORTS

### ❖ Semester I

Sr. No.	Subject code	Subject Name	Type	Credit
1	DMAS-11	Basic Skills & Technical Knowledge - I	Theory	3
2	DMAS-12	Foundation of Human Performance and Emergency Care - I	Theory	3
3	DMAS-13	Introduction to Soft Skill, Life Skill and Allied Mountaineering - I	Theory	3
4	DMAS-14	Basic Skills & Technical Knowledge - II	Practical	3
5	DMAS-15	Foundation of Human Performance and Emergency Care - II	Practical	3
6	DMAS-16	Introduction to Soft Skill, Life Skill and Allied Mountaineering - II	Practical	3

### ❖ Semester II

Sr. No.	Subject code	Subject Name	Type	Credit
1	DMAS-21	Basic Skills & Technical Knowledge - III	Theory	3
2	DMAS-22	Foundation of Human Performance and Emergency Care - III	Theory	3
3	DMAS-23	Introduction to Soft Skill, Life Skill and Allied Mountaineering - III	Theory	3
4	DMAS-24	Basic Skills & Technical Knowledge - IV	Practical	3
5	DMAS-25	Foundation of Human Performance and Emergency Care - IV	Practical	3
6	DMAS-26	Introduction to Soft Skill, Life Skill and Allied Mountaineering - IV	Practical	3



# Syllabus

## Semester I

### DMAS-11 Basic Skills & Technical Knowledge – I

Credit	Topics	Content
1	Knots & Equipment	<ul style="list-style-type: none"> <li>• Know the types of knots</li> <li>• Methods of tying knots</li> <li>• Introduction to personal safety gears</li> <li>• Trekking &amp; Rock-Climbing gears</li> <li>• Equipment standards, Norms, &amp; governing body</li> </ul>
	Outdoor Camping, Backpacking	<ul style="list-style-type: none"> <li>• Basics of hiking, &amp; trekking</li> <li>• Backpacking essentials</li> <li>• Types of tent</li> <li>• Parts of tent</li> <li>• Precautions and preparation for tent pitching</li> <li>• Science in packing a backpack</li> <li>• Types, parts and usage</li> <li>• Science of Outdoor Clothing</li> <li>• Types of Clothing</li> <li>• Advantage &amp; Disadvantage of clothing layers</li> </ul>
2	Rock Climbing, Sport Climbing	<ul style="list-style-type: none"> <li>• Types of hand &amp; foot holds</li> <li>• Three-point technique</li> <li>• Learn to harness and racking</li> <li>• What is belaying and its importance</li> <li>• Introduction to Lead Climbing</li> <li>• Introduction to the world of Sport Climbing</li> <li>• Rock Climbing - Top Rope Climbing &amp; Bouldering</li> </ul>
3	Rappelling	<ul style="list-style-type: none"> <li>• Purpose of Rappelling</li> <li>• Where and how to perform its safely</li> <li>• Equipment for rappelling</li> </ul>
	Jumaring	<ul style="list-style-type: none"> <li>• Purpose of Jumaring</li> <li>• Jumar and its features</li> <li>• Where and how to perform jumaring safely</li> <li>• Equipment for jumaring</li> </ul>
	Navigation	<ul style="list-style-type: none"> <li>• Various types of Maps &amp; their features</li> <li>• Topographic Map Making</li> <li>• Understanding contour lines</li> </ul>

## DMAS-12 Foundation of Human Performance and Emergency Care - I

Credit	Topics	Content
1	First Aid	<ul style="list-style-type: none"> <li>• Role of First Aid Responder</li> <li>• ABC of First Aid</li> <li>• Types of Injuries</li> <li>• Types of Illness</li> <li>• Medical Challenges in Sahyadri Outdoors</li> <li>• Bites</li> <li>• Dehydration</li> </ul>
2	Disaster Management	<ul style="list-style-type: none"> <li>• Introduction to Anchoring Systems</li> <li>• Safety equipment and regular checking</li> <li>• Subjective and Objective Hazards</li> <li>• Assessment of Hazards</li> </ul>
3	Human Physiology	<ul style="list-style-type: none"> <li>• Introduction to Homeostasis</li> <li>• Overview of Human Organ Systems</li> <li>• Energy Systems</li> <li>• Muscles types</li> <li>• Insights into CV system</li> <li>• Respiratory System</li> <li>• Endocrine System</li> <li>• ANS – Sympathetic &amp; Parasympathetic systems</li> <li>• Role of ANS in performance enhancement</li> </ul>
	Fitness Training	<ul style="list-style-type: none"> <li>• Strength &amp; Conditioning</li> <li>• Methodology of endurance &amp; Strength training</li> <li>• Principles of systematic fitness training</li> <li>• Introductory Sports biomechanics</li> </ul>
	Nutrition	<ul style="list-style-type: none"> <li>• Concept of sport Nutrition</li> <li>• Introduction to Macro and Micro nutrients</li> <li>• Digestion, Absorption, and Metabolism</li> </ul>

