VIDYASAGAR UNIVERSITY

Midnapore, West Bengal

PROPOSED CURRICULUM&SYLLABUS (DRAFT) OF

BACHELOR OF SCIENCE WITH MILITARY SCIENCE

(MULTIDISCIPLINARY STUDIES)

3-YEAR UNDERGRADUATE PROGRAMME

(w.e.f. Academic Year 2023-2024)

Based on

Curriculum & Credit Framework for Undergraduate Programmes

(CCFUP), 2023& NEP, 2020

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VIDYASAGAR UNIVERSITY

BACHELOR OF SCIENCE IN MATHEMATICS & COMPUTER SCIENCES WITH MILITARY SCIENCE

(*Under CCFUP, 2023*)

Level	YR.	SEM	Course Type	Course Code	Course Title	Credit	L-T-P	Marks		
								CA	ESE	TOTAL
B.Sc. in Math & Comp. Sc. with Military Science	2nd	III	**SEMESTER-III**							
			Major-A2	MLSPMJ02	T: Man management in Armed Force & Defense Organization of India – II *(To be studied by students taken Military Science as Discipline- A)*	4	3-1-0	15	60	75
			Major-A3	MLSPMJ03	T: Military History of India and Military Geography; P: Practical *(To be studied by students taken Military Science as Discipline- A)*	4	3-0-1	15	60	75
			SEC	SEC03	P: Cyber Security & Crime *To be chosen by the students taken Military Science as Discipline C.*	3	0-0-3	10	40	50
			AEC	AEC03	Communicative English-2 (***common for all programmes***)	2	2-0-0	10	40	50
			MDC	MDC03	Multidisciplinary Course-3 (***to be chosen from the list***)	3	3-0-0	10	40	50
			Minor-3 (Disc.-C3)	MLSMIN03	T: Military History of India and Military Geography; P: Practical *(To be studied by students taken Military Science as Discipline- C)*	4	3-0-1	15	60	75
					Semester-III Total	20				375
		IV	**SEMESTER-IV**							
			Major-B2		*(Same as MajorA2 for Military Science taken as Discipline-B)*	4	3-1-0	15	60	75
			Major-B3		*(Same as Major–A3 for Military Science taken as Discipline-B)*	4	3-0-1	15	60	75
			Major (Elective) -1	MLSMJE-01	T: Defense Industrial Potential, Transportation and Communication System in India *(To be studied by students taken Military Science as Discipline- A)*	4	3-1-0	15	60	75
			AEC	AEC04	MIL-2 (***common for all programmes***)	2	2-0-0	10	40	50
			Minor -4 (Disc.-C4)	MLSMIN04	T: Defense Industrial Potential, Transportation and Communication System in India *(To be studied by students taken Military Science as Discipline- C)*	4	3-1-0	15	60	75
			Summer Intern.	IA	Internship / Apprenticeship- **activities to be decided by the Colleges following the guidelines to be given later**	4	0-0-4	-	-	50
					Semester-IV Total	22				400
					TOTAL of YEAR-2	42	-	-	-	775

MJP = Major Programme (Multidisciplinary), MI = Minor, A/B = Choice of Major Discipline; C= Choice of Minor Discipline; SEC = Skill Enhancement Course, AEC = Ability Enhancement Course, MDC = Multidisciplinary Course, CA= Continuous Assessment, ESE= End Semester Examination, T = Theory, P= Practical, L-T-P = Lecture-Tutorial-Practical, MIL = Modern Indian Language

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MAJOR (MJ)

Major A2/B2: Man management in Armed Force and Defense Organization of India – II

Credits 04
Full Marks: 75

Major A2/B2T: Man management in Armed Force and Defense Organization of India – II Credits 04

Course contents:

Unit A: Military leadership, Man management in Armed Force, Military awards & Decoration

a. Discipline: Definition, purpose & tools of maintaining discipline. Discipline and duties of a citizen, leadership taints.
b. Awareness of major problems -- communal problem, health, sanitation, public service. Economic,handicaps, ignorance of education. Forest ecology and wild life, Health and Hygiene, infective diseases, personal hygiene and preventive diseases, water supply, disposal of garbage.
c. Personality: traits, group behavior and communication skills in organizing armed force.
d. Leadership: Meaning, definition, types & levels. Theories of leadership. Military leadership - meaning, attribute, importance and role in training & warfare.
e. Man management -- concept, importance - Motivation and morale factors and their utilization in the armed forces.
f. Awards & Decoration: Military orders, decoration, medals, awards and Honours – international aspects. Military awards and decorations of India.

