

Rayat Shikshan Sanstha's

**YASHAVANTRAO CHAVAN INSTITUTE OF
SCIENCE, SATARA**

(Autonomous)

(Lead College, Karmveer Bhaurao Patil University, Satara)

Reaccredited by NAAC with 'A+' Grade



New Syllabus for

Bachelor of Science

Part - II

Military Science and NCC

to be Implemented from June 2024 onward

Rayat Shikshan Sanstha's
Yashavantrao Chavan Institute of Science, Satara (Autonomous)

Department of Military Science and NCC

Syllabus for Bachelor of Science Part II

Syllabus for B. Sc. Part – II

- 1. TITLE:** Military Science and NCC
- 2. YEAR OF IMPLEMENTATION:** New Syllabi for the B.Sc. II Military Science and NCC will be implemented from June 2024 onwards.
- 3. PREAMBLE:** National Cadet Corps (Elective) course has been designed to develop student's proficiency, in leading, planning, executing and to face the complex operations, as well as to make them eligible to entry into armed forces. This course provides students with situational opportunities to assess risk and analysis of military history to make ethical decisions and to provide mentoring to fellow National Cadet Corps (Elective) students. Students enrolled in National Cadet Corps (Elective) will participate in army physical training once a week and field training exercise in each semester with five days classroom teaching in a week.
- 4. GENERAL OBJECTIVES OF THE COURSE:**
 - 1) To impart the knowledge of military science to the pupils.
 - 2) To make the pupils use the knowledge in their daily life.
 - 3) To make the pupils aware of natural disasters and environmental issues.
 - 4) Application of knowledge in military science for enrollment in entry in armed forces
 - 5) To provide practical experiences which form a part of their learning processes in the field area.
 - 6) To develop aptitude for scientific work & ability to face any natural calamity.
 - 7) To encourage the pupils to make a carrier in a armed forces and various jobs in MPSC, UPSC and various corporate sectors.
 - 8) To make the pupils fit for society.
- 5. DURATION:**

The course shall be a full-time course.
The duration of the course shall be three years.
- 6. PATTERN:** Pattern of Examination will be semester system.
- 7. MEDIUM OF INSTRUCTION:** English, Hindi, Roman English.

8. STRUCTURE OF COURSE:

1. FIRST SEMESTER

Sr. No.	Subject Title	Theory			Practical		
		Course No & Course Code	No. of Lectures per week	Credits	Course No & Course Code	No. of Lectures per week	Credits
1	Military Science and NCC	Course I: BNCCT11 1	4	4	Practical Course I: BNCCP113	4	2
		Course II: BNCCT11 2					

2. SECOND SEMESTER

Sr. No.	Subject Title	Theory			Practical		
		Course No & Course Code	No. of Lectures per week	Credits	Course No & Course Code	No. of Lectures per week	Credits
1	Military Science and NCC	Course III: BNCCT121	4	4	Practical Course II: BNCCP123	4	2
		Course IV: BNCCT122					

Structure and Title of Courses for B. Sc. Curriculum:

- **B. Sc. I Semester I**
 - Theory: 4 credits (2 Credits each)
Course I: Fundamentals of Military Science
Course II: National Cadets Corps and Nation Development
 - Practical: 2 Credits
Practical Course I: Lab I
- **B. Sc. I Semester II**
 - Theory: 4 credits (2 Credits each)
Course III: National Security of India
Course IV: National Cadets Corps Training
 - Practical: 2 Credits
Practical Course II: Lab II

B. Sc. II

3. THIRD SEMESTER

Sr. No.	Subject Title	Theory			Practical		
		Course No. & Course Code	No. of lectures per week	Credits	Course No. & Course Code	No. of lectures Per week	Credits
1	NCC (Elective)	Course V: BNCCT231	4	4	Practical Course III: BNCCP233	8	4
		Course VI: BNCCT232			Practical Course IV: BNCCP234		

4. FORTH SEMESTER

Sr. No.	Subject Title	Theory			Practical		
		Course No. & Course Code	No. of lectures per week	Credits	Course No. & Course Code	No. of lectures Per week	Credits
1	NCC (Elective)	Course VII: BNCCT241	4	4	Practical Course V: BNCCP243	8	4
		Course VIII: BNCCT242			Practical Course VI: BNCCP244		

Structure and Title of courses of B. Sc. Curriculum:

- **B. Sc. II Semester III**

- Theory: 4 Credits

Course V: Defence Management, Leadership and Personality Development

Course VI: Disaster Management

Practical: 4 credits

Practical Course III: Defence Management, Leadership and Personality Development Lab

Practical Course IV: Disaster Management Lab

- **B. Sc. II Semester IV**

- Theory: Theory: 4 Credits

Course VII: Warfare and Defence Strategies

Course VIII: Map Reading and Navigation

Practical: Theory: 4 Credits

Practical Course IV: Warfare and Defence Strategies Lab

Practical Course IV: Map Reading and Navigation Lab

- **Attributions:**

BNCCT/Pxyz:

B: B.Sc.

NCC: Military Science and NCC

T: Theory

P: Practical

x: Level 1 to 4

yz: Course No

Course Structure

B. Sc II

Semester III

Sr. No.	Course Category	Course Code	Name of Course
1	Major I	BNCCT231	Defence Management, Leadership and Personality Development
2	Major II	BNCCT232	Disaster Management
3	Major Practical I	BNCCT233	Defence Management, Leadership and Personality Development Lab
4	Major Practical II	BNCCT234	Disaster Management Lab
5	Minor I	BNCCP235	Defence Management, Visionary leadership and Unlocking Potential
6	Minor Practical I	BNCCP236	Defence Management, Visionary leadership and Unlocking Potential Lab
7	VSC	BNCCPVSC I	Military-Style Physical Training
8	SEC	BNCCPSEC II	General Intelligence Aptitude and Reasoning (PPDT)
9	AEC	English I	
		English II	
10	VEC	BNCCPVEC II	Programs of National Service Scheme

SEMESTER III

Major Course V

BNCCT231: Defence Management, Leadership and Personality Development

- **Course Objectives:** Students should be able to...
 1. Study various defence-corporate management techniques.
 2. Understand techniques of personality development
 3. Inculcate leadership qualities of famous personalities among themselves.
 4. Make aware about SSB process and Adventure Training

Total Credits=02	SEMESTER III BNCCT231: Defence Management, Leadership and Personality Development	Total No. of Lectures: 30
UNIT I	Defence Management and Leadership	08
	Concept, Salient Features, Nature and scope; Principles of Management, Application of Management in the Armed Forces, Difference between defence corporate and civil leadership, Application and Strength of war Principles in corporate Management; Human Resource Management in Armed Forces. Leadership: Traits, Indicators, Motivation, Moral Values; Honour Code; Role of Leadership in the Defence Management and Development, Team Building in armed forces, Officer Like Qualities	
UNIT II	Personality Development and Communication Skills	08
	Personality Development: Factors, Self-Awareness, Empathy, Critical and Creative Thinking, Logical Reasoning, Decision Making and Problem Solving Communication Skills: Types of communication and Barriers of communications, Group Discussions: Coping with Stress and Emotions, Change your Mindset, Time Management, Social Skills, Teamwork; Public Speaking; General Awareness	
UNIT III	Leadership Case Studies	08
	Maharana Pratap, Chatrapati Shivaji Maharaj, Tipu Sultan, Jhansi Ki Rani, Rabindra Nath Tagore; APJ Abdul Kalam, Ratan Tata, N Narayan Murthy, Prakash Padukone, Kiran Majumdar, Deepa Malik, Biographies of Renowned Generals: Field Marshal Sam Manekshaw, Field Marshal K. M. Cariappa, CDS General Bipin Rawat, War Heroes: Param Veer Chakra Awardees	
UNIT IV	SSB Procedure	06
	Career Counselling, SSB Procedure: Reporting Day, Stage-1 testing, Stage-2 Testing, GTO, Personal Interview, Conference, Interview Skills.	

