

Program Guide



Virtual Open Schooling

Sustainable inclusive learning for quality education and skill development

Courses Available

-ICT Applications

-Rural Development



राष्ट्रीय मुक्त विद्यालयी शिक्षा संस्थान
National Institute of Open Schooling

(The Largest Open Schooling System in the World) ISO 9001:2008 CERTIFIED

Virtual Open Schooling (VOS)



Programme Guide



National Institute of Open Schooling
A-24/25, Institutional Area, Sector-62, NOIDA, U.P.

1. National Institute of Open Schooling (NIOS)

The National Institute of Open Schooling (NIOS) was set up by the Ministry of Human Resource Development, Government of India as an autonomous organization in 1989 by amalgamating Open School project of CBSE started in 1979. It was known as National Open School till 2002. NIOS provides educational opportunities using distance and open learning methods to persons who wish to study and qualify for a better tomorrow. The Mission of NIOS is to provide education for all with special concern for girls and women, rural youth, working people, SC/ST, physically and mentally challenged and other deprived groups.

NIOS is an Open Learning Institution for school level courses as well as examining and certifying authority by itself. NIOS is one of the National Boards like CBSE and CISCE.

1.2 Salient Features

- **No Age Limit:** There is no upper age limit for registration to NIOS courses, however the minimum age for enrollment in Secondary Courses and for Vocational Courses is 14 years and for Senior Secondary Courses is 15 years.
- **Choice in Medium of Instructions:** NIOS offers its courses mainly in Hindi, English, and Urdu mediums. Learners may, however, write the examination in any Indian language included in the Constitution of India.
- **Choice of Subjects:** Learners can choose any subject combination from the subjects offered in the courses of study.
- **Combination of Academic and Vocational Subjects:** One stand alone vocational subject can be combined with academic courses at Secondary level and Senior Secondary level.
- **Validity of Registration:** You can complete your course in a maximum period of five years from the year of registration.
- **Flexibility in Examination:** You can avail maximum of nine chances to appear in public examinations spread over a period of five years.
- **Credit Accumulation:** You can choose to appear in any one or more subjects in an examination and earn credit till all the subject(s) required for certification are successfully completed.
- **Transfer of Credit:** Under this scheme, you may transfer your pass credits maximum of two subjects from CBSE and other selected Boards in the academic courses.

- **Re-admission:** The ex-students of NIOS who have completed their validity period of five years of admission, but could not complete the course, are eligible to take Re-admission. The credit(s) of maximum of four subjects may be transferred for the fresh admission, if these subjects were passed during last ten years.

1.3 Courses of Study

NIOS provides education up to pre-degree level to those who for one reason or the other could not make use of the formal education system. NIOS offers the following courses to meet the needs and requirements of such group of learners (Open schooling is for all learners of the society and offers the promise of being the mainstream learning system like the present day formal schooling system at some point of time in future).

1.3.1 Open Basic Education (OBE)

The NIOS has introduced the Open Basic Education (OBE) Programme as an alternative educational programme to align with the objective of Ministry of Human Resource Development (MHRD), Government of India, to provide Basic Education to all children, youth and adults in the country under its Sarva Shiksha Abhiyan (SSA). OBE programmes of NIOS is equivalent to the Elementary Education Programme of the formal education system. It is offered at the following three levels:

Level A: equivalent to class - III

Level B: equivalent to class - V

Level C: equivalent to class – VIII

1.3.2 Secondary Course

This course is equivalent to 10th standard of the formal schooling system. One can join this course irrespective of any formal pre-qualification. Successful completion of minimum of five subjects is necessary for obtaining a certificate. Wide range of subjects are available to choose from. The course may be completed in a minimum period of one year to a maximum of 5 years.

1.3.3 Senior Secondary Course

This Course is designed for those who have passed X standard or equivalent examination and would like to continue their education towards a Senior Secondary Certification, equivalent to XII standard. The course is as par to class XII of other National/State Board.

1.3.4 Vocational Education Programme

NIOS also offers vocational education courses at school level keeping in view the needs of target groups. Presently, 97 courses are on offer in the broad areas of Engineering &

Technology, Health & Paramedical, Home Science & Hospitality Management, Computer & Information Technology, Business & Commerce, Agriculture and Teacher Training, Industrial Safety and Security, Library Science, Dance & Music, Life enrichment courses and Rural Entrepreneurship programme for Gramin Dak Sevak of Department of Post, Govt. of India.

1.3.5 Life Enrichment Courses

NIOS offers some subjects as Life Enrichment Courses viz., Paripurna Mahila (Women Empowerment), Yog, and Hindustani Music etc. These courses are meant for self development and enrichment of knowledge. No examination is conducted for these courses. Some of these courses are also available as Certificate Courses for which the examination is conducted.

2. Virtual Open Schooling (VOS)

Virtual Open Schooling (VOS) is an educational practice that provides opportunity to learners to study a formal school-based course online and gain credit for certification purpose. Learners can study using asynchronous or synchronous technologies. The courses are based on the existing Open Educational Resources (OER) of NIOS, and are built around a Learning Management System (LMS) with content stored on on-line repositories. Digital media integration would facilitate effectiveness of curriculum. Synchronous and asynchronous technologies would facilitate interactions with peer-group, with teachers, and with content. Keeping above in view, NIOS has launched VOS in collaboration with Commonwealth Education Media Centre for Asia (CEMCA) to serve learners who want to continue their education and skill development.