**DMAS-13 Introduction to Soft Skill, Life Skill and Allied  
Mountaineering - I**

<b>Credit</b>	<b>Topics</b>	<b>Content</b>
1	Communication	<ul style="list-style-type: none"> <li>• Articulation of thoughts &amp; speech</li> <li>• Effective presentation through experiencesharing ( articles, ppt, short film blogging/vlogging)</li> </ul>
	Effective Planning & Execution	<ul style="list-style-type: none"> <li>• Learn to plan outdoor activity with every details</li> <li>• Reconnaissance of the destination</li> <li>• Logistical challenges during planning</li> <li>• Practical difficulties during execution</li> <li>• Debriefing and report making of the event</li> </ul>
2	Leave No Trace	<ul style="list-style-type: none"> <li>• Learn 7 important environmental ethics of outdoors</li> </ul>
	Sahyadri Biodiversity	<ul style="list-style-type: none"> <li>• Flora &amp; Fauna in Sahaydri</li> <li>• Rivers, dams</li> <li>• Cultural diversity in Sahyadri</li> </ul>
	Mountaineering at global level	<ul style="list-style-type: none"> <li>• Other Mountain ranges of world</li> <li>• Evolution of Himalayas</li> </ul>
	Mountain Terminology	<ul style="list-style-type: none"> <li>• Identify &amp; Understand Sahaydri Mountain Terminology</li> </ul>
	Introduction to Sahyadri	<ul style="list-style-type: none"> <li>• Evolution of Sahyadri</li> <li>• Formation of Basalt Rock</li> <li>• Forts - Historical Perspective</li> <li>• Sculptural splendor of Sahyadri</li> </ul>
3	Adventure Sports at Global level	<ul style="list-style-type: none"> <li>• Introduction to other adventure sports life mountain biking, adventure racing, ultra marathons, mountain marathons, etc.</li> </ul>
	Administration and Legal aspect of Mountaineering and adventure	<ul style="list-style-type: none"> <li>• Legal aspect, government regulations</li> <li>• Administration of Adventure Activities</li> <li>• International standards of group safety.</li> </ul>
	Career guidance	<ul style="list-style-type: none"> <li>• Career Opportunities in Mountaineering &amp; Adventure sport Sector</li> </ul>

## DMAS-14 Basic Skills & Technical Knowledge - II

Credit	Topics	Content
1	Knots & Equipment	<ul style="list-style-type: none"> <li>• Demonstrations: Overhand on the bight, figure 8 on the bight, Clove Hitch, Reefknot</li> <li>• Rope Coil – Butterfly, Casualty</li> <li>• Introduction to personal safety gears</li> <li>• Trekking &amp; Rock-Climbing gears</li> <li>• Application, care &amp; maintenance of gear</li> </ul>
	Outdoor Camping, Backpacking	<ul style="list-style-type: none"> <li>• Learn to pitch tent</li> <li>• Learn how to pack your backpack efficiently</li> <li>• Backpack gear</li> </ul>
2	Rock Climbing, Sport Climbing	<ul style="list-style-type: none"> <li>• Bouldering, indoor sport climbing</li> <li>• Types of hand &amp; foot holds</li> <li>• Three-point technique</li> <li>• Top Rope Climbing</li> <li>• Techniques in Sport Climbing</li> </ul>
	Rappelling & Jumaring	<ul style="list-style-type: none"> <li>• Perform and master the art of rappelling and jumaring</li> <li>• Learn various techniques of rappelling &amp; jumaring in various scenarios</li> </ul>
	Advance Sports Climbing	<ul style="list-style-type: none"> <li>• Introduction to various systems and roles in sport climbing competition like route setter, judge, belayer etc.</li> </ul>
	Belaying	<ul style="list-style-type: none"> <li>• Different belay devices</li> <li>• Different belay types</li> <li>• Introduction to station belay , body belay etc.</li> </ul>
3	Outdoor Excursion	<ul style="list-style-type: none"> <li>• 2-day hike/ training in Sahyadri hills</li> <li>• 7 days trek upto 10000 ft.</li> </ul>