Unit – B: Defense organization of India -II

Second line of Defenses: Armed Force of the Union -- History, formation, division, functions.
a) Paramilitary Forces: Indian Coast Guard, Assam Rifles, Special Frontier Forces.
b) Central Armed Police Forces: Central Reserve Police Forces (CRPF), Boarder Security Forces (BSF), Indo - Tibetan Boarder Police (ITBP), Shasatra Seema Bal (SSB), Central Industry Security Force (CISF).
c) Other Forces: National Security Guards (NSG), Special Protection Group (SPG), Railway Protection Forces (RPF).
d) Special Forces: Para Special Force [Para (SF)], Ghatak Force, Marine Commando (MARCOS), Garud Commando Force.
e) National Cadet Corps(NCC)
f) Territorial Army

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Major A3/B3: Military History of India and Military Geography **Credits 04**
Full Marks: 75

Major A3/B3T: Military History of India and Military Geography **Credits 03**

Course contents:

Module -I: Military History

a. Definition, Concept, Significance to study Military history. Military system of India since Vedic era to modern India.. A brief survey of the military tradition of India. Weapon, Battle dress. Kautilya's philosophy of war organization and art of war, weapons and interstate relation. War pattern and tactics in different periods in India – a comparative study. Historiography of military history of India.

b. Biographies of renowned Generals:

i. Niccolo Machiavelli (1469-1527), Giulio Douhet (1869 - 1930), Jorge Smith Patton (1885-1945), Bernard Law Montogomery (1887-1976), J. E. Rommel (1891-1944)
ii. Kodandera Madappa Cariappa (1899-1993), S.H.F.J. Manekshaw (1914-2008), Subrata Mukherjee (1911- 1960), Sundarilal Matharadas Nanda (1915-2009).

c. Indian Army War Heroes – PVCs.

d. Study of the following important battles of India with its background, causes, results and its review: Kashmir Conflict (1947), Operation of Mizo National Front (1966), Indo Pak war 1965, 1971, Operation Cactus (1988), Sri-Lanka Mission (1987-1990) & Kargil war (1999).

Module -II: Military Geography

a) Introduction: Meaning, nature, scope and elements of Military Geography. Man and Environment. Role of geography in military application. Military geography in India and defense problem in relation thereto-role of geography in different warfare.

b) Evolution of Military Geography: a) History & Development. b) Founders of Military Geography - F. Ratzal, A.T. Mahan, c) Sir. Halfred Mackinder, Karl Haushofer, N.J. Spykman

c) Inter-State relations & Geographical factors: a) Frontiers and Boundaries of India - its meaning & differences types of borders and boundaries. b) Communication routes- land, sea and aerial- strategic scope. c) Population and Power

d) Geography and Foreign Policy of India: a) India's Geo-strategic significance, b) India's borders, c) Indian Ocean territory and strategic significance.

e) Applied Military Geography: Brief idea on a) Global Positioning System (GPS), b) Global Information System (GIS) and c) Remote Sensing.

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f) Theoretical aspects of Map Reading: Introduction to different types of Maps, and Conventional Signs. Scales & Grid System. Topographical Relief features, Contours and Gradients - Cardinal points and Types of North - Types of bearings and use of Service Protractor - Prismatic compass and its use. Setting a Map - finding North and own position - Map to Ground, Ground to Map - Point to Point March – use of GPS.

Major A3/B3P: Military History and Military Geography (Practical) Credits 01

Practical Outlines:

1. Military History:

a. Prepare sand models of Battle formation of the following Battles:

i) Indo-Pak war of 1947, 1962, 1971,
ii) Kargil war, 1999.

b. Draw sketches on plan papers of the following Battles:

i) Indo-Pak war of 1947, 1962, 1971,
ii) Kargil war, 1999.

2. Map Reading:

1. Map – civil and military
2. Concept of military maps and map index
3. Topographical sheet
4. Scales and grid system
5. Conventional sign – civil and military
6. Compass: liquid prismatic compass – uses of compass during day and night
7. Location and identification of objects from ground to map and vice-versa
8. Preparation of night march chart
9. Preparation of weather chart
10. Field sketching, eye and memory sketching
11. Determination of visibility of survey maps of hilly region by comparing gradients and section drawing methods.