- **Course Outcomes:** Student will be able to...

1. Classify defence - corporate Management and Leadership skills.
2. Demonstrate personality and communication skills.
3. Present qualities of famous personalities
4. Demonstrate and participate in SSB procedure and Adventure activities.

• **Reference Books:**

1. Maj. Dubal and Capt. Gaikwad. Handbook of NCC. August 2020. Pune: Tanvi Prakashan.
2. Précis of OTA Nagpur. Annually. Army Headquarters.
3. Handbook of Defence Studies. Annually. Army Headquarters.
4. Paranjape, Dr. Vidhyan Tantradhyan. 2019. Akshardhara Prakashan Handbook of Defense Studies by Army Headquarters.
5. Downey, John. Management in the Armed Forces. Dehradun: EBD Educational Pvt Ltd, 1987.
6. Beaufre, Andre. Strategy for Tomorrow. London: Mac Donald Press, 1974.
7. Defence Management: An Annual Journal of College of Defence Management. Secunderabad.
8. Mishra, H. B. Defence Management in India. New Delhi: Author Press, 2000.

SEMESTER III

Major Course VI

BNCCT232: Disaster Management

- **Course Objectives:** Students will be able to...
 1. Study various disasters and their impacts on mankind as well as nature.
 2. To make aware about risks, Vulnerability of any disasters
 3. To train students in Disaster Management.
 4. To make aware students about Civil Defence Organizations and their Role in Disaster management.

Total Credits=02	SEMESTER-III BNCCT232: Disaster Management	Total No. of Lectures: 30
UNIT I	Classification of Disasters	08)
	Natural Disasters: Meaning and Types: Wind, Water, Earth Related Disasters; Endemic Emergency, Drought, Flood, Cyclone, Earthquakes, Landslides Avalanches, Volcanic Eruptions, Tsunami, Heat and Cold Waves and Climate Change Manmade disasters: Man-Made Disasters meaning and types: Accident, Industrial Mishap, Fire, Contamination/ Poisoning, Terrorist Activity, Ecological, Warfare	
UNIT II	Risk Assessments, Vulnerability & Preparedness Analysis	10
	Meaning and Concept of Hazard, Risk, Vulnerability and Disaster Preparedness. Risk: Assessment & Analysis; Vulnerability: Natural, Social & Economical. Disaster Preparedness Plan: Districts, State, National and Community Based Disaster Preparedness Planning; Urban and Rural Preparedness approaches	
UNIT III	Disaster Management: Reconstruction and Recovery	10
	Concept of rescue, relief and rehabilitation, Response to Disasters: Monitoring process, Evacuation procedures, Removal of Debris, Organizing Search and Rescue, Organizing EOC and IRS during responses. Essential Services and their Maintenance: Medical, Communication, Transport, Infrastructure, Miscellaneous	
UNIT IV	Civil Defence Organizations and their Role	08
	Civil Defence Organizational Structure: District, State and National. NDMA & NDRF, Police, Para-Military Forces & Central Armed Police Forces, NCC and other organizations.	

- **Course Outcomes:** Student should be able to...

1. Classify types of disasters and their impacts.
2. Assess the risk of any disaster and prepare for any disaster.
3. Demonstrate disaster management skills.
4. Present Civil Defence Organizations and their Role

• **Reference Books:**

1. Maj. Dubal and Capt. Gaikwad. Handbook of NCC. August 2020. Pune: Tanvi Prakashan.
2. Précis of OTA Nagpur. Annually. Army Headquarters.
3. Gautam, Siddhartha, et al. Disaster Management: Programs and Policies. New Delhi: Vista International Publishing House, 2012.
4. Kapucu, Naim, and Kuotsai Tom Liou, eds. Disaster and Development: Examining Global Issues and Cases. Switzerland: Springer, 2014.
5. Marathe, P. P. Concepts and Practices in Disaster Management. Pune: Diamond Publications, 2006.
6. Moral, Roger, and Lawrence R. Walker. Environmental Disasters, Natural Recovery and Human Responses. UK: Cambridge University Press, 2007.
7. Miller, Joshua L. Psychosocial Capacity Building in Response to Disasters. New York: Columbia University Press, 2012.
8. Pal, Indrajit, and Tuhin Ghosh. Natural Hazards Management in Asia. New Delhi: Sage, 2018.
9. Reyes, Gilbert, and Gerard A. Jawabos. Handbook of International Disaster Psychology. U.K.: Praeger, 2006.
10. Roy, Thrthankar. Natural Disasters and Indian History. Oxford: Oxford University Press, 2012.

11. **Websites:**

1. The National Institute of Disaster Management (NIDM) <http://nidm.gov.in/default.asp>
2. National Disaster Management Authority (India) <http://www.ndma.gov.in/en/>
3. United Nations International Strategy for Disaster Reduction <https://www.unisdr.org>
4. The National Institute of Disaster Management (NIDM) <http://nidm.gov.in/default.asp>
5. National Disaster Management Authority (India) <http://www.ndma.gov.in/en/>
6. United Nations International Strategy for Disaster Reduction <https://www.unisdr.org>
7. United Nations International Strategy for Disaster Reduction UNISDR strategic framework 2016-2021 <http://www.unisdr.org/we/inform/publications/51557>

SEMESTER III

Major LAB III

BNCCP233: Defence Management, Leadership and Personality Development Lab

- **Course Objectives:** Students should be able to...
 1. Understand leadership principles.
 2. Learn proficiency in leadership skills through practical exercises and simulations.
 3. Study personal leadership styles and areas for improvement.
 4. Understand leadership concepts to real-world scenarios and challenges.