## DMAS-15 Foundation of Human Performance and Emergency Care - II

<b>Credit</b>	<b>Topics</b>	<b>Content</b>
1	First Aid	<ul style="list-style-type: none"><li>• Identifying the casualty</li><li>• Providing the ABC of first aid</li><li>• Immobilization skills</li><li>• Handling wounds, bites, burns</li><li>• Casualty carrying techniques</li><li>• Casualty coil making</li><li>• Treatment in illness</li><li>• Bandaging</li><li>• CPR skills</li></ul>
2	Disaster Management	<ul style="list-style-type: none"><li>• Making SERENE skilled anchor set ups</li><li>• Learn to fix rope in difficult sections</li><li>• Learn to lead a group of participants safely</li></ul>
3	Fitness Training	<ul style="list-style-type: none"><li>• Fitness Testing</li><li>• Mental Fitness Training Drills</li><li>• Physical Fitness training Techniques</li></ul>
	Outdoor Excursion	<ul style="list-style-type: none"><li>• 2-days training session in Sahyadri hills</li></ul>

**DMAS-16 Introduction to Soft Skill, Life Skill and Allied  
Mountaineering – II**

<b>Credit</b>	<b>Topics</b>	<b>Content</b>
1	Communication	<ul style="list-style-type: none"> <li>• Effective presentation through experience sharing ( articles, ppt, short film blogging/vlogging)</li> <li>• Collaborate in group activities to develop mutual trust, accountability, and team goal-oriented work</li> </ul>
	Effective Planning & Execution	<ul style="list-style-type: none"> <li>• Learn to plan outdoor activity with every details</li> <li>• Reconnaissance of the destination</li> <li>• Logistical challenges during planning</li> <li>• Practical difficulties during execution</li> <li>• Debriefing and report making of the event</li> </ul>
	Documentation	<ul style="list-style-type: none"> <li>• Critically analyze the subjects and make detailed documentation of the subject.</li> <li>• Use various tools – AV/ PPT/ Story telling to demonstrate learning</li> </ul>
2	Leave No Trace	<ul style="list-style-type: none"> <li>• Learn 7 important environmental ethics of outdoors</li> <li>• Implement them during the activities</li> <li>• Demonstrate the learnings through presentation</li> </ul>
3	Photography & Videography	<ul style="list-style-type: none"> <li>• Introductory session on outdoor photography &amp; videography</li> </ul>
	Sahaydri Biodiversity	<ul style="list-style-type: none"> <li>• Sample Collection techniques</li> <li>• Equipment for sample collection</li> </ul>
	Outdoor Excursion	<ul style="list-style-type: none"> <li>• 1-day training session in Sahyadri hills</li> </ul>

## Semester II

### DMAS-21 Basic Skills & Technical Knowledge - III

Credit	Topics	Content
1	Knots & Equipment	<ul style="list-style-type: none"><li>• Understanding Knots, hitches, bends</li><li>• Types of hitches, bends, and advance knots</li><li>• Introduction to personal safety gears in high altitude</li><li>• Application, care &amp; maintenance of gear</li><li>• Equipment standards, Norms, &amp; governing body</li><li>• Physics and science behind the mountain gears</li></ul>
	Navigation	<ul style="list-style-type: none"><li>• Navigation systems using compass</li><li>• Satellite Navigation Systems</li></ul>
2	Rock Climbing	<ul style="list-style-type: none"><li>• Fall factor</li><li>• Equipment and importance of special knots/hitches in advance climbing techniques</li><li>• Station Management</li><li>• Route Grading Systems</li></ul>
	Rappelling & Jumaring	<ul style="list-style-type: none"><li>• Perform and master the art of rappelling and jumaring</li><li>• Learn various techniques of rappelling &amp; jumaring in various scenarios</li></ul>
3	Snow Craft	<ul style="list-style-type: none"><li>• Equipment to be used in snow activities</li></ul>
	Ice Craft	<ul style="list-style-type: none"><li>• Equipment to be used in ice activities</li></ul>
	Glacier walking	<ul style="list-style-type: none"><li>• Snow Cycles</li><li>• Understanding crevasses</li></ul>

