

Summary

FYUGP -MAJOR- MATHEMATICS COURSE ACCORDING TO NEP-2020

SEMESTER-1

MAJOR-1	Calculus	Course Content: Differential calculus, Integral Calculus, Conics and Vector calculus	
MINOR-1A	physics	Chemistry	Economics
MDC-1	PSYCHOLOGY/ PHYSICS/CHEMISTRY/ ENGLISH/ZOOLOGY(other than minor)		
SEC	CYBER DEFENCE	COURSE CONTENT-1-Basic cyber security concept and Introduction, cyberspace and law, cybercrime: mobile and wireless device, organisational implication and privacy issues.	
VAC	1-Understanding India 2-Health & Wellness, Yoga Education And Sport And Fitness 3-Global Citizenship Education And Education For Sustainable Development (Any Two In Sem-1)	1-COURSE CONTENT- Background of India's culture, Growth and development of Indian education and literature, Leaders of India's freedom struggle, Geographical feature of India, The people of India, Indian constitution, Political ideas, The Indian economy and life and ideas of Acharya Vinoba Bhave. 2- Health and wellness, food and nutrition, yoga education and sport and fitness as importance of physical education. 3-GCE- A Brief Overview, A General Understanding, Theory Of One State, One World, Global Village, Global Peace & Security, UN Universal Declaration Of Human Right, 1948, Global Challenges And Global Solution	
AEC	ENGLISH	COURSE CONTENT: Report writing for news paper, Translation, Reading comprehension, preparing different type of resume and official corresponding	

Note:

MDC in 30 Subjects

SEC in 19 Subjects

Minor Vocational in 9 Subjects

Students of all stream who wants to choose other than above mention subject have been suggested to see the syllabus in details uploaded on VBU website.

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SEMESTER-2

MAJOR-2	ALGEBRA	Trigonometry, Relation and Function, Theory of Numbers, Matrices and System of Linear Equation, Eigen values and Eigen vectors of Matrices
MAJOR -3	REAL ANALYSIS- 1	Real Number system, Sequences of Real Numbers, Infinite Series
MINOR-2A	ORGANIC FARMING/TOURISM AND HOSPITALITY	<p>COURSE CONTENT: 1-Definition, need, scope, principals and relevance to modern agriculture. Eco-friendly farming system. Fundamental of Insect, Disease and weed management under organic form of production. Botanical pyrethrum and operational structure of NPOP. Inspection, processing, marketing and export potential of organic products.</p> <p>2-Introduction to tourism, Basic of tourism, Type of tourism and concept of tourist palace.</p>
MDC-1	PSYCOLOGY/ PHYSICS/CHEMISTRY/ ENGLISH/ZOOLOGY/ECONOMICS(other than minor-1 and other than sem-1 MDC)	
SEC	INFORMATION TECHNOLOGY	<p>COURSE CONTENT: Computer basic, Data communication, network and Internet, Ms-word, excel and power point</p>
AEC	HINDI	<p>इकाई 1 – लेखन कौशल लेखन अर्थ, विशेषताएँ, महत्व एवं प्रकार, मीडिया लेखन (समाचार, सम्पादकीय, फीचर, संपादक के नाम पत्र आदि), संवाद लेखन, जीवन वृत्त (वायोडाटा)</p> <p>इकाई 2 – प्रयोगानुकूल हिंदी सा</p> <p>मान्य परिचय टिप्पण, प्रांशुपण, प्रतिवेदन, ज्ञापन, अनुवाद, संक्षेपण, पुनर्लेखन</p>

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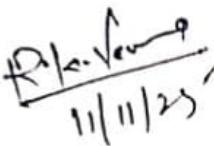
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SEMESTER-3

