



Karmaveer Bhaurao Patil University, Satara

Syllabus for B. Sc. I Military Science

**Under
Faculty of Science and Technology**

(As per NEP 2020)

With effect from Academic Year 2024-2025

Department of Military Science

Syllabus for Bachelor of Science Part I

Syllabus for B. Sc. Part – I

1. TITLE: Military Science

2. YEAR OF IMPLEMENTATION: New Syllabi for the B.Sc. I Military Science 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	Course I: BNCCT111	4	4	Practical	4	2
		Course II: BNCCT112			Course I: BNCCP113		

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	Course III: BNCCT121	4	4	Practical	4	2
		Course IV: BNCCT122			Course II: BNCCP123		

3. 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: Organization of Infantry Battalion and Weapons

- Practical: 2 Credits

Practical Course II: Lab II

- Attributions:**

BNCCT/Pxyz:

B: B.Sc.

NCC: Military Science

x: Level 1 to 4

T: Theory

yz: Course No

P: Practical

Evaluation Structure

Semester - I

Course Name	Course Code	Internal Evaluation			ESE	Total Marks	Credits
		CCE-I	Mid - Semester	CCE-II			
Fundamentals of Military Science	BNCCT111	5	10	5	30	50	2
National Cadets Corps and Nation Development	BNCCT112	5	10	5	30	50	2
Practical Course - I	BNCCP113	--	--	--	50	50	2

Semester – II

Course Name	Course	Internal Evaluation			ESE	Total Marks	Credits
		CCE-I	Mid - Semester	CCE-II			
National Security of India	BNCCT121	5	10	5	30	50	2
Organization of Infantry Battalion and Weapons	BNCCT122	5	10	5	30	50	2
Practical Course – II	BNCCP123	--	--	--	50	50	2

SEMESTER I

Course I

BNCCT111: Fundamentals of Military Science

- **Course Objectives:** Students should be able to...

1. Understand the NCC organization.
2. Know modes of entry in Armed forces
3. Understand Indian Higher Defence Organizations
4. Familiarize with Paramilitary Forces and Intelligence Services of India

Credits=2	SEMESTER I BNCCT111: Fundamentals of Military Science	Total No. of Lectures (30 Hrs.)
UNIT I	NCC Organization	(08)
	History, Aims, Objectives, Motto and Organization of NCC, NCC Flag and Song; Incentives to NCC cadets, Duties of NCC Cadets, NCC Camps: Types and Conduct.	
UNIT II	Higher Defence Organization	(08)
	Defence and Security Policies: Concept, Formulation, Objective and Linkage, Powers of the President in relation to the Armed forces; Chiefs of staff committee; Parliament and Armed forces; Cabinet Committee on Security; National Security Council; India's Nuclear Doctrine Organization of Ministry of Defence: Basic Organization of Armed Forces, History and Structure of Indian Army; Genesis of Indian Navy and Organization Structure; History and Organization Setup of Indian Air Force, Badges and Ranks	
UNIT III	Eligibility Criteria and Recruitment procedure in Armed Forces	(07)
	Types of Commission, Entry Schemes (Men, Women), JCOs and Other Ranks in Army, Police and CAPF, Indian Navy, Indian Coast Guard, Merchant Navy, Indian Air Force, Civil Aviation	
UNIT IV	Paramilitary Forces and Intelligence Services of India	(07)
	National Security Guard (NSG), Border Security Force (BSF), Coast Guard, Sashastra Seema Bal (SSB), Assam Rifle (AR), Indo-Tibetan Border Police (ITBP), Central Reserve Police Force (CRPF), Central Industrial Security Force (CISF) Intelligence Services: History of India's Intelligence Agency, Role of Intelligence Agency, Intelligence Bureau (IB), Research and Analysis Wing, Military Intelligence, Defence Intelligence Agency (DIA)	

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

1. Explore NCC organization and opportunities.
2. Analyze and avail modes of entry in armed forces

3. Present organization of Defence structure.
4. Distinguish between Armed forces, Paramilitary Forces and Intelligence Services of India

