COURSE CURRICULUM
FOR
UNDERGRADUATE PROGRAMME IN AGRICULTURE

as per
ICAR Sixth Deans Committee guidelines
and
NEP-2020 framework

UG-Certificate in Agriculture
UG-Diploma in Agriculture
B.Sc. (Hons) Agriculture

University of Lucknow
Lucknow, Uttar Pradesh-226007

DETAILED SYLLABI

Semester I

S. No.	Code	Course Title	T	I	P	Credit Hours
1	AGRNG-101	Induction-cum-Foundation course (*Deeksharambh*)	-	-	-	1 week Non-gradial
2	AGRNG-102	Introductory Mathematics	75	25	-	1(1+0) Non-gradial
3	AGRSEC-101	Mushroom Production Technology	-	-	100	2(0+2)
4	AGSEC-102	Beneficial Insect Farming	-	-	100	2(0+2)
5	AGR-101	Communication Skills	50	20	30	2(1+1)
6	AGR-102	Fundamentals of Agronomy	50	20	30	3(2+1)
7	AGR-103	Fundamentals of Soil Science	50	20	30	3(2+1)
8	AGR-104	Fundamentals of Horticulture	50	20	30	3(2+1)
9	AGR-105	Farming Based Livelihood Systems	50	20	30	3(2+1)
10	AGR-106	Rural Sociology and Educational Psychology	75	25	-	2(2+0)
11	AGR-107	National Service Scheme (NSS-I) / National Cadet Corps (NCC-I)	-	-	100	1(0+1)
		Total				**21(11+10)**

V. Saha. 2/6/2025

02/6/25

02/06/25

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02/06/25

AGRNG-10
INDUCTION-CUM FOUNDATION COURSE
(Deeksharambh)
Credit Hours: 1(1+0), Non-gradial

Objectives:

- To support the cultural integration of students from diverse backgrounds
- Understand the academic framework
- Improve life and social skills
- Develop social awareness, ethics, values, teamwork, leadership, and creativity
- Identify strengths and weaknesses in core areas of the discipline

The structure shall include of the following:

1. Interactions with academia, a community concerned with the pursuit of research, education, and scholarship
2. Interaction with alumni, business leaders, perspective employers, outstanding achievers in related fields, and people with inspiring life experiences
3. Group activities to identify the strength and weakness as well as to create a platform to learn from each other's life experiences
4. Activities to enhance cultural integration of students from different backgrounds
5. Visits to related fields/establishments
6. Sessions on personality development for instilling life and social skills, social awareness, ethics and values, teamwork, leadership, etc.) and communication skills

AGRNG-102
INTRODUCTORY MATHEMATICS
Credit hours: 1(1+0), Non-gradial

Objective:

To provide preliminary knowledge of mathematics to the students.

Theory:

Algebra: Progressions- Arithmetic, Geometric and Harmonic Progressions.
Matrices: Definition of Matrices, Addition, Subtraction, Multiplication, Transpose and Inverse up to 3rd order by adjoint method, Properties of determinants up to 3rd order and their evaluation.
Differential Calculus: Definition, Differentiation of function using first principle, Derivatives of sum, difference, product and quotient of two functions, Methods, Increasing and Decreasing Functions. Application of Differentiation- Growth rate, Average Cost, and Marginal cost, Marginal Cost, Marginal Revenue.
Partial differentiation: Homogeneous function, Euler's theorem, Maxima and Minima of the functions of the form $y = f(x)$ and $y = f(x1, x2)$.
Integral Calculus: Integration -Definite and Indefinite Integrals-Methods- Integration by substitution, Integration by parts. Area under simple well-known curves.
Mathematical models in agricultural systems, classification of mathematical models- Fitting of Linear, quadratic and exponential models to experimental data.

Suggested readings:

1. NCERT, 2012, Mathematics of Class XII, NCERT, India.
2. A Textbook of Mathematics XI and XII (Part I and II), Maharashtra State Board of Secondary and Higher Secondary Education, Pune.
3. Sharma RD, 2014, Mathematics of Class XII, Dhanpat Rai Publishing
4. Mensuration-I by Pierpoint.