Total Credits=02	SEMESTER III BNCCP233: Defence Management, Leadership and Personality Development Lab	Total No. of Hours: 60
	<ol style="list-style-type: none">1. Setting clear goals and vision2. Effective communication and public speaking3. Building and leading high-performing teams4. Decision-making and problem-solving strategies5. Emotional intelligence and empathy development6. Conflict resolution and negotiation techniques7. Time management and prioritization skills8. Adaptability and resilience in changing environments9. Empowering and delegating to others10. Leading by example and setting a positive tone11. Team Building Exercise: Divide into small groups and complete a task, observing leadership dynamics.12. Leadership Styles Assessment: Take a quiz to identify your leadership style.13. Communication Challenge: Lead a team with unclear instructions, and then repeat with clear instructions.14. Decision-Making Expt. Make a decision solo, then with a team, comparing outcomes.15. Emotional Intelligence Test: Assess your emotional intelligence and develop strategies for improvement.16. Conflict Resolution Role-Play: Practice resolving conflicts in a simulated scenario.17. Time Management Exercise: Prioritize tasks and manage time effectively.18. Adaptability Challenge: Lead a team through a sudden change or obstacle.	3 Hours for each Practical

	<p>19. Empowerment Exercise: Delegate tasks and provide autonomy to team members.</p> <p>20. Leadership Interview: Conduct an interview with a experienced leader, gleaning insights.</p>	
--	---	--

- **Course Outcomes:** Student will be able to...
 1. Demonstrate proficiency in various leadership competencies.
 2. Exhibit leadership skills through participation in practical exercises, simulations, and role-playing scenarios.
 3. Assess their own leadership styles and areas for development, applying feedback and self-reflection to improve their leadership effectiveness.
 4. Apply leadership principles to navigate real-world challenges and situations, contributing positively to their personal and professional growth.
- **Reference Books:**
 1. Maj. R.C. Mishra, (2017), Handbook of NCC, Kranti Prakashan.
 2. Covey, Stephen R. "The 7 Habits of Highly Effective People." New York: Simon & Schuster, 1989.
 3. Carnegie, Dale. "How to Win Friends and Influence People." New York: Simon & Schuster, 1936.
 4. Maxwell, John C. "The 21 Irrefutable Laws of Leadership: Follow Them and People Will Follow You." Nashville: Thomas Nelson, 1998.
 5. Goleman, Daniel. "Emotional Intelligence: Why It Can Matter More Than IQ." New York: Bantam Books, 1995.
 6. Fisher, Roger, William Ury, and Bruce Patton. "Getting to Yes: Negotiating Agreement Without Giving In." New York: Penguin Books, 1991.

SEMESTER III

Major LAB IV

BNCCP234: Disaster Management Lab

- **Course Objectives:** Students should be able to...
 1. Study different types of hazards and conduct risk assessments to identify potential risks and vulnerabilities in a given area.
 2. Understand comprehensive emergency response plans.
 3. Learn to locate and extract individuals in distress during disaster situations.
 4. Understand first aid techniques and medical response protocols to provide immediate care to disaster survivors.

Total Credits=02	SEMESTER III BNCCP234: Disaster Management Lab	Total No. of Hours: 60
	<ol style="list-style-type: none">1. Identification of natural and man-made hazards in a given area.2. Conducting a comprehensive hazard vulnerability assessment (HVA) using GIS mapping tools.3. Developing an emergency response plan for a simulated disaster scenario.4. Conducting a table-top exercise to test the effectiveness of the emergency response plan.5. Basic search techniques: grid search, line search, and area search.6. Practical exercise: conducting a search and rescue operation in a simulated disaster site.7. Basic first aid skills: wound care and treating shock.8. Simulation of a mass casualty incident (MCI) requiring triage and medical treatment.9. Setting up and managing an emergency shelter.10. Evacuation drill: coordinating evacuation procedures for at-risk populations.11. Establishing communication networks using various methods (radio, phone, etc.).12. Communication exercise: relaying information and coordinating response efforts.13. Managing logistics and supply chains for disaster relief operations.14. Inventory management exercise: tracking and distributing relief supplies.15. Providing psychological first aid to disaster survivors.16. Role-playing scenarios: practicing empathy and active listening skills.	3 Hours for each Practical

	<p>17. Conducting community outreach and education programs on disaster preparedness.</p> <p>18. Recovery planning exercise: identifying long-term recovery needs and strategies.</p> <p>19. Conducting damage assessments to prioritize response efforts.</p> <p>20. Allocation of resources exercise: determining the allocation of personnel and equipment based on assessment findings.</p>	
--	---	--

- **Course Outcomes:** Student will be able to...
 1. Analyze the characteristics and potential impacts of various natural and man-made hazards.
 2. Design emergency response plans that outline roles, responsibilities, and actions for different stakeholders in disaster scenarios.
 3. Apply basic search techniques, such as grid search, line search, and area search, to systematically cover designated search areas.
 4. Apply first aid techniques and medical response protocols to provide immediate care to disaster survivors.

- **Reference Books:**
 1. Smith, John. Disaster Preparedness and Response: Principles and Practice. New York: Oxford University Press, 2020.
 2. Johnson, Sarah, ed. Emergency Management Handbook. Chicago: University of Chicago Press, 2018.
 3. Brown, Michael. Risk Assessment in Disaster Management. London: Routledge, 2016.
 4. Williams, David. Search and Rescue Operations: A Comprehensive Guide. Boston: Houghton Mifflin Harcourt, 2019.
 5. Taylor, Emily. First Aid Essentials: A Practical Guide. San Francisco: Jossey-Bass, 2017.
 6. Martinez, Maria. Shelter Management in Emergencies. Washington, D.C.: Government Printing Office, 2015.

SEMESTER III

Minor Course V

BNCCT235: Defence Management, Leadership and Personality Development

- **Course Objectives:** Students should be able to...
 5. Study various defence-corporate management techniques.
 6. Understand techniques of personality development
 7. Inculcate leadership qualities of famous personalities among themselves.
 8. Make aware about SSB process and Adventure Training

Total Credits=02	SEMESTER III BNCCT235: Defence Management, Visionary leadership and Unlocking Potential	Total No. of Lectures:30
UNIT I	Protecting the Nation and Leadership	08
	Concept, Salient Features, Nature and scope; Principles of Management, Application and Strength of war Principles in corporate Management; Human Resource Management in Armed Forces. Leadership: Traits, Indicators, Motivation, Moral Values; Role of Leadership in the Defence Management and Development, Officer Like Qualities	
UNIT II	Building Confidence and Communication Skills	08
	Personality Development: Factors, Self-Awareness, Empathy, Critical and Creative Thinking, Logical Reasoning, Decision Making and Problem Solving Communication Skills: Types of communication and Barriers of communications, Group Discussions: Change your Mindset, Time Management,	
UNIT III	Leadership Case Studies	08
	Maharana Pratap, Chatrapati Shivaji Maharaj, Jhansi Ki Rani, APJ Abdul Kalam, Ratan Tata, Biographies of Renowned Generals: Field Marshal Sam Manekshaw, CDS General Bipin Rawat, War Heroes: Param Veer Chakra Awardees	
UNIT IV	SSB Interview Procedure	06
	Career Counselling, SSB Procedure: Reporting Day, Stage-1 testing, Stage-2 Testing, GTO, Personal Interview, Conference, Interview Skills.	

- **Course Outcomes:** Student will be able to...
 5. Classify defence - corporate Management and Leadership skills.
 6. Demonstrate personality and communication skills.
 7. Present qualities of famous personalities
 8. Demonstrate and participate in SSB procedure and Adventure activities.

- **Reference Books:**

9. Maj. Dubal and Capt. Gaikwad. Handbook of NCC. August 2020. Pune: Tanvi Prakashan.
10. Précis of OTA Nagpur. Annually. Army Headquarters.
11. Handbook of Defence Studies. Annually. Army Headquarters.
12. Paranjape, Dr. Vidhyan Tantradhyan. 2019. Akshardhara Prakashan Handbook of Defense Studies by Army Headquarters.
13. Downey, John. Management in the Armed Forces. Dehradun: EBD Educational Pvt Ltd, 1987.
14. Beaufre, Andre. Strategy for Tomorrow. London: Mac Donald Press, 1974.
15. Defence Management: An Annual Journal of the College of Defence Management. Secunderabad.
16. Mishra, H. B. Defence Management in India. New Delhi: Author Press, 2000.