- **Reference Books:**
 1. Dubal, R. S., Gaikwad M.N., (2020), Handbook of NCC, Pune, Tanvi Prakashan.
 2. Army Headquarter, (Every Year), Précis of OTA Nagpur, army headquarter
 3. Army Headquarter, (Every Year), Handbook of Defence studies, army headquarter.
 4. Sujit Dharmapuri, (2018), Adhunic Bhartacha Itihas, Shree Enterprises Publishers.
 5. Banerjee Gautam, (2016), India's National Defence Policy: Defining Defence Reform and Military Modernizations, Nirali Prakashan, New Delhi.
 6. Pant Harish V, (2017), Handbook of India's Defence Policy: Theme structure and doctrine, Routledge India.
 7. Venkataraman R, (2011), India's Higher Defence Organization and Management, KW Publisher, New Delhi.
- 8. **Online Resource:**

Organization Structure: <https://mod.gov.in/dod/organizationstructure>

SEMESTER I

Course II

BNCCT112: National Cadets Corps and Nation Development

- **Course Objectives:** Students should be able to...

1. Develop their interest in social service and its importance.
2. Understand various government activities of social development.
3. Study importance of Hygiene, Sanitation and First aid
4. Learn Phenomena of Gender discrimination nature, causes, & Solutions.

Credits=2	SEMESTER I BNCCT112: National Cadets Corps and Nation Development	No. of Lectures (30 Hrs.)
UNIT I	Social Service and Community Development	(07)
	Basics of Social Service, Rural Development Programmes, Social Security Schemes of Government: Atal Pension Yojana, Pradhan Mantri Jeevan Jyoti Yojana, Pradhan Mantri Suraksha Bima Yojana; Non-Government Organizations (NGO's), Contribution of NGOs; Contribution of Youth; Role of NCC	
UNIT II	Social Services and Community Development Activities	(08)
	Social Evils, Protection of Children & Women Safety, Women Health and Sanitation, Beti Padhao Beti Bachao, Drug Abuse, Mission Indradhanush (Vaccination), Traffic Awareness, Road/Rail Travel Safety, New Initiatives, Digital Awareness, Cyber and Mobile Security Awareness Environmental Awareness: Tree Plantation, Pollution, Waste Management, Swachh Bharat Abhiyan, Water and Energy Conservation	
UNIT III	Health Hygiene and First Aid	(08)
	Hygiene and Sanitation: (Personal and Camp) Personal Hygiene, Personal hygiene and preventive measures, Food Hygiene, Purification of water and its storage, Camp Hygiene First Aid: Common Medical Emergencies and Snake, Scorpion and Dog Bite; Asphyxia; Types of bandages, Different Type of Fractures; Treatment and Care of Wounds, Methods of hospitalization (Ghayal Vyakti Ko Le Jane ka Tarika)	
UNIT IV	Human Rights	(07)
	Human Rights Meaning & Definition; Universal declaration of Human Rights progress in respect of Human Rights	

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

1. Participate in social services for Community Development
2. Demonstrate in Social Service activities for Community Development

3. Illustrate self and community hygiene as well as types of first aids after any incidents
4. Classify human rights and social justice

- **Reference Books:**
 1. Dubal R.S., Capt. Gaikwad M.N., (August 2020), Handbook of NCC- Tanvi Prakashan.
 2. Army Headquarter (Every Year), Précis of OTA Nagpur, army headquarter
 3. Army Headquarter (Every Year), Handbook of Defence studies, army headquarter
 4. Jack Donnelly, (2003), Universal Human Rights in Theory and Practice, 3rd ed Ithaca.
 5. Sujit Dharmpatre, (2018), Adhunik Bhartacha Itihas, Shree Enterprises Publishers.
 6. Buergenthal Thomas, (1995), International Human Rights in Nutshell,2nd ed, West Publishing co.
 7. Scott Davidson, (1993), Human Rights, Open University Press, Buckingham.
 8. Jack Donnelly, (1985), The Concept of Human Rights, Croom Helm, London.
 9. Maurice Cranston, (1973), What are Human Rights? Journal Storage, London.
 10. Palmer and Perkins (1970) International Relations, 3rd Edn. Scientific Book Agency, Calcutta.