AGRSEC-101
MUSHROOM PRODUCTION TECHNOLOGY
Credit Hours: 2 (0+2)

Objective:

Study of current status and scope of mushroom production technology in India and U.P. and its potential for entrepreneurship.

Practical:

Study of important features of edible fungi: Nutritional composition, medicinal benefits, therapeutic applications; Study of nutritional and medicinal value of mushrooms; Types of media, sterilization techniques; Tissue culture preparation, sub-culturing, culture maintenance and preservation; Spawn preparation techniques: Types of spawn (grain, sawdust, liquid), methods of spawn preparation, quality control; Collection of wild mushroom flora: Identification of wild mushrooms, ecological significance and safety measures; Raw material formulations for *Agaricus bisporus* (Button mushroom); Sourcing and preparation; Composting: Long and Short methods - Long method vs. short method of composting; Environmental factors and common challenges; Casing preparation: Importance of casing, types of casing materials, methods and maintenance; Study of crop management practices: Environmental controls, watering, ventilation and humidity management; Mushroom farm design and infrastructure required for commercial unit: Farm layout, design requirements, essential infrastructure; Cultivation techniques of *Pleurotus florida* (Dhingri) mushroom; Cultivation techniques of *Volvariella volvacea* (Paddy straw) mushroom; Cultivation techniques of *Calocybe indica* (Milky) mushroom, *Lentinus edodes* (Shiitake) mushroom; Study of marketing of mushrooms: Market analysis, distribution channels, pricing strategies and customer engagement; Mushroom diseases and their control: Common diseases, symptoms, prevention and control measures; Preparation of value-added products from mushrooms: Types of value-added products, processing techniques, product development ideas; Working-out the Economics of Mushroom production: Input requirement and its cost for mushroom production; Exposure visit(s) to Commercial Unit(s): Practical learning through visits to established commercial mushroom farms.

Suggested readings:

1. A textbook on mushroom cultivation: Theory and Practice, Aggarwal, A., Sharma, Y. P. and Jangra, E., Newrays Publishing House.
2. Mushroom Cultivation, Tripathi, D.P. (2005), Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi.
3. Mushroom cultivation technology, Acharya, K., Roy, A. and Sarkar, J., Techno world, Kolkata.
4. Mushroom production and processing technology (2010), Pathak Yadav Gour, Agrobios (India).

AGSEC-102
BENEFICIAL INSECT FARMING
Credit Hours: 2(0+2)

Objective:

To learn about Apiculture, or beekeeping, the scientific maintenance of honeybee colonies in hives to collect products like honey, beeswax, and propolis for professional marketing.

Practical:

Historical development of apiculture at global level and in India; Classification of bees; Global distribution of genus *Apis* and races; Morphology and anatomy of honeybee; Honeybee biology, ecology, adaptations; Honeybee behaviour- nest founding, comb construction, brood care, defense, other in-house and foraging activities; Bee pheromones; Honeybee communication. Commercial beekeeping as an enterprise; Design and use of bee hives; Apicultural equipment; Seasonal bee husbandry; Honeybee nutrition and artificial diets; Absconding, swarming, drifting- causes and management; Curbing drone rearing; Laying worker menace- causes, signs and management. Bee genetics; Principles and procedures of bee breeding; Screening of honeybee colonies; Techniques in mass queen bee rearing; Mating nuclei and their establishment; Selective mating; Queen bee management; Bee packages. Ectoparasitic and endoparasitic bee mites- biology, ecology, nature of damage, management tactics; Wax moths, wasps and ants- biology, ecology, nature and symptoms of damage, management tactics; Predatory birds, their damage potential and management tactics; Pesticide poisoning of honeybees, signs and protection; Protocols in evaluation of pesticide toxicity to honeybees; Honey- composition, properties, crystallization, post-harvest handling and processing; Honey quality standards and assessment; Apicultural diversification- potential and profitability; Production/ collection of bee pollen, propolis, royal jelly, bee venom and bees wax and their post-harvest handling; Apitherapy; Value addition of hive products; Development of apiculture project. Non-Apis pollinators, their augmentation and conservation; Role of bee pollinators in augmenting crop productivity; Managed bee pollination of crops.

