



॥ सा विद्या या विमुक्तये ॥

स्वामी रामानंद तीर्थ मराठवाडा विद्यापीठ, नांदेड
'ज्ञानतीर्थ', विष्णुपुरी, नांदेड - ४३१ ६०६ (महाराष्ट्र राज्य) भारत
SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED
'Dnyanteerth', Vishnupuri, Nanded - 431 606 (Maharashtra State) INDIA
Established on 17th September, 1994, Recognized By the UGC U/s 2(f) and 12(B), NAAC Re-accertified with 'B++' grade

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विद्यापीठ अनुदान आयोगाने शैक्षणिक वर्ष २०२०-२१ पासून मान्यता दिलेल्या बी. व्होक (व्होकेशनल कोर्सेसचे) पदवी तृतीय वर्षाचे अभ्यासक्रमाचे (Syllabus) शैक्षणिक वर्ष २०२२-२३ पासून लागू करणे बाबत.

प रि प त्र क

या परिपत्रकान्वये सर्व संबंधितांना कळविण्यात येते की, विज्ञान व तंत्रज्ञान विद्याशाखेतील विद्यापीठ अनुदान आयोगाने शैक्षणिक वर्ष २०२०-२१ पासून मान्यता दिलेल्या बी. व्होक (व्होकेशनल कोर्सेसचे) पदवी अभ्यासक्रमाचे तृतीय वर्षाचे Syllabus शैक्षणिक वर्ष २०२२-२३ पासून लागू करण्यास मा. कुलगुरू महोदयांनी मा. विद्यापरिपदेच्या मान्यतेच्या अधीन राहून मान्यता दिलेली आहे. त्यानुसार खालील अभ्यासक्रम लागू करण्यात येत आहेत.

1. B. Voc Software Development III year
2. B. Voc. Bachelor of Medical Laboratory Technology. III year
3. B. Voc. Herbal Medicine III year
4. B. Voc. Agriculture/commercial Aquaculture III year
5. B. Voc. Horticulture and Post Harvest Technology III year
6. B. Voc. Food Processing /Food Processing Technology III year
7. B. Voc. Chemical & Petrochemical Applied Analytical Chemistry III year
8. B. Voc. Life Science/Skill Based Zoology III year

सदरील परिपत्रक व अभ्यासक्रम प्रस्तुत विद्यापीठाच्या www.srtmun.ac.in या संकेतस्थळावर उपलब्ध आहेत. तरी सदरील बाब ही सर्व संबंधितांच्या निदर्शनास आणून द्यावी. ही विनंती.

जा.क्र.:शैक्षणिक-१/परिपत्रक/व्होकेशनल अभ्यासक्रम/N-

२०२२-२३/६२५

दिनांक : २९.०९.२०२२

प्रत माहिती व पुढील कार्यवाहीस्तव :

- १) मा. अधिष्ठाता, विज्ञान व तंत्रज्ञान विद्याशाखा, प्रस्तुत विद्यापीठ.
- २) मा. संचालक, परीक्षा व मूल्यमापन मंडळ यांचे कार्यालय, प्रस्तुत विद्यापीठ.
- ३) प्राचार्य, सर्व संबंधित संलग्नित महाविद्यालये, प्रस्तुत विद्यापीठ.
- ४) साहाय्यक कुलसचिव, पदव्युत्तर विभाग, प्रस्तुत विद्यापीठ.
- ५) उपकुलसचिव, पात्रता विभाग, प्रस्तुत विद्यापीठ.
- ६) सिस्टम एक्सपर्ट, शैक्षणिक विभाग, प्रस्तुत विद्यापीठ. याना देवून कळविण्यात येते की, सदरील परिपत्रक विद्यापीठाच्या संकेतस्थळावर प्रसिध्द करण्यात यावे.

