



Savitribai Phule Pune University
(Formerly University of Pune)

Department of Physical Education
under the
Faculty of Inter-disciplinary Studies

Syllabus for
Certificate Course in
Mountaineering and Allied Sports
(C. C. M. & A. S.)

Credit System
(Academic Year 2021-2022)

CERTIFICATE COURSE IN MOUNTAINEERING AND ALLIED SPORTS

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

DURATION:-

- The duration of the course shall be of Three months (180 hours).
- Each working Day shall consist of Three hours of theory and practical work.

ELIGIBILITY FOR ADMISSION:-

- ❖ Minimum XII Std. or equivalent examination passed from Govt. Board
- ❖ **Age Limit :-** 18 to 60 Years (Both inclusive)
- ❖ **Intake Capacity :-** 40 Students
- ❖ **Fitness Eligibility:-** Average fitness with no limitations for physical activities and exercises.
- ❖ **Medical Test:-** Candidates should be medically fit and sound provided other conditions of admissions are fulfilled.

COURSE FEE:-

Category		Fees to be paid
A	Indian Nationals	Rs.40,000/- (Rupees Fourty Thousand only)
B	International Candidates	Rs. 1,20,000/- (Rupees One Lakh Twenty Thousand Only)

MEDIUM OF INSTRUCTION AND EXAMINATION:-

Medium of instruction will be in Marathi and /or English and question papers shall be set in Marathi and English.

ELIGIBILITY FOR APPEARING AT CERTIFICATE COURSE IN MOUNTAINEERING AND ALLIED SPORTS EXAMINATION:-

Student should have at least 75% Attendance during the Course. He / She should complete all the practical and other related work expected in all parts of the syllabus. A student who misses more than 25% of the scheduled classes will not be allowed to appear for the exam.

GENERAL INSTRUCTIONS :-

- The **Certificate Course in Mountaineering and Allied Sports (C. C. M. & A. S.)** consists of **12 credits**.
- One credit will be equivalent to 15 clock hours of student-teacher contact.
- Details of the theoretical and practical components are given in the structure of the program.
- 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 **Certificate Course in Mountaineering and Allied Sports (C. C. M. & A. S.)** will be awarded to a student who completes a total of 12 credits.

Each course will have

- 50 % of marks for Final Examination
- 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
- 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 final examination) and minimum aggregate 40% marks in each course.
- Internal assessment answer book may be shown to the students concerned but not the final examination answer scripts.

- While marks will be given for all examinations, they will be converted into grades. The 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 examination will be added together and converted into a grade and later grade point average. Results will be declared after the final examination which will give grades, grade point average and the Final Grade.

EVALUATION SCALE FOR INDIVIDUAL SUBJECT:-

<u>Percent</u>	<u>Grade</u>	<u>Grade Points</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

$$\text{CGPA} = \frac{\sum (\text{Grade Points} \times \text{Credits})}{\sum (\text{Earned Credits})}$$

STRUCTURE OF THE COURSE :-

Part	Subject Code	Subject Name	Hours	Credits
I Theory	CMT-1	Basic Skills & Technical Knowledge - I	30	02
	CMT-2	Foundation of Human Performance and Emergency Care - I	30	02
	CMT-3	Introduction to Soft Skill, Life Skill and Allied Mountaineering - I	30	02
	Total Part-I		90	06
II Practical	CMT-4	Basic Skills & Technical Knowledge – II (Practical)	30	02
	CMT-5	Foundation of Human Performance and Emergency Care – II (Practical)	30	02
	CMT-6	Introduction to Soft Skill, Life Skill and Allied Mountaineering – II (Practical)	30	02
	Total Part-II		90	06
Total Course			180	12

SYLLABUS

CMT - 1

Basic Skills and Technical Knowledge - I

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

CMT – 2

Foundation of Human Performance and Emergency Care - I

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

CMT - 3

Introduction to Soft Skill, Life Skill and Allied Mountaineering - I

Credit	Topics	Content
1	Communication	Articulation of thoughts & speech Effective presentation through experience sharing(articles, ppt, short film blogging/vlogging)
	Effective Planning & Execution	Learn to plan outdoor activity with every details Reconnaissance of the destination Logistical challenges during planning Practical difficulties during execution Debriefing and report making of the event
	Leave No Trace	Learn 7 important environmental ethics of outdoors
	Administration and Legal aspect of Mountaineering and adventure Sports	Legal aspect, government regulations Administration of Adventure Activities International standards of group safety.
	Career guidance	Career Opportunities in Mountaineering & Adventure sport Sector
2	Sahyadri Biodiversity	Flora & Fauna in Sahaydri Rivers, dams Cultural diversity in Sahyadri
	Mountaineering at global level	Other Mountain ranges of world Evolution of Himalayas
	Mountain Terminology	Identify & Understand Sahaydri Mountain Terminology
	Introduction to Sahyadri	Evolution of Sahyadri Formation of Basalt Rock Forts - Historical Perspective Sculptural splendor of Sahyadri
	Adventure Sports at Global level	Introduction to other adventure sports life mountain biking, adventure racing, ultra marathons, mountain marathons, etc.

CMT - 4

Basic Skills and Technical Knowledge – II

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

CMT - 5

Foundation of Human Performance and Emergency Care - II

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

CMT - 6

Introduction to Soft Skill, Life Skill and Allied Mountaineering – II

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

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 सहायद्रीचा (Marathi Edition)
- Anand Palande, डोंगरयात्रा (Marathi Edition)
- Anand Palande, चढाई उतराई (Marathi Edition)