Suggested Readings:

1. K. Subrahmanum, Safeguarding the Republic Ed, Aruna Asaf Ali, India's Unity and Security Challenges
2. Major Shiam Dal & P. K. Mukherjee, Text Book of Military Science, Vol. I & II 3
3. Dolly Arora, Internal Security in India
4. Bhatia, H.S. Military History of British India, Deep & Deep Publication. New Delhi
5. J.N. Sarkar, Military History of India
6. Akhtar Majee, No Farewell to Arms: Strategic issues in International Relations, New Delhi: Lancer Publishers Pvt. Ltd., 1991
7. Yengeny Dologopolov, The Army and the Revolutionary Transformation of Society, Moscow: Progress Publishers
8. Halperin Morton, Contemporary Military Strategy, Faber & Faber; Revised edition (December, 1970)
9. Sexena K.M. The Miltary system of India, Sterling Publication, New Delhi.
10. Sali M.L., India China Border Dispute, Ashish Publication, New Delhi.
11. Major D.K. Plait, The Essentials of Military Knowledge

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Major Elective (MJE)-01: Defense Industrial Potential, Transportation and Communication System in India **Credits 04 (Marks: 75)**

Major Elective (MJE)-01T: Defense Industrial Potential, Transportation and Communication System in India **Credits 04**

Course contents:

Unit-I: Defense Industrial Potential in India

1. Resource – Definition, importance. Resource and its importance in national security.
2. Role of industrialization in Defense. Effects of industrialization on economy and defense of a country. Industrialization of India and its impacts on defense.
3. Scientific and industrial development in India since independence. Defence industries development of India since independence. Conversion of civil industries to defense industries.
4. Strategic minerals and logistic problems of India.
5. Defense industrial centers of India.

Unit-II: Transportation System in India

1. Transportation system in Indian- concept, types.
2. Significance and importance of transport in National Security.
3. Development of Roadways, Railways, Airways and Naval ways.

Unit-III: Communication System in India

1. Communication system in India- concepts. Significance and importance of communications in National security.
2. Types of communications: Postal services in India, Telegraph, telephones, wireless, internet. Postal and Telecom service in Defense.
3. Role of other communication system for defense.
4. Media: Public information, Publicity and Propaganda and its impact on National security.

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MINOR (MI)

MI-3/ C3: Military History of India and Military Geography **Credits 04 Full Marks: 75**

MI-3/ C3T: Military History of India and Military Geography **Credits 03**

Course contents:

Module -I: Military History

a. Definition, Concept, Significance to study Military history. Military system of India since Vedic era to modern India.. A brief survey of the military tradition of India. Weapon, Battle dress. Kautilya's philosophy of war organization and art of war, weapons and interstate relation. War pattern and tactics in different periods in India – a comparative study. Historiography of military history of India.

b. Biographies of renowned Generals:

i. Niccolo Machiavelli (1469-1527), Giulio Douhet (1869 - 1930), Jorge Smith Patton (1885-1945), Bernard Law Montogomery (1887-1976), J. E. Rommel (1891-1944)
ii. Kodandera Madappa Cariappa (1899-1993), S.H.F.J. Manekshaw (1914-2008), Subrata Mukherjee (1911- 1960), Sundarilal Matharadas Nanda (1915-2009).

c. Indian Army War Heroes – PVCs.

d. Study of the following important battles of India with its background, causes, results and its review: Kashmir Conflict (1947), Operation of Mizo National Front (1966), Indo Pak war 1965, 1971, Operation Cactus (1988), Sri-Lanka Mission (1987-1990) & Kargil war (1999).

Module -II: Military Geography

a) Introduction: Meaning, nature, scope and elements of Military Geography. Man and Environment. Role of geography in military application. Military geography in India and defense problem in relation thereto-role of geography in different warfare.

b) Evolution of Military Geography: a) History & Development. b) Founders of Military Geography - F. Ratzal, A.T. Mahan, c) Sir. Halfred Mackinder, Karl Haushofer, N.J. Spykman

c) Inter-State relations & Geographical factors: a) Frontiers and Boundaries of India - its meaning & differences types of borders and boundaries. b) Communication routes- land, sea and aerial- strategic scope. c) Population and Power

d) Geography and Foreign Policy of India: a) India's Geo-strategic significance, b) India's borders, c) Indian Ocean territory and strategic significance.

e) Applied Military Geography: Brief idea on a) Global Positioning System (GPS), b) Global Information System (GIS) and c) Remote Sensing.