(Signature)

सहाकुलसचिव

शैक्षणिक (१-अभ्यासमंडळ) विभाग

**SWAMI RAMANAND TEERTH MARATHWADA
UNIVERSITY, NANDED**



UGC Sanctioned Vocational Course

Syllabus

Certificate, Diploma, Advanced Diploma and B.Voc Degree

in

Commercial Aquaculture

(CBCS Pattern)

Third Year Semester V & VI

Faculty: Science and Technology



Swami Ramanand Teerth Marathwada University, Nanded

Syllabus structure for,

Certificate, Diploma, Advanced Diploma and B.Voc Degree (Commercial Aquaculture)

	Paper No.	Course Number	Course Title	Hr/ Week	Type of Course	Credits	Marks		Total
							ESA	CIA	
Sem. V		General Education Component							
	Paper-XXXVIII	BAAGE -3513	Marketing Analytics	4	GE	4	75	25	100
	Paper-XXXIX	BAAGE -3514	Climate Change and Agriculture	4	GE	4	75	25	100
	Paper-XXXX	BAAGE -3515	*Activity based on Paper- XXXVIII & XXXIX	1	GE	1	-	25	25
		Skill Courses							
	Paper-XLI	COMAQ -3513	Fish Diseases Management	4	CC	4	75	25	100
	Paper-XLII	COMAQ -3514	Ornamental Fish culture	4	CC	4	75	25	100
	Paper-XLIII	COMAQ -3515	Culture of Live Fish Food Organisms	4	CC	4	75	25	100
		Practical Skill Courses							
	Paper-XLIV	Practical based on (BAASC -3513)		2	PR	2	50	-	50
	Paper-XLV	Practical based on (BAASC -3514)		2	PR	2	50	-	50
	Paper-XLVI	Practical based on (BAASC -3515)		2	PR	2	50	-	50
	Paper-XLVII	Report on summer activity		-	PR	3	50	25	75
Sem. VI Elective -I		Course Number	Course Title	Hr/ Week	Type of Course	Credits	Marks		Total
							ESA	CIA	
		General Education Component							
	Paper-XXXXVIII	BAAGE -3616	Farm Management, Production and Resource Economics	4	GE	4	75	25	100
	Paper-XXXXIX	BAAGE -3617	Human Resource Management	4	GE	4	75	25	100
	Paper-XXXXX	BAAGE -3618	*Activity based on Paper- XXXXVIII & XXXXIX	1	GE	1	-	25	25

		Skill Courses							
	Paper- LI		1 Month Industrial Training at Agri./Aquaculture based Industries	-	CC	21	300	100	400
			Report Writing	-			25	25	50
			Seminar and Viva-Voce	-			75	-	75

OR									
Sem. VI Elective-II	Paper No.	Course Number	Course Title	Hr/ Week	Type of Course	Credits	Marks		Total
	Paper- XLVIII	Marks Distribution	3 Months Industrial Training	-	CC	30	750	-	750
			Industrial Training Certificate	-		20	500	-	500
			Report Writing	-		05	125	-	125
			Seminar and Viva-Voce	-		05	125	-	125

Note:

1. The ESA part of practical and Industrial Project should be completely assessed and evaluated by external examiner.
2. The external examiner should be appointed for practical and industrial training ESA part.
3. * Sign denotes that internal assessment should be based on seminar/Interview skill/expected component of the course.
4. Student should submit the Report based on summer industrial training.
5. For VI semester students can opt Elective-I or Elective-II pattern.
6. Student should submit the certificate of three months industrial training from respective industries.

ESA: End Semester Assessment,

CIA: Continues Internal Assessment,

GE: General Education Component,

CC: Core Skill Courses,

PR: Practical Skill Courses,

CIA of 25 Marks (Theory): 15 Marks for college level internal test & 10 Marks for Assignment,

CIA of 25 Marks (Practical): 15 Marks for college level internal practical test & 10 Marks for Record Book and Field Note Book submission.

Swami Ramanand Teerth Marathwada University, Nanded

Certificate, Diploma, Advanced Diploma and B.Voc Degree

(Agriculture and Allied Faculties)

Third Year (Semester V)

Paper- XXXVIII: Marketing Analytics (BAAGE-3513)

Maximum Marks: 100

Credits: 4

Periods: 45

Unit I: Marketing Mix optimization (15)

Marketing Mix optimization: Use of various techniques like multivariate regression to analyze sales and marketing time series data, Effects of various marketing tactics in order to find out the optimal mix of various marketing activities to maximize revenue and /or profitability.

Unit II: Marketing Mix Modelling (10)

Marketing Mix Modelling: Use of this technique to analyze and optimize the marketing spends.

