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Metric No: 1.3.2.
Number of value-added courses for imparting transferable and life skills offered during last five years.

DVV Comment:

Provide Brochure/ Course content of Disease Identification, Life skills education, Basic computer applications, PTC Tasting Protocol, Basic of Process Instrumentation, R program software.

HEI Response:

1. Provided Brochure on Value-added courses.
2. Provided Course content on
    a. Disease Identification
    b. Life skills education
    c. Basic computer applications
    d. PTC Tasting Protocol
    e. Basic of Process Instrumentation
    f. R program software

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REGISTRAR
S.V. UNIVERSITY
TIRUPATI.

Prof. M. Srinivasulu Reddy
Director
NAAC Steering Committee
Sri Venkateswara University
Tirupati-517 502

SRI VENKATESWARA UNIVERSITY
NAAC A+ GRADE

Why Value Added Courses

To make Students lead for Industry

To bring the skill gaps of Students and make Students ready for job

To provide an opportunity to Students to develop Interdisciplinary Skills

To provide hands on training

LIST OF VALUE ADDED COURSES
2020-2021 & 2021-2022

Name of the Department	Name of the value-added courses offered (with 30 or more contact hours)
Electrical & Electronics Engineering	Basic course on AC-DC Drivers
	Basic of Process Instrumentation
Botany	Mushroom cultivation
	Hydroponics
Biotechnology	DNA Bar coding of plants
	Chromatographic Techniques - Paper Chromatography, Thin Layer Chromatography, Column Chromatography, HPLC
Environmental Sciences	Ecology and Waste Management
Geography	Geographical information system (GIS)
Home science	Baking Technology
Mathematics	Basics of Computing Skills
Statistics	R program software
Virology	Diagnostic virology
Zoology	Blood Grouping Protocols
	Pedigree Analysis
Commerce	Basic Accounting with Accounting Software
	Online Trading
Computer Science and Engineering	Cyber Security
Civil Engineering	Machine Learning

52 DEPARTMENTS OFFERING 88 PROGRAMS

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ACCRECADITED 'A+' GRADE

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SRI VENKATESWARA UNIVERSITY: TIRUPATI
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VALUE ADDED COURSE
DISEASE IDENTIFICATION IN FISH
SYLLABUS (30 Contact hours)

1. DISEASES OF FIN FISHES: - Introduction to fish diseases – Definition and categories of diseases – Disease and Environment.

2. Disturbance in cell structure – Changes in cell metabolism, progressive and retrogressive tissue changes.

3. Types of degeneration, infiltration, necrosis, cell death and causes; Atrophy, hypertrophy, neoplasm and inflammation.

4. Bacterial: *Necrotizing Hepatopancreatitis* (NHP); *Vibrio species*(Vibriosis). *Richettsia Aerococcus viridans var*. Homari

5. Parasites: Microsporidia, *Hematodinium* -like organism, *Parauronema spp*.

6. Viral Diseases: *Yellow – Head Virus* (YHV) *White spot Syndrome* (WSSV); *Tanura syndrome virus* (TSV).

7. *Infectious Hypodermal and Hematopoietic Necrosis Virus* (IHHNV); *Infectious Myonercrotic Virus* (IMNV).

8. Water and soil management for disease prevention and control in fish farming.

9. Molecular methods of fish diseases, bacteriological methods.

10. Histological techniques in fish diseases and diagnosis.

11. Investigating fish diseases: Observation on pond and fish and sampling.

12. DISEASE DIAGNOSTIC TOOLS: - Immunological detection - DNA / RNA techniques.

13. General Preventive methods and prophylaxis.
14. Application and development of vaccine and immunostimulants, Quarantine methods, zero water exchange

15. Use of probiotics in Aquaculture.

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VALUE ADDED COURSE

LIFE SKILLS EDUCATION

SYLLABUS (30 Contact hours)

1. **Life Skills** – **Meaning and Significance** -Life skills -Definitions WHO- Core Life Skills -Decision Making, Problem Solving.

2. Critical Thinking, Effective Communication Skills, Creative Thinking, Interpersonal relationships, Self-awareness.

3. Empathy, Coping with Stress and Emotions.

4. Categories of Life Skills - Social skills and Negotiation skills, Thinking skills and Coping Skills.

5. **Social Skills and Negotiation Skills** -Self-awareness – Definition, Need

6. SWOT Analysis – Jo-Hari Window - strategies to improve Self-awareness.

7. Empathy – Difference between Empathy and Sympathy, Strategies to improve empathy skills for improving negotiations

8. Effective Communication and Interpersonal relationships – Types of communication – Verbal, Non-verbal communications.

9. Effective Communication: Assertiveness, Effective Listening, Barriers of Communication,.

10. **Thinking Skills -** Problem Solving – Defining a problem, steps in problem solving skills, Analytical thinking.

11. Critical Thinking and Creative Thinking –Definition and Strategies for developing critical and creative thinking.

12. Decision Making -Importance, steps in Decision Making- Six Thinking Hats for decision making.

13. **Coping Skills -** Emotional Skills –Emotional intelligence –concept and areas - Characteristics of an emotionally intelligent person.