Morphological characteristics of honey bee; Mouthparts; digestive, respiratory and reproductive adaptations in different castes of honey bees; Recording of colony performance; Seasonal bee husbandry practices; Swarming, queen lessness, swarming, laying workers menaces, etc. and their remedies; Innovative techniques in mass queen bee rearing; selection and breeding of honey bees; Instrumental insemination; Formulation of artificial diets and their feeding; Production technologies for various hive products; Bee enemies and diseases and their management; Recording pollination efficiency; Application of various models for determining pollination requirement of crop; Developing a beekeeping project.

Suggested readings:

1. Singh, S., 1975. Bee keeping in India – ICAR, New Delhi., 214p.
2. Sunita, N.D, Gulcd, M.B, Mulla S.R and Jagginavar,2003, Beekeeping.
3. UAS Dharwad Mishra, R.C. and Rajesh Gar. 2002. Prospective in Indian Apiculture. Agrobios, Jodhpur.
4. Singh, D and Singh, D.P. 2006. A handbook of Beekeeping, Agrobios (India).
5. Biological control by natural enemies. Cambridge University Press; 2 edition (27 June 1991).
6. Roger A. Morse, Kim Flottum, 1998. Honeybee Pests, Predators and Diseases; 3rd edition.
7. Mishra R.C. (1995) Honeybees and their management in India. ICAR Publication, New Delhi

8. Gupta, J K. 2010. Spring management of honeybee colonies. In "OAPI012 Management of honeybee colonies; Seasonal and specific management (Block 2), Indira Gandhi National open university, school of Agriculture, New Delhi.

AGR-101
COMMUNICATION SKILLS
Credit Hours: 2(1+1)

Objective:

To acquire competence in oral, written and non-verbal communication, develop strong personal and professional communication and demonstrate positive group communication

Theory:

Communication process: The magic of effective communication; Building self-esteem and overcoming fears; Concept, nature and significance of communication process; Meaning, types and models of communication; Verbal and non-verbal communication; Linguistic and non-linguistic barriers to communication and reasons behind communication gap/ miscommunication.
Basic communication skills: Listening, speaking, reading and writing skills; Precis writing/abstracting/summarizing; Style of technical communication; Curriculum vitae/resume writing; Innovative methods to enhance vocabulary, analogy questions.
Structural and functional grammar: Sentence structure, modifiers, connecting words and verbals; Phrases and clauses; Case: Subjective case, possessive case, objective case; Correct usage of nouns, pronouns and antecedents, adjectives, adverbs and articles; Agreement of verb with the subject: Tense, mood, voice; Writing effective sentences; Basic sentence faults.

Practical:

- Listening and taking notes
- Writing skills: precis writing, summarizing and abstracting
- Reading and comprehension (written and oral) of general and technical articles
- Micro-presentations and impromptu presentations: Feedback on presentations
- Stage manners: Grooming, body language, voice modulation, speed
- Group discussions
- Public speaking exercises
- Vocabulary building exercises
- Interview techniques
- Organization of events

Suggested readings:

1. Allport, G W, 1937, Personality: A Psychological Interpretation. Holt, New York.
2. Brown Michele and Gyles Brandreth, 1994, How to Interview and be Interviewed. Sheldon Press, London.
3. Carnegie Dale, 1997, The Quick and Easy Way to Effective Speaking. Pocket Books, New York.
4. Francis Peter S J, 2012, Soft Skills and Professional Communication. Tata McGraw Hill, New Delhi
5. Kumar S and Pushpa Lata, 2011, Communication Skills. Oxford University Press.
6. Neuliep James W, 2003, Intercultural Communication A Contextual Approach. Houghton Mifflin Co Boston.
7. Pease, Allan, 1998, Body Language. Sudha Publications, Delhi.
8. Raman M und Singh P, 2000, Business Communication. Oxford University Press.
9. Seely J, 2013, Oxford Guide to Effective Writing and Speaking. Oxford University Press.
10. Thomson A J and Martinet A V, 1977, A Practical English Grammar. Oxford University