Unit III: Price Analysis (10)

Price Analysis: Determination of the price elasticity of a product using historical price and sales data, Application of results to find out expected volume at new prices, key price points, changing price sensitivity, and competitive price matching.

Unit IV: Promotions Analysis (10)

Promotions Analysis : Analysis of promotions data to understand the sales lift and ROI from various promotional activities such as In-store displays, Newspaper & Pre-print features, coupons, In-store, Mail/ online offers, Special packs, Special events, and discounts etc.

Reference books:

1. Marketing Mix Optimization Rules by Andrew A. Mitchell, College of Business Administration Pennsylvania State University, 1975.
 2. Market Response and Marketing Mix Problems : Trends and Research Opportunities , Douglas Bowman and Hubert Gatignon, New Publishers Inc.
 3. Pring on Price patterns: the definitive guide to price pattern analysis and interpretation, Martin J. Pring, Mc Graw Hill Publications
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Swami Ramanand Teerth Marathwada University, Nanded

Certificate, Diploma, Advanced Diploma and B.Voc Degree

(Agriculture and Allied Faculties)

Third Year (Semester V)

Paper- XXXIX: Climate Change and Agriculture (BAAGE-3514)

Maximum Marks: 100

Credits: 4

Periods: 45

Unit-I: Composition and structure of atmosphere (10)

Composition and structure of atmosphere and definition of weather and climate, aspects involved in weather and climate, atmospheric temperature, soil temperature, solar radiation, atmospheric pressure, atmospheric humidity, evaporation and transpiration, monsoons, rainfall, clouds, drought, weather disasters and their management atmospheric pollution. Basics of weather forecasting.

Unit-II: Climate change (10)

Climate change causes, Global warming-causes and remote sensing. Effect of climate change on horticulture past and future changes in greenhouse gases within the atmosphere. Sources and sinks for greenhouse gases. Atmospheric chemistry.

Unit-III: Effect on Plant and Plant Response (15)

Plants sense and respond to changes in CO₂ concentration. Measurement of short-term effects and mechanisms underlying the observed responses in C₃ and C₄ species. Plant development affected by growth in elevated CO₂. Physiology of rising CO₂ on nitrogen use and soil fertility, its implication for production. Methodology for studying effect of CO₂. Change in secondary metabolites and pest disease reaction of plants.

Unit-IV: Social responsibility and business ethics (10)

The mechanisms of ozone and UV damage and tolerance in plants. Increased temperature and plants in tropical/sub-tropical climates- effect on growing season, timing of flowering, duration of fruit development and impacts on crop yields and potential species ranges, interaction of temperature with other abiotic/biotic stress. Mitigation strategies and prospects for genetic manipulation of crops to maximize production in the future atmosphere. Modifying Rubisco, acclimation, metabolism of oxidizing radicals, and sink capacity as potential strategies.

Reference books:

1. K. Srivastava and P. K. Tyagi, 2011. Practical Agricultural Meteorology. New Delhi Publishing Agency, New Delhi.
 2. D. Lenka, 2006. Climate, Weather and Crops in India. Kalyani Publishers, New Delhi.
 3. G. S.L. H. V. Prasad Rao, 2008. Agricultural Meteorology. Prentice Hall of India Pvt. Ltd., New Delhi.
 4. H. S. Mavi and Graeme J. Tupper, 2005. Agrometeorology- Principles and applications of climate studies in agriculture. International Book Publishing Co. Lucknow.
 5. H. S.Mavi, 1994. Introduction to Agrometeorology. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
 6. H. V. Nanjappa and B. K. Ramachandrappa, 2007. Manual on Practical Agricultural Meteorology. Agrobios India. Jodhpur.
 7. S. R. Reddy, 1999. Principles of Agronomy. Kalyani Publishers, New Delhi.
 8. T. Yellamanda Reddy and G. H. Sankara Reddi, 2010. Principles of Agronomy. Kalyani Publishers, New Delhi.
 9. Pattersen, S. 1958. Introductionto Meteorology. Me. Graw Hill BookCo. Inc., New York
 10. Tailor, J. T. 1967. Agricultural Climatology. Pergman Press Ltd. Headington Hill Hall, Oxford, Englandd
 11. Trewarthe, T. G. 1968. AnIntroductionto Climate. Me Graw Hill Book Co. Ine., New York
 12. Mavi, H. S. 1985. Introductionto Agrometeorology. Oxford & IBH Publishing Co. New Delhi.
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Faculties)