14. Coping with Emotions – Positive and Negative emotions – Strategies for Management of emotions.

15. Coping with Stress – Reasons and effects of stress, Strategies for coping up with stress.

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SRI VENKATESWARA UNIVERSITY
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VALUE ADDED COURSE

BASIC COMPUTER APPLICATIONS

SYLLABUS (30 Contact hours)

1. **Basic Computer Concept** - Characteristics of Computers, Input, Output, Storage units, CPU, Computer System.
2. Central Processing Unit - Processor Speed, Cache, Memory, RAM, ROM, Booting.
3. Secondary Storage Devices - Floppy and Hard Disks, Optical Disks CD-ROM, DVD, Mass
4. Storage Devices - USB thumb drive. Managing disk Partitions, File System Input, Devices - Keyboard, Mouse.
5. **Word processing concepts-** Saving, closing, Opening an existing document, Selecting text, Editing text, Finding and replacing text, printing documents.
6. Creating and Printing Merged Documents, Character and Paragraph Formatting, Page Design and Layout, Editing 4 and Profiling.
7. Tools - Checking and correcting spellings, Handling Graphics, Creating Tables and Charts, Document Templates and Wizards.
8. **MS-Excel -** Overview of Excel features – Creating a new worksheet, Selecting cells, Entering and editing Text, Numbers, Inserting Rows/Columns.
9. Changing column widths and row heights, Formulae, Referencing cells , Changing font sizes and colors, Insertion of Charts, Auto fill, Sort.
10. **MS-PowerPoint**- Features of PowerPoint – Creating a Presentation - Inserting and Deleting Slides in a Presentation.
11. Adding Clip Art/Pictures -Inserting Other Objects, Audio, Video - Resizing and scaling of an Object.
12. Slide Transition – Custom Animation.

REFERENCE BOOKS:

1. Working in Microsoft Office – Ron Mansfield - TMH.

2. MS Office 2007 in a Nutshell –Sanjay Saxena – Vikas Publishing House.

3. Excel 2020 in easy steps-Michael Price – TMH publications

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SRI VENKATESWARA UNIVERSITY
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VALUE ADDED COURSE
PTC PROTOCOLS
SYLLABUS (30 Contact hours)

1. Principles of Human genetics and molecular genetics.
2. Genetics of Human Taste Perception.
3. PTC polymorphism.
4. Harris – Kalmus' threshold solutions and differentiation.
5. Sample Inheritance Pattern for PTC Tasting.
6. Pedigree analyses of PTC taste sensitivity.
7. PTC tasting ability in a random sample and calculate gene frequencies for the taster and nontaster alleles.
8. Genetics of individual differences in bitter taste perception: lessons from the PTC gene.
9. PTC - Genotyping a SNP With in a Gene by PCR-RFLP.

Suggested Reading Material:

1. Lewin, B.2000. Genes VII. Oxford University Press, New York.
2. Singh, B.D. 1990. Fundamentals of Genetics. Kalyani Publishers, Ludhiana.
3. Jeffrey L. Reinking Jennifer T. Waldo Jannett Dinsmore. A Trio of Human Molecular Genetics PCR Assays. Biochemistry and Molecular Biology Education 2012.
4. Harris, H.; Kalmus, H. "The measurement of taste sensitivity to phenylthiourea (PTC)". Ann. Eugen 1949.
5. Kim UK, Drayna D. Genetics of individual differences in bitter taste perception: lessons from the PTC gene. Clin Genet. 2005.
6. Strickberger, M.W. 1996. Genetics (3rd edn.). Mac Millan Publishing Co., New Delhi.

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SRI VENKATESWARA UNIVERSITY
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VALUE ADDED COURSE

BASIC OF PROCESS INSTRUMENTATION

SYLLABUS (30 Contact hours)

1. Process Characteristics- Types of processes (dead time single & multi capacity, self & non-self regulating,
2. Interacting & non-interacting, Linear & non-linear), Process gain, process reaction
3. Curve, process time constant, dead time, dynamic elements in control loops
4. Process simulator.
5. Analysis & properties of some common loops
6. Flow, pressure level, temperature, composition, pH etc., linear & non-linear controllers,
7. Digital controller (position & velocity algorithms, effect of sampling time)
8. Hardware structures, features & specification, single loop & multi
9. Loop controller & the application programs
10. Proportional time, dual mode optimal switching.
11. Multi loop & multivariable process control systems
12. Feedback, Feed Forward control, Cascade Control, Ratio Control, Selective Control,
13. Split-range Control.Interaction & Decoupling, Relative Process Gain Matrices (RPG) &
14. Applications,
15. Statistical Process Controls.

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VALUE ADDED COURSE

R PROGRAMMING SOFTWARE

SYLLABUS (30 Contact hours)

1. Familiarizing with R environment, Using R console as a calculator
2. R atomic types, methods of creating vectors, combining vectors and repeating vectors,
3. Different ways of sub setting vectors using indexing, names and logicals.
4. Arithmetic and logical operations.
5. Using character vectors for text data, manipulating text using strsplit(), paste(), cat(), grep(), gsub() functions; handling factor data.
6. Working with data
7. Creating Matrices, getting values in and out of matrices,
8. performing matrix calculations;
9. Working with multidimensional Arrays; creating data frames, getting values in and out of data frames, adding rows to data frame, adding variables to data frame; creating lists, extracting components from a list, changing values of components of lists.
10. Getting data into and out of R - reading data in CSV files, EXCEL files,
11. SPSS files and working with other data types. Getting data out of R – working with write.csv() and write.table() functions.
12. Working with probability distributions - normal, binomial, Poisson and other distributions. Summary statistics, hypothesis testing - one and two-sample Student's t-tests,
13. Wilcoxon U-test, paired t-test, paired U-test, correlation and covariance, correlation tests,
14. tests for association- Chi-squared test and goodness-of- fit tests.
15. Formula notation, one-way and two-way ANOVA and post-hoc testing, graphical summary of ANOVA and post-hoc testing, Extracting means and summary statistics; linear regression.

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