## DMAS-22 Foundation of Human Performance and Emergency Care – III

Credit	Topics	Content
1	First Aid	<ul style="list-style-type: none"> <li>• High Altitude First Aid Skills</li> <li>• Medical challenges at high altitude</li> </ul>
2	Rescue Techniques	<ul style="list-style-type: none"> <li>• Introduction to MMRCC</li> <li>• Role and active work of MMRCC</li> <li>• Case studies of special rescue operations</li> <li>• Communication skills for timely operations</li> <li>• Introduction to HAM &amp; its application</li> <li>• Survival skills in cold conditions</li> </ul>
3	High Altitude & Human Physiology	<ul style="list-style-type: none"> <li>• Effect of Low Oxygen air on various organ system</li> <li>• Food and hydration habits</li> <li>• Effect on sleep cycle</li> </ul>
	Nutrition	<ul style="list-style-type: none"> <li>• Energy requirement at life stages and specific requirement for athletes</li> <li>• Calorific value of food items</li> <li>• Role of water &amp; fluids</li> <li>• Functional foods</li> </ul>
	Physical Fitness Training	<ul style="list-style-type: none"> <li>• Fatigue and the responsible factors</li> <li>• Assessment of fitness training</li> <li>• Managing the training effects</li> <li>• Planning your fitness</li> </ul>



**DMAS-23 Introduction to Soft Skill, Life Skill and Allied  
Mountaineering - III**

<b>Credit</b>	<b>Topics</b>	<b>Content</b>
1	Self Awareness	<ul style="list-style-type: none"> <li>• Critical thinking &amp; problem-solving abilities through various situational experiential learning</li> <li>• Identify strength &amp; weakness of self</li> </ul>
	Soft Skills	<ul style="list-style-type: none"> <li>• Learn to improve your Preparation and anticipation in your work to enhance your performance</li> </ul>
	Personality Development	<ul style="list-style-type: none"> <li>• Leadership skills</li> <li>• Team Management and handling conflicts</li> <li>• Learning to respect each other and developing sense of empathy towards groupmates and nature</li> </ul>
2	Glaciology	<ul style="list-style-type: none"> <li>• Study of mountain glaciers across the globe</li> <li>• Understanding Siachen – from scientific and political angles</li> </ul>
	Himalaya Biodiversity	<ul style="list-style-type: none"> <li>• Flora &amp; Fauna in Himalaya</li> <li>• Glaciers &amp; rivers</li> <li>• Cultural diversity in Himalaya</li> </ul>
	Glorious Mountaineering	<ul style="list-style-type: none"> <li>• Key milestones internationally</li> <li>• Key milestones by India</li> <li>• Understanding Sherpa Community</li> </ul>
	World Beyond 8000 m	<ul style="list-style-type: none"> <li>• Death zone and safe mountaineering</li> <li>• Case studies of successful ascents &amp; failed attempts</li> </ul>
3	Expedition Planning	<ul style="list-style-type: none"> <li>• Eligibility of leader &amp; Members</li> <li>• Budget planning</li> <li>• Resource planning</li> <li>• Report making</li> </ul>
	Short Internship in adventure programme	<ul style="list-style-type: none"> <li>• Serve in 2 one day hiking events</li> <li>• Learn practically the nitty-gritties of safe &amp; successful adventure programme execution</li> </ul>

## DMAS-24 Basic Skills & Technical Knowledge – IV

Credit	Topics	Content
1	Knots & Equipment	<ul style="list-style-type: none"> <li>• Tie in knot for lead climbing</li> <li>• Rope Coil – Climber’s coil</li> </ul>
	Navigation	<ul style="list-style-type: none"> <li>• Use of compass &amp; Maps</li> <li>• Bearing in field and on map</li> <li>• Altimeter, barometer</li> <li>• Navigation systems across the world</li> </ul>
	Lead Climbing	<ul style="list-style-type: none"> <li>• Learn to lead on sport routes</li> <li>• Introduction to lead climbing on trad routes</li> <li>• Lead Belay</li> <li>• Multipitch Climbing</li> <li>• Multipitch Rappelling &amp; Jumaring</li> </ul>
	Rappelling & Jumaring	<ul style="list-style-type: none"> <li>• Advance Skills of Rappelling</li> <li>• Jumaring on overhang section</li> </ul>
	Snow Craft	<ul style="list-style-type: none"> <li>• Equipment to be used in snow activities</li> <li>• Techniques of ascent &amp; descent</li> </ul>
	Ice Craft	<ul style="list-style-type: none"> <li>• Equipment to be used in ice activities</li> <li>• Techniques of ascent &amp; descent</li> <li>• Introductory Lead Climbing on ice</li> </ul>
	Glacier walking	<ul style="list-style-type: none"> <li>• Rope up and team walk in glacier</li> <li>• Learning to negotiate crevasses</li> </ul>
	Outdoor Excursion	<ul style="list-style-type: none"> <li>• 2-days outdoor climbing session</li> </ul>
2 and 3	15 days High Altitude Training	<ul style="list-style-type: none"> <li>• Height gain up to 16000 ft</li> </ul>