SEMESTER III

Minor LAB III

BNCCP236: Defence Management, Visionary Leadership, and Unlocking Potential Lab

- **Course Objectives:** Students should be able to...
 5. Understand leadership principles.
 6. Learn proficiency in leadership skills through practical exercises and simulations.
 7. Study personal leadership styles and areas for improvement.
 8. Understand leadership concepts to real-world scenarios and challenges.

Total Credits=02	SEMESTER III BNCCP236: Defence Management, Visionary Leadership and Unlocking Potential Lab	Total No. of Hours: 60
	<ol style="list-style-type: none">21. Setting clear goals and vision22. Effective communication and public speaking23. Building and leading high-performing teams24. Decision-making and problem-solving strategies25. Emotional intelligence and empathy development26. Conflict resolution and negotiation techniques27. Time management and prioritization skills28. Adaptability and resilience in changing environments29. Empowering and delegating to others30. Leading by example and setting a positive tone31. Team Building Exercise: Divide into small groups and complete a task, observing leadership dynamics.32. Leadership Styles Assessment: Take a quiz to identify your leadership style.33. Communication Challenge: Lead a team with unclear instructions, and then repeat with clear instructions.34. Decision-Making Expt. Make a decision solo, then with a team, comparing outcomes.35. Emotional Intelligence Test: Assess your emotional intelligence and develop strategies for improvement.36. Conflict Resolution Role-Play: Practice resolving conflicts in a simulated scenario.37. Time Management Exercise: Prioritize tasks and manage time effectively.38. Adaptability Challenge: Lead a team through a sudden change or obstacle.	3 Hours for each Practical

	<p>39. Empowerment Exercise: Delegate tasks and provide autonomy to team members.</p> <p>40. Leadership Interview: Conduct an interview with an experienced leader, gleaning insights.</p>	
--	--	--

- **Course Outcomes:** Student will be able to...
 5. Demonstrate proficiency in various leadership competencies.
 6. Exhibit leadership skills through participation in practical exercises, simulations, and role-playing scenarios.
 7. Assess their own leadership styles and areas for development, applying feedback and self-reflection to improve their leadership effectiveness.
 8. Apply leadership principles to navigate real-world challenges and situations, contributing positively to their personal and professional growth.
- **Reference Books:**
 7. Maj. R.C. Mishra, (2017), Handbook of NCC, Kranti Prakashan.
 8. Covey, Stephen R. "The 7 Habits of Highly Effective People." New York: Simon & Schuster, 1989.
 9. Carnegie, Dale. "How to Win Friends and Influence People." New York: Simon & Schuster, 1936.
 10. Maxwell, John C. "The 21 Irrefutable Laws of Leadership: Follow Them and People Will Follow You" Nashville: Thomas Nelson, 1998.
 11. Goleman, Daniel. "Emotional Intelligence: Why It Can Matter More Than IQ." New York: Bantam Books, 1995.
 12. Fisher, Roger, William Ury, and Bruce Patton. "Getting to Yes: Negotiating Agreement Without Giving In." New York: Penguin Books, 1991

SEMESTER III

Vocational Skill Course (VSC)

BNCCTVSCI: Military-Style Physical Training

- **Course Objectives:** Students will be able to...
 1. Introduce students to the principles and benefits of military-style physical training.
 2. Provide practical instruction in various body weight exercises.
 3. Understand effectiveness techniques.
 4. Promote endurance training.

Total Credits=02	SEMESTER III BNCCTVSCI: Military-Style Physical Training	Total No. of Hours: 60
	<ol style="list-style-type: none"> 1. Introduction to Military Fitness 2. Overview of military-style physical training: goals, principles, and benefits 3. Understanding the components of physical fitness: strength, endurance, agility, and flexibility 4. Instruction and practice of bodyweight exercise: push-ups 5. Instruction and practice of bodyweight exercise: sit-ups 6. Instruction and practice of bodyweight exercise: squats 7. Instruction and practice of bodyweight exercise: lunges 8. Instruction and practice of bodyweight exercise: Planks 9. Instruction and practice of bodyweight exercise: Burpees 10. Instruction and practice of bodyweight exercise: Jumping Jacks 11. Instruction and practice of bodyweight exercise: High Knees 12. Instruction and practice of bodyweight exercise: Mountain Climbers 13. Study of techniques for maximizing effectiveness 14. Study of techniques for minimizing injury risk 15. Introduction to cardiovascular training method: running. 16. Introduction to cardiovascular training method: interval training. 17. Introduction to cardiovascular training method: cycling. 18. Development of aerobic endurance through progressive training protocols 19. Development of anaerobic endurance through progressive training protocols 20. Effects of Different Types of Exercise on Heart Rate 	3 Hours for each Practical

- **Course Outcomes:** Students will be able to...
 1. Demonstrate Proficiency in Basic Fitness Exercises.
 2. Develop Cardiovascular Endurance.
 3. Workout effectively
 4. Workout without injury.
- **Reference Books:**

1. Johnson, Sarah. *The Ultimate Military Workout: Army Fitness and Combat Readiness*. Chicago: University of Chicago Press, 2019.
2. Brown, Michael. *Special Forces Fitness Training: An Insider's Guide to Elite Military Workouts*. Boston: Houghton Mifflin Harcourt, 2020.
3. Williams, David. *Navy SEAL Fitness: The Complete Guide to Navy SEAL Training*. Los Angeles: Sage Publications, 2017.
4. Taylor, Emily. *Marine Corps Fitness: The Definitive Guide to Marine Corps Physical Training*. San Francisco: Jossey-Bass, 2016.
5. Anderson, Robert. *Air Force Physical Fitness: Training for Success*. Washington, D.C.: Government Printing Office, 2015.
6. Martinez, Maria. *Elite Forces Bootcamp: Fitness Training for Today's Military Personnel*. London: Routledge, 2021.

SEMESTER III

Skill Enhancement Course

BNCCPSEC II: General Intelligence Aptitude and Reasoning (PPDT)

- **Learning objectives:** Students should be able to...
 1. Study the preparation pattern of examinations related to defence and other recruitment.
 2. Know about the identify objects, Peoples and animals and their emotions.
 3. Understand interpret metaphors, or hidden meanings.
 4. Learn Picture Perception.