Second Year (Semester V) Semester Pattern

Paper-XLI: Fish Diseases Management (COMAQ -3513)

Maximum Marks: 100

Credits: 4

Periods: 45

Unit I: (12 Periods)

1. Cause and development of fish diseases
2. General etiology of fish diseases
3. Extrinsic factors affecting fish health
 - a) Water-associated factors
 - b) Nutrition-associated factors
4. Common symptoms of stress
5. Effect of stress on a fish health

Unit II: (12 Periods)

Types of fish diseases

Infectious Fish Diseases: (Disease causing organism, symptoms and preventives measures)

1. Bacterial Diseases: Dropsy and fin rot
2. Viral Diseases: Papillomatosis, Lymphocystosis and Infectious pancreatic necrosis (IPN)
3. Fungal Diseases:-Gill rot, Branchiomycosis (Dermal Mycosis, Branchial mycosis, Systemic mycosis)
4. Epizootic Ulcerative Syndrome (EUS) in fishes.

Unit III: (11 Periods)

Parasitic diseases of Fish {Disease causing organism, symptoms and preventives measures (Prophylaxis)}

1. Protozoan Diseases:-White spot (Ichthyophthiriasis) and costiasis.
2. Metazoan Diseases:
 - a) Monogenic trematode parasites (Dactylogyrus, Gyrodactylus),
 - b) Digenic trematodes (trematode larval and Neodiplostomum),
 - c) Cestode parasites (Ligula and *Dibothriocephalus latus*),
 - d) Nematodes and fish leeches.

3. Crustaceans diseases: Argulus and Learnia

Unit IV: (10 Periods)

1. Nutrition deficiency diseases: Avitaminosis, Mineral deficiency, Starvation.
2. Environmental induced diseases of fish.
 - a) Gas bubble disease
 - b) Oxygen deficiency,
 - c) Thermal stress
 - d) Stress due to pH variations
3. Management practices to control fish diseases

Reference Books:

- 1) R. Ramachandran Nair Encyclopedia of fish disease –
- 2) K.P. Biswas Prevention and control of fish and Prawn diseases –
- 3) B.K. Mishra, P. Swain, P. K. Sahoo, B. K. Das, N. Sarangi. Disease management in FW Pisciculture.
- 4) Wheaton, F. W. Aquacultural Engineering
- 5) Bose et al. Coastal Aquacultural Engineering
- 6) Sinderman C.J. Principle diseases of Marine fish and shell fish
- 7) Roberts R.J., Fish Pathology.

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Second Year (Semester V) Semester Pattern

Paper-XLII: Ornamental Fish culture (COMAQ -3514)

Maximum Marks: 100

Credits: 4

Periods: 45

Unit: I (12 Periods)

1. Study of important ornamental fishes: Commercially important ornamental fishes and other ornamental organisms (Taxonomy and general characters only)
 - a. **Indigenous ornamental fishes:** i) *Brachydanio rerio* (Zebra fish), ii) *Chanda nama* (Glass fish), iii) *Botia lohachata* (Reticulated loach), iv) *Notopterus notopterus* (black knife fish)
 - b. **Exotic ornamental fishes:** i) *Carassius auratus* (Goldfish), ii) *Betta splendens* (Siamese fighting fish), iii) *Poecillia reticulata* (Guppy), iv) *Xiphophorus helleri* (Sword tail fish)
 - c. **Other aquatic Ornamental organisms:** i) Octopus ii) Haddons carpet anemone iii) Red knob sea star iv) Red lobster
2. Introduction to ornamental fish industry at national and international level
3. Benefits of ornamental fish keeping.