AGR-102
FUNDAMENTALS OF AGRONOMY
Credit Hours: 3(2 +1)

Objective:

To impart the basic and fundamental knowledge of Agronomy

Theory:

Agronomy and its scope: Definition, meaning and scope of agronomy; Art, science and business of crop production, relation of agronomy with other disciplines of agricultural science; Fields crops and classification, importance, ecology and ecosystem; Seeds and sowing: Definitions of crops, variety and seed; Factors affecting crop establishment: Good quality seed, proper tillage, time of sowing seed rate, depth and method of sowing: broadcasting, drilling, dibbling, transplanting etc; Tillage and tilth: Definition, objectives, types, advantages and disadvantages of tillage including conservation tillage. Crop density and geometry: Plant geometry and planting geometry, its effect on growth, yield
Crop nutrition: Definition of essential nutrients, criteria of essentiality, functional elements, classification of essential nutrients, role of macro and micronutrients. Nutrient absorption, active and passive absorption of nutrients, forms of plant nutrients absorbed by plants, Combined /un-combined forms; Manures and fertilizers, nutrient use efficiency: Sources of nutrients: Inorganic (fertilizers), organic (manures) and bio-fertilizers; their classification and characteristics, method of preparation and role of organic manures in crop production; Integrated Nutrient Management: Meaning, different approaches and advantages of INM; Green manure- role in crop production: Definition, objectives, types of green manuring, desirable characteristics, advantages and limitations of green manuring.
Water management: Water resources of the world, India and the state; Soil moisture constants, gravitational water, capillary water, hygroscopic water, Concept of water availability to plants, soil-plant-water relationship, crop water requirement, water use efficiency; Methods of irrigation: Scheduling of irrigation, different approaches to scheduling irrigation.
Weeds: Definition, importance and basics of classification of weeds and their control.
Cropping systems: Factors affecting cropping systems, major cropping patterns and systems in the country; Sustainable crop production: Definition, importance and practices, natural resources and conservation pollution and pollutants; Allelopathy: Meaning and importance in crop production; Growth and development of crops: Definition, meaning and factors affecting growth and development

Practical:

A visit to instructional crop farm and study of field crops; Identification of crops, seeds, fertilizers, pesticides; Crops and cropping systems in different Agro-climatic zones of the state; Study of some preparatory tillage implements, study of inter tillage implements, practice of ploughing / puddling, study and practice of inter-cultivation in field crops; Numerical exercises on calculation of seed, plant population and fertilizer requirement; Study of yield contributing characters and yield estimation of crops; Identification of weeds in different crops; Seed germination and viability test of seed; Practice on time and method of application of manures and fertilizers; Measurement of soil moisture by gravimetric and volumetric method and bulk density; Determination of field capacity; Determination of gross and net irrigation requirement, Determination of infiltration rate

Suggested readings:

1. William L Donn. 1965. Meteorology. McGraw-Hill Book Co. New York.
2. Yawalkar K S and Agarwal J P. 1977. Manures and Fertilizers. Agricultural Horticultural Publishing House, Nagpur.
3. Rao V S. 1992. Principles of Weed Science. Oxford and IBH Publishing Co. Ltd. New Delhi.
4. Reddy Yellamanda T and Shankar Reddy G H. 1995. Principles of Agronomy. Kalyani Publishers, Ludhiana.
5. Reddy, S. R. 2008. Principle of Crop Production, Kalyani Publisher, Ludhiana

AGR-103
FUNDAMENTALS OF SOIL SCIENCE
Credit Hours: 3(2+1)

Objective:

To impart knowledge on soil genesis, basic soil properties with respect to plant growth

Theory:

Soil- Pedological and edaphalogical concepts; Rocks and minerals, weathering, soil formation, soil profile, soil texture, soil structure; Bulk density and particle density, soil consistency, soil temperature, soil air, soil water; Soil reaction and buffering capacity; Soil taxonomy, keys to soil orders; Soils of India.