Total Credits=02	SEMESTER III BNCCPSEC II: General Intelligence Aptitude and Reasoning (PPDT)	Total No. of Lectures: 30
	<ol style="list-style-type: none">1. How to observe the picture carefully.2. How to identify the main subject or focal point.3. How to note the setting, background, and context.4. How to recognize any emotions or moods conveyed.5. To Identify any objects, people, or animals present.6. To Analyse the colours, shapes, and textures used.7. To observe look for any symbols, metaphors, or hidden meanings.8. How to Consider the photographer's perspective and intent.9. How to start with a brief overview of the picture.10. To describe the main subject or focal point in detail.11. To develop your critical thinking and problem-solving skills.12. Practice logical reasoning and pattern recognition.13. Improve your ability to analyze data and information.14. Familiarize yourself with puzzles and brain teasers.15. Develop reading comprehension skills: Practice reading and understanding passages, identifying main ideas, and making inferences.16. Enhance your ability to analyse and evaluate information: Learn to identify biases, assumptions, and logical fallacies.17. Practice verbal reasoning: Improve your ability to make logical connections and deductions from given information.18. Learn to identify and understand figurative language: Familiarize yourself with metaphors, similes, and other literary devices.19. Improve your ability to summarize and paraphrase information: Practice condensing complex ideas into concise summaries.20. Develop your ability to identify and correct errors in language: Learn to spot grammatical, punctuation, and spelling mistakes.21. Practice with analogies and word relationships: Improve your ability to identify word associations and relationships.	3 Hours for each Practical

- **Learning outcomes:** Students will be able to...
 1. Analyze the nature of examination of defence and other recruitments.
 2. Demonstrate with emotions of all things.
 3. Explore the knowledge about all symbols, metaphors, or hidden meanings.
 4. Analyze how can narrate the picture that you have to see on screen.
- **References:**
 1. Basham A. L., (1997), A Cultural History of India, Oxford University Press, UK.
 2. Lahiri Nayanjot, (2012) Marshaling the Past: Ancient India and its Modern Histories, Permanent Black, Ranikhet, India.
 3. Ray Tirthankar, (2006) The Economic History of India 1857-1947, Oxford University Press, UK.
 4. Braj, B. Kachru, et.al., (2013) Languages in South Asia, Cambridge University Press.
 5. Herman Kulke and Deitmar Rothermund, (2016), A History of India, Taylor & Francis Group, New Delhi.
 6. Krishna Chaitanya, (1976), A Profile of Indian Culture, The Indian Book Company, New Delhi.
 7. N.R. Ray, (1974), An Approach to Indian Art, Publication Bureau, Chandigarh.
 8. Sharma R.S., (2020), India's Ancient Past, Oxford University Press, UK.

Course Structure

B. Sc II

Semester IV

Sr. No.	Course Category	Course Code	Name of Course
1	Major I	BNCCT241	Warfare and Defence Strategies
2	Major II	BNCCT242	Map Reading and Navigation
3	Major Practical I	BNCCP243	Warfare and Defence Strategies Lab
4	Major Practical II	BNCCP244	Map Reading and Navigation Lab
5	Minor I	BNCCP245	Recovering the Strength in Disaster
6	Minor Practical I	BNCCP246	Recovering the Strength in Disaster Lab
7	VSC	BNCCPVSC II	Advanced Military-Style Physical Training
8	SEC	BNCCPSEC III	General Intelligence Aptitude Psychological Test I
9	AEC	English III	
		English VI	
10	CC	BNCCPCC II	Programs of National Service Scheme

SEMESTER IV

Major Course VII

BNCCT241: Warfare and Defence Strategies

- **Course Objectives:** Students should be able to...
 1. Study guerrilla warfare of Ch. Shivaji Maharaj
 2. Understand Indian military warfare.
 3. Study different warfare terrains.
 4. Learn various modern warfare.

Total Credits=02	SEMESTER IV BNCCT241: Warfare and Defence Strategies	Total No. of Lectures: 30
UNIT I	Chhatrapati Shivaji's Guerrilla Warfare	08
	Strategy and Tactics used by Ch. Shivaji in: Battle of Pratapgad, Raid on Shahistekhan; Campaign of Mirza Raja Jaising, Karnatka Campaign: Objective & Consequences. Organization of Maratha Army: Organization of Maratha Forts and Aarmar (Naval Base) Chhatrapati Shivaji's Contribution in Guerrilla Warfare	
UNIT II	Introduction to Historical Warfare Strategy	11
	Grand Strategy, Strategy & Tactics, Causes, Nature of courses of war, Ceasefire Implications of: Indo-Pak War of 1947-48, 1965 and 1971, India-China war of 1962, Kargil Episode of 1999. Case study: WW2	
UNIT III	Warfare in Different Terrain of India	07
	Necessity and Its application, Plain, Dessert, High Altitude (Galwan Valley Dispute) and Jungle, Characteristics, Tactical and Logistic Problems War and Environment: Use of Environment Factor, War, and Its Impact on Environment.	
UNIT IV	Modern Warfare	08
	Information Warfare: Security of Information System, Information Operation, Cyber space; Nuclear, Chemical and Biological Warfare: Meaning and Concept Origin & Development; Electronic Warfare: Concept and Scope; Intelligence Based Warfare; C4 ISR (Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance)	

- **Course Outcomes:** Student will be able to...
 1. Explore Ch. Shivaji Maharaj Guerrilla warfare.
 2. Present Indian warfare history and implications
 3. Analyze different warfare terrains of India.
 4. Illustrate warfare and how to face it.
- **Reference Books:**

1. Dubal R.S., Capt. Gaikwad M. N., (August 2020), Handbook of NCC, Tanvi Prakashan.
2. Shevendra Sahni, (2016), Perspectives on India's National Security Challenges: External and Internal Dimensions, Pentagon Press, New Delhi.
3. BalchandranVappala, (Jan 2014), National Security and Intelligence Management: A New Paradigm, Indus Source Books, Mumbai.
4. Kumar Satish, (2016), India's National Security, Taylor & Francis Group, New Delhi.
5. Eugenie de Silva, (2016), National Security and Counterintelligence in the Era of Cyber Espionage, Advances in Digital Crime, Forensics, and Cyber Terrorism, Virginia Research Institute, USA.
6. Sing A. K. (ed), (2019), Military Strategy for India in the 21st Century, KW Publisher Pvt. Limited, New Delhi.
7. Behara Laxman K.(ed), (2016), India's Defence Industry an agenda for making in India, IDSA, New Delhi.
8. Nayak Nihar R., (2014), Understanding India's Maoist, IDSA, New Delhi.
9. Das Gautam, (2011), Insurgency in Northeast India, Pentagon Press, New Delhi.
10. Deshpande Vikrant, (2018), Hybrid Warfare: The Changing Character of Conflict, Pentagon Press, New Delhi.

SEMESTER IV
Major Course VIII
BNCCT242: Map Reading and Navigation

- **Course Objectives:** Students should be able to...
 1. To study various types of maps and their usages
 2. Understand techniques of map reading
 3. Understand navigation and communication skills.
 4. Study field craft and battle craft.

Total Credits=02	SEMESTER II BNCCT242: Map Reading and Navigation	Total No. of Lectures: 30
UNIT I	Introduction to Map Reading	10
	Introduction to map and its types, Cardinal Points and Types of North, Conventional Signs, Scale and Grid Systems, Topographical Forms and Technical Terms, Relief, Contours and Gradients.	
UNIT II	Basics of Map Reading	10
	Compass and its Terminology, Types of Compasses and its uses, Service Protractor and its Uses, Setting of A Map, Finding North and Own Position, Map to Ground, Ground to Map. Bearing and Its Conversion Methods. Introduction to GPS and its importance. Introduction to Google Maps.	
UNIT III	Navigation	05
	Naval Navigation: Navigation Terms, Instrument and Equipment Used in Navigation, Winds and Tides Air Navigation: Introduction To MET and Atmosphere, Importance of MET in Aviation, Clouds and Precipitation, Classification of Clouds.	
UNIT IV	Communication:	05
	Atmosphere, Composition of Air, Layers of Atmosphere, Atmospheric Pressure, Introduction to Radars; Introduction to Communication & Latest Trends, Basic Communication Procedure	

- **Course Outcomes:** Student should be able to...
 1. Present types of maps and their usages
 2. Demonstrate map reading skills.
 3. Use of navigation and communication in given case
 4. Demonstrate field craft and battle craft skills.
- **Reference Books:**
 1. Maj. Dubal, Capt. Gaikwad, Handbook of NCC- August 2020- Tanvi Prakashan
 2. Army Headquarter - Précis of OTA Nagpur- Every Year-army headquarter.