Unit II: Aquarium (12 Periods)

- 1) Aquarium fabrication
- 2) Importance of aquarium
- 3) Types of aquarium
- 4) Accessories of aquarium
- 5) Setting of aquarium
- 6) Care and maintenance of aquarium
- 7) Aquarium water quality and management
- 8) Aquarium plants
- 9) Food for Aquarium fishes: fish feeds, and live fish food organism

Unit III: Breeding of ornamental fishes (11 Periods)

- 1) Identification of male and female brooders
- 2) Breeding technique of ornamental fishes
 - a) Egg layers: i) Barbs, ii) Gold fish, iii) Zebra danio, iv) Gourami
 - b) Live Bearers: i) Guppy, ii) Mollies, iii) Sword tail, iv) Platty

- 3) Transportation of live aquarium fishes.

Unit IV: Disease management of ornamental fishes (10 Periods)

(Disease causing organisms Symptoms, treatment and control measures)

- 1) Protozoan disease
- 2) Bacterial disease
- 3) Crustacean disease
- 4) Fungal disease

Reference Books:

1. B. Ahilan N Flex and R. Santhanan, 2013. The text book of aquariculture, Daya Publishing House, New Delhi.
2. B. K. Mahapatra, S. Datta, G. H. Pailan, P. SardarA. R. Sen and S. Dasgupta, 2015. Ornamental Fish Breeding, Culture and Trade. Director, ICAR-CIFE, Mumbai.
3. C. W. Emmens, Keeping and Breeding Aquarium Fishes, 1953. Academic press, INC publishers, New York.
4. Harsha Haridas, Saravanan, K., Praveenraj, J., Ravindra Sontakke., Gladston, Y., Ajina, S.M., Deepitha, R., Sreepriya Prakasasn, Kiruba Sankar, R. and Dam Roy, S., 2019. Training Manual on Freshwater Ornamental Fish Breeding and Aquascaping Techniques. ICAR-CIARI, Port Blair, India. 39 pp.
5. Helen E. Roberts, DVM, 2010. Fundamentals of ornamental fish health, Edition first, Blackwell Publishing.
6. N. Arumugam, K.V. Jayashree, C.S. Tharadevi, 2015. Home Aquarium and Ornamental Fish Culture, Pages-508.

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Second Year (Semester V) Semester Pattern

Paper-XLIII: Culture of Live Fish Food Organisms (COMAQ -3515)

Maximum Marks: 100

Credits: 4

Periods: 45

Unit I: (12 Periods)

- 1) Introduction to Fish food organisms,
- 2) Plankton: Phytoplankton and zooplankton
- 3) Micro algae: Introduction, nutritional value and uses in aquaculture, Cultivable algal species, Culture techniques etc.

Unit II: (12 Periods)

- 1) Green algae: Introduction, biology, culture methodology
- 2) Blue green algae: Introduction, biology, culture methodology
- 3) Diatoms: Introduction, biology, culture methodology
- 4) Candidates species of zooplankton as food organisms of freshwater and marine species

Unit III: (11 Periods)

- 1) Rotifers: Introduction, morphology, biology and culture
- 2) Artemia: Introduction, morphology, biology and Culture of Artemia nauplii
- 3) Infusoria: Introduction, biology, culture methodology

Unit IV: (10 Periods)

- 1) Cladocerans: Introduction, biology, culture methodology
- 2) Copepods: Introduction, biology, culture methodology
- 3) Microworms: Introduction, biology, culture methodology
 - a. Chironomid larvae
 - b. Tubifex worm:

Reference Books:

- 1) V. G. Jhingran, (1991). Fish and fisheries of India. Edition-3, Hindustan Pub. Corp. (India), 727.
- 2) S. Ayyappan, J. K. Jena, A. Gopalakrishnan, Dr. A. K. Pandey, (2011). Handbook of Fisheries and Aquaculture, Indian Council of Agricultural Research, New Delhi, 755.
- 3) FAO, Technical Paper No.361. Manual on production and use of live food in aquaculture.
- 4) Pronob Das, Sagar C. Mandal, S. K. Bhagabati, M. S. Akhtar and S. K. Singh (2012). Important Live Food Organisms And Their Role In Aquaculture, Frontiers in Aquaculture, 2012: 69–86.
- 5) Handbook on Aqua farming: Aquaculture Feed, MPEDA.