**DMAS-25 Foundation of Human Performance and Emergency Care – IV**

<b>Credit</b>	<b>Topics</b>	<b>Content</b>
1	First Aid	<ul style="list-style-type: none"><li>• Treating Frost Bite, Snow Blindness</li><li>• First Aid in Hypothermia</li><li>• Making your own First Aid kit for high altitude</li><li>• Use of Pulse Oximeter, Sphygmomanometer</li></ul>
	Weather Forecasting	<ul style="list-style-type: none"><li>• Types of Clouds</li><li>• Predicting the weather patterns</li><li>• Wind Chill Factor</li></ul>
2	Rescue Techniques &- Communication devices	<ul style="list-style-type: none"><li>• Cliff Rescue, Jungle Rescue, Valley rescue</li><li>• Use of Walkie – Talkie</li><li>• Morse Code principles to communicate</li><li>• Techniques for self arrest in snow ice and glacier</li></ul>
	Technological advancements in mountaineering	<ul style="list-style-type: none"><li>• Supplemental Oxygen &amp; its functioning</li><li>• Gamow bag</li></ul>
3	Fitness Training	<ul style="list-style-type: none"><li>• 10 days rigorous mountain fitness training programme</li></ul>

**DMAS-26 Introduction to Soft Skill, Life Skill and Allied  
Mountaineering - IV**

<b>Credit</b>	<b>Topics</b>	<b>Content</b>
1	Self Awareness	<ul style="list-style-type: none"> <li>• Critical thinking &amp; problem-solving abilities through various situational experiential learning</li> <li>• Identify strength &amp; weakness of self</li> </ul>
	Soft Skills	<ul style="list-style-type: none"> <li>• Learn to improve your Preparation and anticipation in your work to enhance your performance</li> </ul>
2	Personality Development	<ul style="list-style-type: none"> <li>• Leadership skills</li> <li>• Team Management and handling conflicts</li> <li>• Learning to respect each other and developing sense of empathy towards groupmates and nature</li> </ul>
	Expedition Planning	<ul style="list-style-type: none"> <li>• Eligibility of leader &amp; Members</li> <li>• Budget planning</li> <li>• Resource planning</li> <li>• Report making</li> </ul>
3	Photography & Videography	<ul style="list-style-type: none"> <li>• Skills of photography and videography in high altitude</li> </ul>
	Mountain Terminology	<ul style="list-style-type: none"> <li>• Understand High altitude terminologies</li> </ul>

## Books for Reference

Eng, R. C., & Van Pelt, J. (Eds.). (2010). Mountaineering: The freedom of the hills. Mountaineers Books.

Long, J. (2010). How to rock climb!. Rowman & Littlefield.

Youngblood, G. S., & Baumgartner, G. J. (2000). Climbing anchors. U.S. Patent No. 6,119,993. Washington, DC: U.S. Patent and Trademark Office.

Donahue T. (2016). Advanced Rock Climbing: Expert Skills and Techniques (Mountaineers Outdoor Experts). Mountaineers Books.

Cosley, K., & Houston, M. (2004). Alpine climbing: Techniques to take you higher. The Mountaineers Books.

Twight, M., & Martin, J. (1999). Extreme alpinism: climbing light, fast, & high. The Mountaineers Books.

Tyson, A., & Loomis, M. (2006). Climbing Self-rescue: Improvising Solutions for Serious Situations. The Mountaineers Books.

Bob Gaines B., & Martin J. D. (2014). Rock Climbing: The AMGA Single Pitch Manual (How To Climb Series). Falcon Guides; First edition.

Chauvin, M., & Coppolillo, R. (2017). The Mountain Guide Manual: The Comprehensive Reference--From Belaying to Rope Systems and Self-Rescue. Rowman & Littlefield.

Young Zingaroo, सांगती सहयाद्रीचा (Marathi Edition)

Anand Palande, डोंगरयात्रा (Marathi Edition)

Anand Palande, चढाई उतराई (Marathi Edition)