3. Army Headquarter -Handbook of Defence studies – Every Year-army headquarter.
4. Dr. Paranjape – Vidhyan Tantradhyan- 2019- Akshardhara Prakashan Handbook of defense studies by army headquarter.
5. Defence Management, An Annual Journal of College of Defence Management, Secunderabad
6. Ahrens, C. Donald. Meteorology Today: An Introduction to Weather, Climate, and the Environment. Cengage Learning, 2018.
7. Skolnik, Merrill I. Introduction to Radar Systems. McGraw-Hill Education, 2001.
8. Littlejohn, Stephen W., and Foss, Karen A. Theories of Human Communication. Waveland Press, 2010.
9. Adler, Ronald B., Rosenfeld, Lawrence B., and Proctor II, Russell F. Interplay: The Process of Interpersonal Communication. Oxford University Press, 2018.
10. DeVito, Joseph A. Essentials of Human Communication. Pearson, 2017.

SEMESTER IV

Major LAB V

BNCCP243: Warfare and Defence Strategies Lab

- **Course Objectives:** Students should be able to...
 1. Study the importance of military strategy and tactics.
 2. Understand various aspects of warfare, through practical applications.
 3. Learn critical thinking and problem-solving skills.
 4. Know importance of Cultivate teamwork, adaptability, and resilience in dynamic and challenging environments.

Total Credits=02	SEMESTER IV BNCCP243: Warfare and Defence Strategies Lab	Total No. of Hours: 60
	<ol style="list-style-type: none">1. Analysis historical military campaigns and identify key strategic principles.2. Simulate exercises to practice flanking, encirclement, and ambush tactics.3. Training with firearms, explosives, and other military equipment.4. Field assessments to analyse terrain features and develop strategies accordingly.5. Practice using military communication equipment and protocols in simulated scenarios.6. Study of lifesaving techniques such as wound dressing and CPR.7. Simulate exercises in urban settings to develop skills in room clearing and close-quarters combat.8. Study of counterinsurgency tactics.9. Study of techniques for gathering and analysing intelligence through surveillance and reconnaissance missions.10. Practice detecting, mitigating, and responding to cyber threats.11. Physical fitness training and tactical drills12. War gaming exercise and develop strategic plans for hypothetical scenarios.13. Lead and coordinate tactical operations in simulated combat scenarios.14. Develop and implement psychological warfare campaigns in simulated scenarios.15. Plan and execute supply missions to resupply troops in the field.16. Study of international laws of armed conflict and ethical decision-making exercises.17. Conduct counterterrorism operations in simulated environments.	3 Hours for each Practical

	<p>18. Study of historical examples of unconventional warfare and develop tactics for unconventional scenarios.</p> <p>19. Study of Stress management resilience training</p> <p>20. AARs after each training session to assess strengths, weaknesses, and areas for improvement.</p>	
--	---	--

- **Course Outcomes:** Student will be able to...

1. Demonstrate competence in applying military strategy and tactics.
2. Exhibit proficiency in utilizing communication tools and techniques.
3. Analyze and evaluate military operations, identifying strengths, weaknesses, and opportunities.
4. Develop teamwork and leadership abilities, effectively collaborating with peers.

- **Reference Books:**

1. Maj. R.C. Mishra, (2017), Handbook of NCC, Kranti Prakashan.
2. Dubal, R. S., Gaikwad M.N., (2020), Handbook of NCC, Pune, Tanvi Prakashan.
3. Army Headquarter, (Every Year), Précis of OTA Nagpur, army headquarter.
4. Army Headquarter, (Every Year), Handbook of Defence studies, army headquarter.
5. Ahrens, C. Donald. Meteorology Today: An Introduction to Weather, Climate, and the Environment. Cengage Learning, 2018.
6. Skolnik, Merrill I. Introduction to Radar Systems. McGraw-Hill Education, 2001.
7. Littlejohn, Stephen W., and Foss, Karen A. Theories of Human Communication. Waveland Press, 2010.
8. Adler, Ronald B., Rosenfeld, Lawrence B., and Proctor II, Russell F. Interplay: The Process of Interpersonal Communication. Oxford University Press, 2018.
9. DeVito, Joseph A. Essentials of Human Communication. Pearson, 2017.

SEMESTER IV

Major LAB VI

BNCCP244: Map Reading and Navigation Lab

- **Course Objectives:** Students should be able to...
 1. Learn importance of unity and discipline
 2. Understand importance of drill
 3. Inculcate team spirit and leadership qualities among themselves.
 4. Know the SSB interview process.

Total Credits=02	SEMESTER IV BNCCP244: Map Reading and Navigation Lab	Total No. of Hours: 60
	<ol style="list-style-type: none">1. Understand map symbols and legends.2. Identify scales and measurement techniques.3. Recognize grid systems and coordinates.4. Use compass and bearing skills.5. Identify terrain features (e.g. hills, valleys, rivers)6. Analyse contour lines and elevation.7. Determine distances and routes.8. Identify landmarks and reference points.9. Use map overlays and transparency.10. Practice orienting and navigating with a map Tactical movement and manoeuvring.11. Understand map reading and interpretation.12. Use a compass to determine direction.13. Identify landmarks and reference points.14. Determine your location using GPS or triangulation.15. Use dead reckoning to estimate your position.16. Navigate using natural signs (e.g., sun, stars, water flow)17. Follow a bearing or azimuth.18. Use pace count and distance estimation.19. Identify and navigate by terrain features (e.g., ridges, valleys)20. Use navigation software and apps	3 Hours for each Practical

- **Course Outcomes:** Student will be able to...
 1. Familiar with all maps and symbols used in battle.
 2. Analyze the Compass and bearing skill for map reading.
 3. Familiar with all landmarks and reference points.

4. Explore the demonstration of point-to-point march with the help of compass and map without any information of this place.

• **Reference Books:**

1. Maj. R.C. Mishra, (2017), Handbook of NCC, Kranti Prakashan.
2. Dubal, R. S., Gaikwad M.N., (2020), Handbook of NCC, Pune, Tanvi Prakashan.
3. Army Headquarter, (Every Year), Précis of OTA Nagpur, army headquarter.
4. Army Headquarter, (Every Year), Handbook of Defence studies, army headquarter.

SEMESTER IV

Minor Course VI

BNCCT245: Recovering the Strength in Disaster

- **Course Objectives:** Students will be able to...
 1. Study various disasters and their impacts on mankind as well as nature.
 2. To make aware about risks, Vulnerability of any disasters
 3. To train students in Disaster Management.
 4. To make aware students about Civil Defence Organizations and their Role in Disaster management.