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f) Theoretical aspects of Map Reading: Introduction to different types of Maps, and Conventional Signs. Scales & Grid System. Topographical Relief features, Contours and Gradients - Cardinal points and Types of North - Types of bearings and use of Service Protractor - Prismatic compass and its use. Setting a Map - finding North and own position - Map to Ground, Ground to Map - Point to Point March – use of GPS.

MI-3/ C3P: Military History and Military Geography (Practical) Credits 01

Practical Outlines:

1. Military History:

a. Prepare sand models of Battle formation of the following Battles:

i) Indo-Pak war of 1947, 1962, 1971,
ii) Kargil war, 1999.

b. Draw sketches on plan papers of the following Battles:

i) Indo-Pak war of 1947, 1962, 1971,
ii) Kargil war, 1999.

2. Map Reading:

1. Map – civil and military
2. Concept of military maps and map index
3. Topographical sheet
4. Scales and grid system
5. Conventional sign – civil and military
6. Compass: liquid prismatic compass – uses of compass during day and night
7. Location and identification of objects from ground to map and vice-versa
8. Preparation of night march chart
9. Preparation of weather chart
10. Field sketching, eye and memory sketching
11. Determination of visibility of survey maps of hilly region by comparing gradients and section drawing methods.

Suggested Readings:

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2. Major Shiam Dal & P. K. Mukherjee, Text Book of Military Science, Vol. I & II 3
3. Dolly Arora, Internal Security in India
4. Bhatia, H.S. Military History of British India, Deep & Deep Publication. New Delhi
5. J.N. Sarkar, Military History of India
6. Akhtar Majee, No Farewell to Arms: Strategic issues in International Relations, New Delhi: Lancer Publishers Pvt. Ltd., 1991
7. Yengeny Dologopolov, The Army and the Revolutionary Transformation of Society, Moscow: Progress Publishers
8. Halperin Morton, Contemporary Military Strategy, Faber & Faber; Revised edition (December, 1970)
9. Sexena K.M. The Miltary system of India, Sterling Publication, New Delhi.
10. Sali M.L., India China Border Dispute, Ashish Publication, New Delhi.
11. Major D.K. Plait, The Essentials of Military Knowledge

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MI-4/ C4: Defense Industrial Potential, Transportation and Communication System in India **Credits 04 Full Marks: 75**

MI-4/ C4T: Defense Industrial Potential, Transportation and Communication System in India **Credits 04**

Course contents:

Unit-I: Defense Industrial Potential in India

6. Resource – Definition, importance. Resource and its importance in national security.
7. Role of industrialization in Defense. Effects of industrialization on economy and defense of a country. Industrialization of India and its impacts on defense.
8. Scientific and industrial development in India since independence. Defence industries development of India since independence. Conversion of civil industries to defense industries.
9. Strategic minerals and logistic problems of India.
10. Defense industrial centers of India.

Unit-II: Transportation System in India

4. Transportation system in Indian- concept, types.
5. Significance and importance of transport in National Security.
6. Development of Roadways, Railways, Airways and Naval ways.

Unit-III: Communication System in India

5. Communication system in India- concepts. Significance and importance of communications in National security.
6. Types of communications: Postal services in India, Telegraph, telephones, wireless, internet. Postal and Telecom service in Defense.
7. Role of other communication system for defense.
8. Media: Public information, Publicity and Propaganda and its impact on National security.

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SKILL ENHANCEMENT COURSE (SEC)

SEC 3: Cyber Security & Crime **Credits 03 Full Marks: 50**

SEC3P: Cyber Security & Crime

Course Outline:

Unit I: Introduction to Cyber Technologies. Information Systems - Networks/LAN/WAN - Military Sensors.

Unit II: Types of Cyber Crime. Hacking - Password Cracking - Insecure Network Connection – Theft at Tele Communication Services.

Unit III: Impact of Cyber Crime on National Security. Impact on Armed Forces & Law enforcement Agencies' Information Systems - Impact on National Economy/Market - Impact on Citizen Security.

Unit IV: Detection and Prevention methodologies. Risk Identification - Levels of Protection - Cyber Defensive Measures.

Unity V: Cyber Laws. Overview of General Laws and Procedures in India - Introduction to Indian Cyber Law - Cyber Crime and Digital Evidence- Indian Perspective.

Practical Assessment:

1. Case studies Report - 10 marks
2. Newspaper clippings - 10 marks
3. Case Presentation - 10 marks
4. Viva-voce - 10 marks

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