Practical:

Study of general properties of minerals, study of silicate and non-silicate minerals; Study of rocks- igneous, sedimentary and metamorphic rocks; Study of a soil profile, collection and processing of soil for analysis, study of soil texture-feel method, mechanical analysis, determination of bulk density, particle density and soil porosity, determination of soil colour, study of soil structure and aggregate analysis; Determination of soil moisture, determination of soil moisture constants- field capacity, water holding capacity, study of infiltration rate of soil.

Suggested readings:

1. Soil Fertility and Nutrient Management – By S. S. Singh, Kalyani Publishers
2. Introductory Soil Science – By Dilip Kumar Das, Kalyani Publishers
3. Soil Fertility and Fertilizers – By Samual L. Tisdale, Werner L. Nelson and James D. Beaton, Macmillan Publishing Company, New York.
4. The nature and Properties of Soils – By Harry O. Buckman and Nyle C.

AGR-104
FUNDAMENTALS OF HORTICULTURE
Credit Hours: 3 (2+1)

Objectives:

- To provide knowledge about different branches of horticulture viz. pomology, olericulture, floriculture and landscaping, spices and medicinal plants
- To provide knowledge of orchard management, propagation methods, cultural operations and nutrient management of horticultural crops
- To provide knowledge on different physiological aspects of horticultural crops

Theory:

Horticulture- different branches, importance and scope; Horticulture and botanical classification; Soil and climate for horticultural crops; Plant propagation- methods and propagation structures, seed dormancy and seed germination; Principles of orchard establishment; Principles and methods of training and pruning of fruit crops; Juvenility and flower bud differentiation, unfruitfulness in horticultural crops, pollination, pollinizers and pollinators, fertilization and parthenocarpy; Importance of bioregulators in horticultural crops; Irrigation and its methods; Fertilizer application in horticultural crops; Medicinal and aromatic plants;

Practical:

Identification and nomenclature of fruit; Layout of an orchard; Pit making and system of planting; Nursery raising techniques of fruit crops; Understanding of plant propagation structures; Propagation through seeds and plant parts, Propagation techniques for horticultural crops, Container, potting mixture, potting and repotting; Training and pruning methods on fruit crops; Preparation of fertilizer mixture and application; Preparation and application of PGR, Layout of different irrigation systems; Maturity studies; Harvesting, grading, packaging and storage

Suggested readings:

1. Basics of Horticulture, by Jitendra Singh
2. Introduction to Horticulture, by N. Kumar
3. Handbook of Horticulture, by K.L. Chadda

AGR-105
FARMING BASED LIVELIHOOD SYSTEMS
Credit Hours: 3(2+1)

Objectives:

- To make the students aware about farming based livelihood systems in agriculture
- To disseminate the knowledge and skill how farming-based systems can be a source of livelihood

Theory:

Status of agriculture in India and different states, Income of farmers and rural people in India, Livelihood-Definition, concept and livelihood pattern in urban and rural areas, Different indicators to study livelihood systems. Agricultural livelihood systems (ALS): Meaning, approach, approaches and framework, Definition of farming systems and farming based livelihood systems Prevalent Farming systems in India contributing to livelihood. Types of traditional and modern farming systems. Components of farming system/farming based livelihood systems- Crops and cropping systems, Livestock, (Dairy, Piggery, Goatery, Poultry, Duckery etc.), Horticultural crops, Agro-forestry systems, Aqua culture Duck/Poultry cum Fish, Dairy cum Fish, Piggery cum Fish etc., Small, medium and large enterprises including value chains and secondary enterprises as livelihood components for farmers, Factors affecting integration of various enterprises of farming for livelihood. Feasibility of different farming systems for different agro-climatic zones, Commercial farming-based livelihood models by NABARD, ICAR and other organizations across the country, Case studies on different livelihood enterprises associated with the farming. Risk and success factors in farming-based livelihood systems, Schemes and programmes by Central and State Government, Public and Private organizations involved in promotion of farming-based livelihood opportunities. Role of farming-based livelihood enterprises in 21st Century in view of circular economy, green economy, climate change, digitalization and changing lifestyle.