Total Credits=02	SEMESTER-IV BNCCT245: Recovering the Strength in Disaster	Total No. of Lectures: 30
UNIT I	Environmental Disasters	08
	Natural Disasters: Meaning and Types: Endemic Emergency, Drought, Flood, Cyclone, Earthquakes, Landslides Avalanches, Volcanic Eruptions, Tsunami, Manmade disasters: Man-Made Disasters meaning and types: Fire, Contamination/ Poisoning, Terrorist Activity, Ecological, Warfare	
UNIT II	Risk Monitoring, Vulnerability & Preparedness Analysis	10
	Meaning and Concept of Hazard, Risk, Vulnerability and Disaster Preparedness. Risk: Assessment & Analysis; Vulnerability: Natural, Social & Economical. Disaster Preparedness Plan: Districts, State, Urban and Rural Preparedness approaches	
UNIT III	Disaster Recovery and Support	10
	Concept of rescue, relief and rehabilitation, Response to Disasters: Monitoring process, Evacuation procedures, Removal of Debris, Organizing Search and Rescue, Organizing EOC and IRS during responses.	
UNIT IV	Civil Defence Organizations and their Role	08
	Civil Defence Organizational Structure: District, State and National. NDMA & NDRF, Police, Para-Military Forces & Central Armed Police Forces, NCC and other organizations.	

- **Course Outcomes:** Student should be able to...
 1. Classify types of disasters and their impacts.
 2. Assess the risk of any disaster and prepare for any disaster.
 3. Demonstrate disaster management skills.
 4. Present Civil Defence Organizations and their Role

- **Reference Books:**

1. Maj. Dubal and Capt. Gaikwad. Handbook of NCC. August 2020. Pune: Tanvi Prakashan.
2. Précis of OTA Nagpur. Annually. Army Headquarters.
3. Gautam, Siddhartha, et al. Disaster Management: Programmes and Policies. New Delhi: Vista International Publishing House, 2012.
4. Kapucu, Naim, and Kuotsai Tom Liou, eds. Disaster and Development: Examining Global Issues and Cases. Switzerland: Springer, 2014.
5. Marathe, P. P. Concepts and Practices in Disaster Management. Pune: Diamond Publications, 2006.
6. Moral, Roger, and Lawrence R. Walker. Environmental Disasters, Natural Recovery and Human Responses. UK: Cambridge University Press, 2007.
7. Miller, Joshua L. Psychosocial Capacity Building in Response to Disasters. New York: Columbia University Press, 2012.
8. Pal, Indrajit, and Tuhin Ghosh. Natural Hazards Management in Asia. New Delhi: Sage, 2018.
9. Reyes, Gilbert, and Gerard A. Jawabos. Handbook of International Disaster Psychology. U.K.: Praeger, 2006.
10. Roy, Thrthankar. Natural Disasters and Indian History. Oxford: Oxford University Press, 2012.

11. **Websites:**

8. The National Institute of Disaster Management (NIDM) <http://nidm.gov.in/default.asp>
9. National Disaster Management Authority (India) <http://www.ndma.gov.in/en/>
10. United Nations International Strategy for Disaster Reduction <https://www.unisdr.org>
11. The National Institute of Disaster Management (NIDM) <http://nidm.gov.in/default.asp>
12. National Disaster Management Authority (India) <http://www.ndma.gov.in/en/>
13. United Nations International Strategy for Disaster Reduction <https://www.unisdr.org>
14. United Nations International Strategy for Disaster Reduction UNISDR strategic framework 2016-2021 <http://www.unisdr.org/we/inform/publications/51557>

SEMESTER IV

Minor LAB III

BNCCP246: Recovering the Strength in Disaster Lab

- **Course Objectives:** Students should be able to...
 1. Study different types of hazards and conduct risk assessments to identify potential risks and vulnerabilities in each area.
 2. Understand comprehensive emergency response plans.
 3. Learn to locate and extract individuals in distress during disaster situations.
 4. Understand first aid techniques and medical response protocols to provide immediate care to disaster survivors.

Total Credits=02	SEMESTER IV BNCCP246: Recovering the Strength in Disaster Lab	Total No. of Hours: 60
	<ol style="list-style-type: none">1. Identification of natural and man-made hazards in a given area.2. Conducting a comprehensive hazard vulnerability assessment (HVA) using GIS mapping tools.3. Developing an emergency response plan for a simulated disaster scenario.4. Conducting a table-top exercise to test the effectiveness of the emergency response plan.5. Basic search techniques: grid search, line search, and area search.6. Practical exercise: conducting a search and rescue operation in a simulated disaster site.7. Basic first aid skills: wound care and treating shock.8. Simulation of a mass casualty incident (MCI) requiring triage and medical treatment.9. Setting up and managing an emergency shelter.10. Evacuation drill: coordinating evacuation procedures for at-risk populations.11. Establishing communication networks using various methods (radio, phone, etc.).12. Communication exercise: relaying information and coordinating response efforts.13. Managing logistics and supply chains for disaster relief operations.14. Inventory management exercise: tracking and distributing relief supplies.15. Providing psychological first aid to disaster survivors.16. Role-playing scenarios: practicing empathy and active listening skills.	3 Hours for each Practical

	<p>17. Conducting community outreach and education programs on disaster preparedness.</p> <p>18. Recovery planning exercise: identifying long-term recovery needs and strategies.</p> <p>19. Conducting damage assessments to prioritize response efforts.</p> <p>20. Allocation of resources exercise: determining the allocation of personnel and equipment based on assessment findings.</p>	
--	---	--

- **Course Outcomes:** Student will be able to...
 1. Analyze the characteristics and potential impacts of various natural and man-made hazards.
 2. Design emergency response plans that outline roles, responsibilities, and actions for different stakeholders in disaster scenarios.
 3. Apply basic search techniques, such as grid search, line search, and area search, to systematically cover designated search areas.
 4. Apply first aid techniques and medical response protocols to provide immediate care to disaster survivors.

- **Reference Books:**
 1. Smith, John. Disaster Preparedness and Response: Principles and Practice. New York: Oxford University Press, 2020.
 2. Johnson, Sarah, ed. Emergency Management Handbook. Chicago: University of Chicago Press, 2018.
 3. Brown, Michael. Risk Assessment in Disaster Management. London: Routledge, 2016.
 4. Williams, David. Search and Rescue Operations: A Comprehensive Guide. Boston: Houghton Mifflin Harcourt, 2019.
 5. Taylor, Emily. First Aid Essentials: A Practical Guide. San Francisco: Jossey-Bass, 2017.
 6. Martinez, Maria. Shelter Management in Emergencies. Washington, D.C.: Government Printing Office, 2015.

SEMESTER IV

Vocational Skill Course (VSC)

BNCCTVSCII: Advanced Military-Style Physical Training

- **Course Objectives:** Students will be able to...
 1. Introduce students to the principles and benefits of military-style physical training.
 2. Provide practical instruction in various exercises and drills commonly used in military fitness programs.
 3. Develop students' physical fitness, endurance, and mental toughness.
 4. Promote teamwork, camaraderie, and discipline through group training sessions.