SEMESTER I
LAB I
BNCCP113: Basic Training of NCC Foot Drill
(Based on BNCCT111 and BNCCT112)

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

Credits=2	SEMESTER I BNCCP113: Basic Training of NCC Foot Drill	No. of Hours 60
	<ol style="list-style-type: none"> 1. Introduction to kit items 2. Wearing of uniform 3. Drill ki Aam Hidayaten aur Words of Command 4. Savdhan, Vishram aur Aram se 5. Dahine, Bayen, Peeche Mudna 6. Kadwar Sizing, Teen Line Banana, Khuli Line aur Nikat Line 7. Dahine, Baen, Aage aur Piche Kadam lena 8. Tej Chal aur Tham 9. Dhire Chal aur Tham 10. Tej Chal se Mudna 11. Tej Chal se Salute Karna 12. Tej Kadam Taal aur tham, 13. Tej Kadam Taal se Kadam Badalna 14. Teenon Teen se Ek File banana 15. Ek File se Teenon Teen banana 	4 Hours for each Practical

- **Course Outcomes:** Student will be able to...
 1. Perform foot drill procedure
 2. Demonstrate leadership traits
 3. Demonstrate unity and discipline
 4. Create team spirit and leadership qualities among themselves
- **Reference Books:**
 1. OTA Kamtee, (Every Year), Drill and Weapon training, Army Headquarter, New Delhi.
 2. Maj. R.C. Mishra, (2017), Handbook of NCC, Kranti Prakashan.

SEMESTER II
Course III
BNCCT121: National Security of India

- **Course Objectives:** Students should be able to...
 1. Study importance of National Integration
 2. Understand need of national security
 3. Study threats to national security
 4. Familiarize with approaches and Policies in Tackling Security Challenges

Credits=2	SEMESTER II BNCCT121: National Security of India	No. of Lectures (30 hrs.)
UNIT I	National Security	(08)
	<p>Meaning and Elements: Nation, State; Nationalism and National Security; National power and National Security; Key concepts of Regional, Collective and Comprehensive Security</p> <p>India's National Security: Understanding the nature of Internal and External Security Dimensions; Conceptual Framework of India's National Security; National Interest and National Security</p>	
UNIT II	Threats to National Security	(07)
	<p>Internal Threats: Insurgency and Naxalite Movement, Human and Drug Trafficking, Environment Issues: Water and Food Security</p> <p>External Threats: Cyber Security, Cross-border threats, Jihadi Terrorism.</p>	
UNIT III	Policies in Tackling Security Challenges	(07)
	Approaches of Armed Forces, Political Institutions, Civil Society, Media in Tackling Security Challenges	
UNIT IV	National Integration and Awareness	(08)
	National Integration, Importance and Necessity, Factors affecting National Integration, Measures to Achieve National Integration, Unity in Diversity.	

- **Course Outcomes:** Student will be able to...
 1. Define National integration and the role of students in maintaining it.
 2. Explore particulars of National security.
 3. Figure out threats to national security.
 4. Utilize approaches and Policies in Tackling national security Challenges.

- **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. Balchandran Vappala, (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, Vargina 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. NayakNihar 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.
11. Singh Priyanka, (ed), (2016), The Role of Media in Promoting Regional understanding in South Asia, IDSA: New Delhi.
12. Pandalai Shruti (ed), (2019), Combating Terrorism Evolving Asian Perspective, New Delhi, Pentagon Press, IDSA.
13. K. Subramanyam, (1972). Our National Security, Economic and Scientific Research Foundation, New Delhi.

SEMESTER II
Course IV
BNCCT122: Organization of Infantry Battalion and Weapons

- **Course Objectives:** Students should be able to...

1. Study Tasks and Role of Fighting Arms
2. Understand Tasks and Role of Supporting Arms and Services
3. Study various weapons, firing range
4. Learn modern weapons systems and their characteristics

Credits=2	SEMESTER II BNCCT122: Organization of Infantry Battalion and Weapons	No. of Lectures (30 Hrs)
UNIT I	Tasks and Role of Fighting Arms	(07)
	Infantry: meaning, Role and its Organization Mechanized Infantry: meaning, Role and its Organization Armoured Corps: meaning, Role and its Organization Artillery: meaning, Role and its Organization	
UNIT II	Task and Role of Supporting Services	(07)
	Corps of Engineers: meaning, Role. Corps of Signal: meaning, Role and its Organization Introduction to Other Corps: Army Service Corps; Army Ordnance Corps; Army Medical Corps etc.	
UNIT III	Weapon Training I	(09)
	.22 Rifle: Characteristics, Ammunition, Stripping, Assembling, Cleaning, Loading, Unloading, Firing Position: Aiming, Trigger Control and its operation. 7.62mm SLR Rifle: Characteristics, Ammunition, Stripping, Assembling, Cleaning, Loading, Unloading, Firing Position: Aiming, Trigger Control and its operation. Firing Range: Range procedure and Safety Precautions, Theory of group and Snap Shooting, Short range firing	
UNIT IV	Weapon Training II	(07)
	Personal Weapons: LMG, INSAS Rifle, CMG, Pistol, Grenade Infantry Company Support Weapons: 7.62 mm Dragunov Sniper Rifle., 7.62mm Medium Machine Gun, 30 mm Automatic Grenade	