Practical:

Survey of farming systems and agriculture-based livelihood enterprises, Study of components of important farming-based livelihood models/ systems in different agro-climatic zones, Study of production and profitability of crop based, livestock based, processing based and integrated farming-based livelihood models, Field visit of innovative farming system models. Visit of Agri-based enterprises and their functional aspects for integration of production, processing and distribution sectors and Study of agri-enterprises involved in industry and service sectors (Value Chain Models), Learning about concept of project formulation on farming-based livelihood systems along with cost and profit analysis, Case study of Start-Ups in agri-sectors.

Suggested Readings:

1. Dixon, J. and A. Gulliver with D. Gibbon. (2001). Farming Systems and Poverty: Improving Farmers' Livelihoods in a Changing World. FAO & World Bank, Rome, Italy & Washington, DC, USA
2. Ashley, C.; Carney, D. (1999). Sustainable Livelihoods: Lessons from Early Experience; Department for International Development: London, UK; Volume 7
3. Reddy, S.R. 2016. Farming System and Sustainable Agriculture, Kalyani Publishers, New Delhi.

4. Panwar et al. 2020. Integrated Farming System models for Agricultural Diversification, Enhanced Income and employment, Indian Council of Agricultural Research, New Delhi.
5. Singh, J.P., et al. 2015. Region Specific Integrated Farming System Models, ICAR-Indian Institute of Farming Systems Research, Modipuram.
6. Walia, S. S. and U. S. Walia, 2020. Farming System and Sustainable Agriculture, Scientific Publishers, Jodhpur, Rajasthan.
7. Livelihood Improvement of Underprivileged Farming Community: Some Experiences from Vaishali, Samastipur, Darbhanga and Munger Districts of Bihar, by B. P. Bhatt, Abhay Kumar, P.K. Thakur, Amitava Dey, Ujjwal Kumar, Sanjeev Kumar, B.K. Jha, Lokendra Kumar, K. N. Pathak, A. Hassan, S.
8. K. Singh, K. K. Singh and K. M. Singh ICAR Research Complex for Eastern Region ICAR Parisar, P.O. Bihar Veterinary College, Patna - 800 014, Bihar
9. Carloni, A (2001) Global Farming Systems Study: Challenges and Priorities to 2030 – Regional Analysis: Sub-Saharan Africa, Consultation Document, FAO, Rome, Italy
10. Evenson, R.E. (2000). Agricultural Productivity and Production in Developing Countries'. In FAO, The State of Food and Agriculture, FAO, Rome, Italy
11. Agarwal, A. and Narain, S. (1989). Towards Green Villages: A strategy for Environmentally, Sound and Participatory Rural Development, Center for Science and Environment, New Delhi, India

AGR-106
RURAL SOCIOLOGY AND EDUCATIONAL PSYCHOLOGY
Credit Hours: 2(2+0)

Objective:

Provide knowledge on concept and importance of sociology and rural sociology as well as the relationship with Extension Education

Theory:

Extension Education and Agricultural Extension- Meaning, definition, scope, and importance.
Sociology and rural sociology- Meaning, definition, scope, importance of rural sociology in Agricultural Extension, and interrelationship between rural sociology and Agricultural Extension.
Indian rural society, important characteristics, differences and relationship between rural and urban societies.
Social groups- Meaning, definition, classification, factors considered information and organization of groups, motivation in group formation and role of social groups in Agricultural Extension.
Social stratification- Meaning, definition, functions, basis for stratification.
Forms of social stratification- Characteristics and differences between Class and Caste System.
Cultural concepts- Culture, Customs, Folkways, Mores, Taboos, Rituals and Traditions- Meaning, Definition and their Role in Agricultural Extension.
Social values and attitudes – Meaning, definition, types and role of social values and attitudes in Agricultural Extension.
Social institutions- Meaning, definition, major institutions in rural society, functions, and their role in Agricultural Extension.
Social organizations- Meaning, definition, types of organizations and role of social organizations in Agricultural Extension.
Social control- Meaning, definition, need of social control and means of social control.
Social change- Meaning, definition, nature of social change, dimensions of social change and factors of social change.
Leadership- Meaning, definition, classification, roles of leader, different methods of selection of professional and lay leaders. Training of leaders- Meaning, definition, methods of training, advantages and limitations in use of local leaders in Agricultural Extension.
Psychology and educational psychology- Meaning, definition, scope, and importance of educational psychology in Agricultural Extension.
Intelligence- Meaning, definition, types, factors affecting intelligence and importance of intelligence in Agricultural Extension.
Personality- Meaning, definition, types, factors influencing the personality and role of personality in Agricultural Extension.
Teaching-Learning process- Meaning and definition of Teaching and Learning, learning experience and learning situation, Elements of learning situation and its characteristics. Principles of learning and their implication of teaching.