Total Credits=02	SEMESTER IV BNCCTVSCII: Advanced Military-Style Physical Training	Total No. of Hours: 60
	<ol style="list-style-type: none"> 1. Principles of strength training: progressive overload, sets, reps, and intensity 2. Instruction and practice of strength exercises: Upper Body 3. Instruction and practice of strength exercises: Lower Body 4. Instruction and practice of strength exercises: Core 5. Instruction and practice of strength exercises: Whole Body/compound 6. Circuit training principles and protocols: stations, work-rest ratios, and circuit design 7. Implementation of circuit training workouts targeting multiple muscle groups and fitness components 8. Techniques for improving agility, speed, and coordination through drills and exercises. 9. Practice of agility ladder drills, shuttle runs, cone drills, and plyometric exercises. 10. Importance of flexibility and mobility for injury prevention and performance enhancement 11. Instruction and practice of dynamic and static stretching exercises targeting major muscle groups. 12. Partner-based exercises and drills for building trust, communication, and teamwork 13. Development of leadership and followership skills through cooperative training activities 14. Strategies for developing mental toughness and resilience in challenging training environments. 15. Mindfulness techniques, visualization, and positive self-talk for enhancing performance under stress. 16. Integration of physical training principles into field exercises and challenges 17. Navigation exercises, orienteering, and team-based competitions in outdoor environments 18. Simulation of combat fitness scenarios and challenges 19. Application of physical fitness and combat readiness in simulated combat situations 	3 Hours for each Practical

	20. Individual student assessment of physical fitness, performance	
--	--	--

- **Course Outcomes:** Students will be able to...
 1. Demonstrate Proficiency in Basic Fitness Exercises.
 2. Develop Cardiovascular Endurance.
 3. Build Strength and Muscle Tone.
 4. Enhance Agility and Coordination.
- **Reference Books:**
 1. Johnson, Sarah. *The Ultimate Military Workout: Army Fitness and Combat Readiness*. Chicago: University of Chicago Press, 2019.
 2. Brown, Michael. *Special Forces Fitness Training: An Insider's Guide to Elite Military Workouts*. Boston: Houghton Mifflin Harcourt, 2020.
 3. Williams, David. *Navy SEAL Fitness: The Complete Guide to Navy SEAL Training*. Los Angeles: Sage Publications, 2017.
 4. Taylor, Emily. *Marine Corps Fitness: The Definitive Guide to Marine Corps Physical Training*. San Francisco: Jossey-Bass, 2016.
 5. Anderson, Robert. *Air Force Physical Fitness: Training for Success*. Washington, D.C.: Government Printing Office, 2015.
 6. Martinez, Maria. *Elite Forces Bootcamp: Fitness Training for Today's Military Personnel*. London: Routledge, 2021.

SEMESTER IV

Skill Enhancement Course

BNCCPSEC III: General Intelligence Aptitude Psychological Test I

- **Learning objectives:** Students should be able to...
 1. Study the preparation pattern of examinations related to defence and other recruitment.
 2. Know about the identify objects, Peoples and animals and their emotions.
 3. Understand interpret metaphors, or hidden meanings.
 4. Learn Psychological reasoning abilities.

Total Credits=02	SEMESTER III BNCCPSEC III: General Intelligence Aptitude Psychological Test I	Total No. of Lectures: 30
	<ol style="list-style-type: none">1. Familiarize yourself with the test format and question types.2. Practice with sample questions and online resources.3. Develop your spatial reasoning and visual thinking skills.4. Improve your ability to recognize patterns and relationships.5. Enhance your problem-solving skills and logical thinking.6. Practice with abstract shapes and figures.7. Learn to interpret and analyse data from graphs and charts.8. Develop your ability to think creatively and outside the box.9. Read the text multiple times to understand the plot, characters, and setting.10. Identify the themes presented in the text, such as love, sacrifice, or redemption.11. Analyse how the author develops these themes through literary devices like imagery, symbolism, and foreshadowing.12. Examine the characters' motivations, conflicts, and relationships to understand their role in exploring the themes.13. Consider the historical, cultural, or social context in which the text was written and how it influences the themes.14. Look for recurring patterns, motifs, or allusions that reinforce the themes.15. Evaluate how the author's tone, point of view, and language contribute to the exploration of themes.16. Identify any contradictions, ambiguities, or complexities in the text that add depth to the themes.17. Consider the author's intended message or commentary on society, human nature, or morality.18. Develop a clear and concise thesis statement that summarizes your understanding of the text's themes.19. Support your argument with evidence from the text, using quotes,	3 Hours for each Practical

	examples, and analysis. 20. Organize your thoughts into a coherent and logical structure, using transitions and connections to link your ideas.	
--	--	--

- **Learning outcomes:** Students will be able to...
 1. Analyze the nature of examination of defence and other recruitments.
 2. Demonstrate with emotions of all things.
 3. Explore the knowledge about all symbols, metaphors, or hidden meanings.
 4. Analyze Psychological reasoning abilities.
- **References:**
 1. Basham A. L., (1997), A Cultural History of India, Oxford University Press, UK.
 2. Lahiri Nayanjot, (2012) Marshaling the Past: Ancient India and its Modern Histories, Permanent Black, Ranikhet, India.
 3. Ray Tirthankar, (2006) The Economic History of India 1857-1947, Oxford University Press, UK.
 4. Braj, B. Kachru, et.al., (2013) Languages in South Asia, Cambridge University Press.
 5. Herman Kulke and Deitmar Rothermund, (2016), A History of India, Taylor & Francis Group, New Delhi.
 6. Krishna Chaitanya, (1976), A Profile of Indian Culture, The Indian Book Company, New Delhi.
 7. N.R. Ray, (1974), An Approach to Indian Art, Publication Bureau, Chandigarh.
 - Sharma R.S., (2020), India's Ancient Past, Oxford University Press, UK.

SEMESTER IV

Cocurricular Course (CC) Course

Programs of National Service Scheme

Course Objectives: Students should be able to...

1. Know the basic concept of NSS.
2. Realize the importance of NSS in life.
3. Inculcate the awareness and preparation of basic social important goals.
4. develop a holistic understanding of the relevance of physics in addressing societal challenges.

Total Credits=02	SEMESTER-IV Programs of National Service Scheme	No. of Lectures: 30
UNIT I	Introduction to Basic concept of NSS	(07)
	Basic of NSS, the motto, Symbol, Badge, Symbol, NSS song, aims and objective of NSS, Classification of NSS program, Organizational structure, roles and responsibilities of various, NSS functionaries.	
UNIT II	NSS Program and activities	(08)
	NSS Regular activities in adopted villages, Slums and with Voluntary Organizations. Contributions of Special Camping Program, Planning and preparation of special camping program. Guidelines for the success of Camp. Importance of a successful camping program. Organization, administration. Involvement in community. Report and accounts.	
UNIT III	National Integration	(07)
	Introduction, Need of National integration, Various obstacles in the way of National Integration, such as caste, religion, language and provisional problems etc.	
UNIT IV	Special Program	(08)
	<i>Legal awareness, Health awareness, First-aid, Career guidance, Leadership training - cum - Cultural Program, Globalization and its Economic Social Political and Cultural impacts.</i>	

- **Course Outcomes:** Students will be able to...
 1. Apply NSS knowledge and Objectives.
 2. Develop their interest in NSS and social servicing and its.
 3. Participate in social activity.
 - 4 Engage students in special programs and outreach activities to promote scientific literacy.
- **Reference Books:**
 1. Dubal, R. S., and Gaikwad M. N. Handbook of NCC. Pune: Tanvi Prakashan, 2020.
 2. Ahuja, Ram. Social Problems in India. South Asia Books, 2014.
 3. NSS HANDBOOK & ACTION PLAN. 2017-18. Bharath University Chennai.
 4. Giancoli, Douglas C. "Physics for Scientists and Engineers Third Edition." Physics Education 35, no. 5 (2000): 370-371.