MAJOR-4	DEFFERENTIAL EQUATION	COURSE CONTENT: First order differential Equations, Second order linear deferential Equations, High order linear deferential Equations, Series solutions of deferential Equations.
MAJOR -5	MULTIVARIATE CALAULUS	COURSE CONTENT: Partial differentiation, Differentiation, Extrema of Function, Vector Calculus, Double and Triple Integrals, Grenn's Stocks and Gauss Divergence Theorem.
MINOR-1B	Continue Minor 1A as Minor 1B	Same subject which one is taken in Sem-1 as 1A will be continue as 1B
MDC-1	GEOLOGY/ PHYSICS/CHEMISTRY/ ENGLISH/ZOOLOGY/ECONOMICS(other than minor-1 and other than sem-1 & Sem-2 MDC)	
SEC	FINANCIAL LITERACY/ DIGITAL MARKETING	COURSE CONTENT: 1- Introduction, Financial planning and budgeting, Banking services, Financial services from post office, Protection and Investment Related Financial Services. 2- Introduction to digital marketing, online branding and communication, Digital marketing Channels, Website Optimization, Social Media Marketing, Data analysis and metrics, Legal and Ethical consideration.
AEC	HINDI/ URDU/BENGLA- MODERN INDIAN LANGUAGES/TRL	


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SEMESTER-4

MAJOR-6	INTRODUCTION TO GROUP THEORY	COURSE CONTENT: Symmetries of a square, Dihedral groups, definition and examples of groups, abelian groups, permutation groups, Cycle notation for permutations, even and odd permutations, quaternion group and its matrix representation, elementary properties of groups. Order of a group element and order of a group, Subgroups and examples, theorems on subgroups, normal subgroups and their properties, centralizer (normalizer) of a group element, Centre of a group.: Properties of cyclic groups, classification of subgroups of cyclic groups.: Group homomorphism, kernel of homomorphism, properties of homomorphism, isomorphism, Factor group (quotient groups) and isomorphism Theorem: Quotient group, Cauchy's theorem for finite abelian groups, Group isomorphism, properties of isomorphisms, First, Second and Third isomorphism theorems, Cayley theorem.: Direct Product: External direct product of a finite number of groups,
MAJOR-7	PARTIAL DIFFERENTIAL EQUATION	COURSE CONTENT: First Order Partial Differential Equations, Second Order Partial Differential Equations with Constant Coefficients, Second Order Partial Differential Equations with Variable Coefficients, Calculus of Variations-Variational Problems with Fixed Boundaries, Calculus of Variations-Variational Problems with Moving Boundaries
MAJOR-8	NUMERICAL ANALYSIS	COURSE CONTENT: Numerical Methods for Solving Algebraic and Transcendental Equations, Numerical Methods for Solving Linear Systems, Interpolation, Numerical Differentiation and Integration, Initial and Boundary Value Problems of Differential Equations
MAJOR-9	RING THEORY	COURSE CONTENT: Introduction to ring, Factorization and Euclidean Domain: Divisibility in a ring, associates, irreducible elements, prime elements, GCD of two elements, relatively prime elements, theorems, Units, divisors of zero, Integral domain, Field, Theorem on integral domain,: Ring homomorphism: Ring homomorphism Examples on ring homomorphism, properties of ring homomorphism, Kernel of homomorphism, Isomorphism theorems: Quotient Field: Imbedding of a ring, subfield, quotient field, embedding theorems, examples on quotient fields.: PID and UFD: Prime and maximal ideals, theorems on prime and maximal ideals, Euclidean domain. Principal ideal, factorization domain, Principal ideal domain (PID), Unique Factorization domain (UFD), Polynomial Rings: Polynomial rings over commutative rings, division algorithm and consequences, factorization of polynomials, reducibility tests, irreducibility tests, Einstein criterion, unique factorization in $Z[x]$. Divisibility in integral domains, irreducibility, primes, unique factorization domains, Euclidean domains.
MINOR- 2B	Continue Minor 2A as Minor 2B	Same subject which one is taken in Sem-2 as 2A will be continue as 2B
VAC	ENVIRONMENTAL STUDIES	COURSE CONTENT: 1- Introduction of Jharkhand's Environment and biodiversity, Environmental Degradation and its Impact on Jharkhand, The science of Climate change, Types of pollution and their consequences in Jharkhand, Research and Monitoring of Biological Resources
AEC	Language and Communication Skills (AEC-English-2)	Poems of prominent English poets and G.B Shaw –Arms and the Man

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