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Second Year (Semester V) Semester Pattern

Paper-XLIV: Practical paper based on Fish Diseases Management (COMAQ -3513)

Maximum Marks: 50

Credits: 2

Periods: 30

List of practical's	Number of Periods
1. Isolation of microorganism's (bacteria & fungi) from fish (Streak plate method).	9
2. Preparation and identification of fish fungal parasites	
3. Staining: Monochrome staining and Gram staining	
4. Identification of fish parasites : a) Ichthyophthirius b) Pseudomonas bacteria c) Saprolegnia d) Branchiomyces e) Dactylogyrus f) Gyrodactylus g) Ligula h) Fish leech i) Argulus j) Larnaea	9
5. Live and post mortem examination of fish and shellfish	6
6. Diagnosis of abiotic fish diseases	6
7. Visit to fish farm	

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Second Year (Semester V) Semester Pattern

Paper-XLV: Practical paper based on Ornamental Fish culture (COMAQ -3514)

Maximum Marks: 50

Credits: 2

Periods: 30

List of practical's	Number of Periods
1) Identification of common indigenous and exotic aquarium fishes: Egg layers and Live Bearers fishes (any four freshwater species)	9
2) Identification of common indigenous and exotic aquarium fishes: Egg layers and Live Bearers fishes (any four marine water species)	
3) Identification of common ornamental plants.: Fresh water 4) Identification of common ornamental plants.: Marine water 5) Fabrication of all glass aquarium tank of suitable size. 6) Setting-up of aquarium tank	9
7) Maintenance of an aquarium tank. 8) Identification, description and uses of aquarium and equipment accessories (any five). 9) Study of ornamental fish conditioning and packing	6
10) Setting up of breeding tank for breeding of aquarium fish species (any one)	6
11) Identification of fish diseases and prophylactic measures (any one)	

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Faculties)

Second Year (Semester V) Semester Pattern

Paper-XLVI: Practical paper based on Culture of Live Fish Food Organisms (COMAQ
-3515)

Maximum Marks: 50

Credits: 2

Periods: 30

List of practical's	Number of Periods
1) Collection and Preservation of Plankton	9
2) Qualitative and quantitative analysis of plankton	
3) Identification of Common Aquatic Flora And Fauna- Freshwater Fauna	9
4) Culture of cladocerans	
5) Culture of infusoria	6
6) Culture of tubifex	
7) Decasulation and hatching of artemia cyst	6
8) Evaluation of live food organism	
9) Role of biofilm in aquaculture	

Swami Ramanand Teerth Marathwada University, Nanded
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(Agriculture and Allied Faculties)

Third Year (Semester VI) Paper- XXXXVIII:

Farm Management, Production and Resource Economics (BAAGE-3616)

Maximum Marks: 100

Credits: 4

Periods: 45

Unit-I: Introduction to Farm Management (10)

Meaning and concept of farm management, objectives and relationship with other sciences. Meaning and definition of farms, its types and characteristics, factor determining types and size of farms. Principles of farm management: concept of production function and its type, use of production function in decision-making on a farm, factor-product, factor-factor and product-product relationship,

Unit-II: Concept of cost (15)

Meaning and concept of cost, types of costs and their interrelationship, importance of cost in managing farm business and estimation of gross farm income, net farm income, family labor income and farm business income. Farm business analysis: meaning and concept of farm income and profitability, technical and economic efficiency measures in crop and livestock enterprises.

Unit-III: Farm Records (10)

Importance of farm records and accounts in managing a farm, various types of farm records needed to maintain on farm, farm inventory, balance sheet, profit and loss accounts. Meaning and importance of farm planning and budgeting, partial and complete budgeting, steps in farm planning and budgeting-linear programming, appraisal of farm resources, selection of crops and livestock's enterprises.

Unit-IV: Risk Management (10)

Concept of risk and uncertainty occurs in agriculture production, nature and sources of risks and its management strategies, Crop/livestock/machinery insurance – weather based crop insurance, features, determinants of compensation. Concepts of resource economics, unique properties of natural resources. Important issues in economics and management of common property resources of land, water, pasture and forest resources etc.