Suggested readings

1. J.B. Chitambar -Introductory Rural Sociology
2. Ray, G. L. -Extension Communication and Management
3. Dahama O. P. and Bhatnagar, O. P. - Education and Communication for Development
4. Sandhu A. S. -Textbook on Agricultural Communication
5. A. R. Desai -Rural Sociology in India
6. R Velusamy Textbook on Rural Sociology and Educational Psychology
7. M.B. Ghorpade- Essential of psychology
8. Web Materials
9. Prepared You Tube videos

AGR107
National Cadet Corps (NCC-I)/National Service Scheme (NSS-I)
Credit hours: 1(0+1)

National Cadet Corps (NCC):

According to government guidelines, the minimum requirement for obtaining B and C certificates in NCC is 2 and 3 years of participation respectively, along with attendance at 1-2 annual camps.

- Aims, objectives, organization of NCC, NCC song, DG's cardinals of discipline.
- Drill- aim, general words of command, attention, stands at ease, stand easy and turning.
- Sizing, numbering, forming in three ranks, open and close order march, and dressing.
- Saluting at the halt, getting on parade, dismissing, and falling out.
- Marching, length of pace, and time of marching in quick/slow time and halt; Side pace, pace forward and to the rear; Turning on the march and wheeling; Saluting on the march.
- Marking time, forward march, and halt; Changing step, formation of squad and squad drill.
- Command and control, organization, badges of rank, honors, and awards
- Nation Building- cultural heritage, religions, traditions, and customs of India; National integration; Values and ethics; Perception, communication, motivation, decision making, discipline and duties of good citizens; Leadership traits, types of leadership; Character/personality development; Civil defense organization, types of emergencies, firefighting, protection; Maintenance of essential services, disaster management, aid during development projects.
- Basics of social service, weaker sections of society and their needs; NGO's and their contribution; Contribution of youth towards social welfare and family planning.
- Structure and function of human body; Diet and exercise, hygiene and sanitation; Preventable diseases, including AIDS, safe blood donation, first aid, physical and mental health; Adventure activities. Basic principles of ecology, environmental conservation, pollution and its control.

National Service Scheme (NSS)

A student enrolled in NSS course should put in at least 60 hours of social work in different activities in a semester other than five regular one day camp in a year and one special camp for duration of 7 days at any semester break period in the two years. Different activities will include orientation lectures and practical works. Activities directed by the Central and State Government have to be performed by all the volunteers of NSS as per direction.

Basic Components of NSS

- Orientation: History, objectives, principles, symbol, badge; Regular programs under NSS
- organizational structure of NSS; Code of conduct for NSS volunteers, points to be considered by NSS volunteers' awareness about health.
- NSS program activities; Concept of regular activities; special camping, day camps, basis of adoption of village/slums, conducting survey, analyzing guiding financial patterns of scheme, youth program/ schemes of GOI, coordination with different agencies and maintenance of diary; Understanding youth; Definition, profile, categories, issues and challenges of youth; Opportunities for youth as an agent of social change.

- Community mobilization. Mapping of community stakeholders, designing the message as per problems and their culture; Identifying methods of mobilization involving youth-adult partnership; Social harmony and national integration
- Indian history and culture, role of youth in nation building, conflict resolution and peace- building; Volunteerism and shramdaan: Indian tradition of volunteerism, its need, importance, motivation, and constraints, shramdaan as part of volunteerism
- Citizenship, constitution, and human rights; Basic features of constitution of India, fundamental rights and duties, human rights, consumer awareness and rights and rights to information; Family and society: Concept of family, community (PRIs and other community-based organizations) and society.