	<p>Launcher, 84 mm Rocket Launcher etc.</p> <p>Infantry Battalion Support Weapons: 81mm Mortars, ATMG etc.</p> <p>Missiles: Types and characteristics of Missiles: Indigenous and Exotic, Current Indian Missile programme.</p>	
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- **Course Outcomes:** Student will be able to...

1. Present tasks and Role of Fighting Arms.
2. Present tasks and Role of Supporting Arms and Services
3. Explain types of infantry weapons
4. Describe characteristics of modern Weapons

- **Reference Books:**

1. Dubal R. S., Capt. Gaikwad M.N., (August 2020), Handbook of NCC Tanvi prakashan.
2. Army Headquarter, (Every Year), Précis of OTA Nagpur, army headquarter.
3. India's Strategic Nuclear and Missile Programmes, (2017), A baseline study for non-proliferation compliance Public Release Project Alpha Centre for Science and Security Studies King's College London.
4. Rear Admiral Sr Mohan, vsm (retd), (2016), Fundamentals of Guided Missiles, Defence research and Development Organization, Ministry of Defence, New Delhi.
5. Harsh Pant, (2012), the rise of the Indian Navy, Ashgate Publishing Limited, England.
6. Lt. Col. M. D. Sharma, (2008) Paramilitary Forces of India, Kalpaz publications, New Delhi.
7. Ashok Kapur, (2006), India to regional to world power, Routledge Taylor and Francis group, New Delhi.
8. Simone Payment, (2004), Frontline Marines, The Rosen Publishing Group Inc, New York.
9. Lt. Col. Gautam Sharma, (1996), Nationalism of the Indian Arin (1885-1997), Allied publishers limited, Mumbai
10. William Wild, (1990), Supporting Combined Arms Combat Capability with Shared Electronic Maintenance Facilities, Rand Corporation, Fort Belvoir. VA.
11. Praval K. C., (1987), Indian Army After Independence, lancer publishers and distributors, New Delhi.
12. **Readings:**
 - Ministry of Defense, Annual Reports
 - Defense Yearbook (Annual)
 - <https://nptel.ac.in/courses/101108056/module4/lecture8.pdf>

SEMESTER II
LAB II
BNCCP123: Rifle Drill and Weapon Training
(Based on BNCCT121 and BNCCT122)

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

Credits=2	SEMESTER II BNCCP123: Rifle Drill and Weapon Training	No. of Hours 60
	<ol style="list-style-type: none"> 1. Rifle ke Saath Savdhan, Vishram aur Aaram se 2. Rifle ke Saath Parade Par aur Saj 3. Rifle ke Saath Visarjan aur Line Tod 4. Bhumi Shastra aur Uthao Shastra 5. Bagal Shastra aur Baju Shastra 6. Rifle Ke Sathe Tej Chal aur Tham 7. Introduction, Stripping, assembling aur care of .22 Rifle 8. Cleaning and sight setting of .22 Rifle 9. Lying Position and Hold 10. Kneeling Position and Hold 11. Standing Position and Hold 12. Study of Aiming: range and Targets 13. Study of Aiming: Alteration of sight 14. Study of Range procedure 15. Range safety Precautions 	4 Hours for each Practical

- **Course Outcomes:** Student will be able to...
 1. Apply Weapon drill procedure
 2. Inculcate leadership traits.
 3. Demonstrate unity and discipline
 4. Present and Participate in SSB procedure.

- **Reference Books:**

1. OTA Kamtee, (Every Year), Drill and Weapon training, Army Headquarter, New Delhi.
2. Maj. R.C. Mishra, (2017), Handbook of NCC, Kranti Prakashan.