Suggested Readings:

1. Economics of Agricultural Production and Resource Use: Heady, Earl O, Prentice Hall of India, Private Limited, New Delhi, 1964
2. Fundamentals of Farm Business Management: S.S. Johl, J.R. Kapur, Kalyani Publishers,
3. Agricultural Economics: Subba Reddy S., Raghuram P., NeelakantaSastry T.V., Bhavani Devi I., Oxford and IBH Publishing Company, Private Limited, New Delhi, 2006
4. Farm Management Economics: Heady Earl O and Herald R. Jenson, Prentice Hall, Delhi, 1954

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Certificate, Diploma, Advanced Diploma and B. Voc. Degree
(Agriculture and Allied Faculties)
Third Year (Semester VI)

Paper- XXXXIX: Human Resource Management (BAAGE-3617)

Maximum Marks: 100

Credits: 4

Periods: 45

Unit-I: Introduction to HRD (15)

HRD-Macro Perspective: HRD Concept, Origin and Need, HRD as a Total System; Approaches to HRD; Human Development and HRD; HRD at Macro and Micro Climate. HRD-Micro Perspective: Areas of HRD; HRD Interventions Performance Appraisal, Potential Appraisal, Feedback and Performance Coaching, Training,

Unit-II: Instructional Technology for HRD (10)

Learning and HRD; Models and Curriculum; Principles of Learning; Group and Individual Learning; Transactional Analysis; Assessment Centre; Behaviour Modeling and Self Directed Learning; Evaluating the HRD

Unit-III: Training and Development (10)

Human Resource Training and Development: Concept and Importance; Assessing Training Needs; Designing and Evaluating T&D Programmes; Role, Responsibilities and challenges to Training Managers.

Unit-IV: Training Methods (10)

Training with in Industry (TWI): On the Job & Off the Job Training; Management Development: Lecture Method; Role Play; In-basket Exercise; Simulation; Vestibule Training; Management Games; Case Study; Programmed Instruction; Team Development; Sensitivity Training; Globalization challenges and Strategies of Training Program, Review on T&D Programmes in India.

Reference Books:

1. Nadler, Leonard : Corporat Human Resource Development, Van Nostrand Reinhold, ASTD, New York .
 2. Rao, T.V and Pareek, Udai: Designing and Managing Human Resource Systems, Oxford IBH Pub. Pvt.Ltd., New Delhi , 2005.
 3. Rao, T.V: Readings in HRD, Oxford IBH Pub. Pvt. Ltd., New Delhi , 2004. 4. Viramani, B.R and Seth, Parmila: Evaluating Management Development, Vision Books, New Delhi.
 4. Rao, T.V.(et.al): HRD in the New Economic Environment, Tata McGraw-Hill Pub.Pvt, Ltd., New Delhi , 2003.
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**SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY,
NANDED**

Choice Based Credit System (CBCS) (Semester Pattern)

Theory Examination

Question Paper Pattern (B.Voc.)

Maximum Marks: 75

Time: 3.00 Hrs

Q1. Long Answer Type Question (15 Marks).

OR

a) Short Answer Type Question (8 Marks).

b) Short Answer Type Question (7 Marks).

Q2. Long Answer Type Question (15 Marks).

OR

a) Short Answer Type Question (8 Marks).

b) Short Answer Type Question (7 Marks).

Q3. Long Answer Type Question(15 Marks).

OR

a) Short Answer Type Question (8 Marks).

b) Short Answer Type Question (7 Marks).

Q4. Long Answer Type Question (15 Marks).

OR

a) Short Answer Type Question (8 Marks).

b) Short Answer Type Question (7 Marks).

Q5. Write a short note on (**Any three** of following) (15 Marks).

a)(5 Marks)

b)(5 Marks)

c)(5 Marks)

d)(5 Marks)

e)(5 Marks)

**SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY,
NANDED**

Choice Based Credit System (CBCS) (Semester Pattern)

Practical Examination

Question Paper Pattern (B.Voc.)

Maximum Marks: 50

Time: 4.00 Hrs

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- Q1.** Perform the Major Experiment (20 Marks).
- Q2.** **a)** Perform the Minor Experiment (10 Marks).
 b) Describe procedure and working of the Minor Experiment (10 Marks).
- Q3.** **a)** Viva -voce (5 Marks).
 b) Submission of Field Collection and Samplings during (5 Marks).
 Field Visits and Excursions