2.1 The major objectives of the Virtual Open Schooling (VOS) :

- provide opportunities for continuing and developmental education to interested learners,
- attract sizeable segment of population to varied vocational education courses
- prepare students for self-reliance and self-employment,
- personalize a student's curriculum and lessons customized for the learner,
- provide learning beyond the classroom walls, school bell schedule and school-based courses, and
- provide students with the tools and processes that will prepare them to be successful in the 21st Century.

2.2 Advantages of Virtual Open Schooling

- Personalized & tailored content : suited to individual learning
- Flexibility: Anywhere Anytime access, students can enrich their skills in learning a new subject or take up a course or class normally not available at their schools
- Lower costs : Saves on permanent infrastructure costs
- Access to high quality education : Access to quality teachers and peers, increases collaboration
- Powerful innovation : It expands educational opportunities

2.3 Admission through Virtual Open Schooling (VOS)

2.3.1 Admission Procedure: The admission process is online. The application would have interface for student to fill up details for enrollment and an administrative interface for verification of details and finalization of admission. For admission to ICT Applications and Rural Technology courses one has to apply in the online prescribed application form available with VOS website <http://vos.nios.ac.in>. Students can submit their application form round the year at VOS website.

Name of the Course/ Programme	Entry Qualification	Duration	Age at the time of Admission	Course Fee	Name of the Module(s)/ Topics
1. ICT Applications	10 th Pass	6 Months	15 years	Rs.3000/	1. IT and Office Tools 2. IT Applications
2. Diploma in Rural Technology	8 th Pass	2 year duration (6 months for each module)	14 years	Rs.4000/	1. Agriculture and Animal Husbandry 2. Rural Industries 3. Energy Services 4. Food

					Processing
3. Certificate in Agriculture & Animal Husbandry	8 th Pass	6 Months	14 years	Rs. 1500/-	Nursery, Composting, Polyhouse, Fodder, Soil, Dairy, Farming, Sericulture, Beekeeping
4. Certificate in Rural Industries	8 th Pass	6 Months	14 years	Rs. 1500/-	Fabrication Agricultural tools, Carpentry – Bamboo, Construction – low cost housing, pottery
5. Certificate in Energy Services	8 th Pass	6 Months	14 years	Rs. 1500/-	Renewable energy services, Water harvesting, storage and conservation, Electrical Services
6. Certificate in Food Processing	8 th Pass	6 Months	14 years	Rs. 1500/-	Food Fundamentals , Fruits and vegetable, Dairy processing, Bakery &

					confectionary , Packaging
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Table 1

2.3.2 Prerequisites for the Online Admission through Virtual Open Schooling (VOS)

- Students should fulfill the minimum eligibility criteria for the course. (Please see the ‘Table 1’)
- A laptop/computer/tablet with internet activated
- A valid e-mail ID
- Soft copy of passport size photograph such that applicant signature below the photograph
- Soft Copy of the certificates (to check eligibility criteria for the certificates)
- Soft copy of Age proof (Aadhar card/DOB Certificate/School Leaving Certificate (SLC)/10th Certificate)
- Soft copy of caste certificate (if applicable)
- Credit Card/Debit Card or On-line banking for payment of Fees

2.3.3 Procedure for On-line Admission

- Login to VOS web site <http://vos.nios.ac.in/>
- Click the Course for registering online.
- A page appears with information on courses for registering online – its eligibility, fee structure and details regarding last date etc.
- Please click on the “Instruction” and then “Information” and “Procedure” before moving ahead. The instruction and Information page will give you all information regarding online admission – eligibility, Fee structure, documents required etc. Procedure page will guide you on how to proceed for online registration.
- After that you come back to main page and then you can click one of the course/ programmes available for registration depending upon your requirement.
- Then appears the Login page of online admission. In order to take online admission, the student is required to register with VOS system, for this the student should have a valid and functional e-mail id and a password.
- If you are visiting for the first time then you will have to create Username and password for the VOS system along with your valid Email ID. For this click “Click here to register”.

- Clicking this will appear the register page where you enter username (minimum of 8 characters), your existing, valid and functional email-id. Then you enter a password which can be anything but should be minimum of 6 characters. Choose such password which you can remember as you will be using the same for monitoring the status of your application. This password is not the password of your e-mail id. Then you enter the password once again to reconfirm.
- Now you are registered with VOS system. Login with the registered username and password.
- After due validation of your username and password, the blank application form appears.
- Now you start filling the form. The first is selecting your course. Then fill your personal and educational details. Make sure that you fill the correct educational qualification as per the educational qualification proof submitted by you.
- Then upload your photo. For this you should have a .jpg/.png/.gif file of your recent passport size photograph ready with you. A Soft copy of passport size photo (maximum size of the photograph should be below 50 KB along with signature a width of 1.5 inches and height of 2 inches).
- Then upload the Soft Copy of certificates so that eligibility criteria can be checked (Certificates should be below 500 kb with a resolution of 300 X 300)
- Soft Copy of Age proof (Should be below 500 kb with a resolution of 300 X 300)
- After completion of the form, you click “next” button, this will bring the pre-view of your filled up form where you can check whether all entries are correct or not. If you find anything to be corrected then click the “Edit” button appearing at the end of your application.
This will enable you to make changes in your application and then you click “Next” button again.
- Again your application will appear in the pre-view mode and then check all entries. If all are correct Proceed for the “Payment Page”
- Then the payment page appears on the screen where you need to fill up. The payment can be made through any credit card (Master/Visa) or Debit Card (only VISA of Selected Bank) or Net Banking
- In response to the submission an Acknowledgement Receipt appears on the screen indicating your unique Reference Number, your personal details, fees details, etc., This receipt is also sent to your email id for which you can check your email.

- Then you click the “Print the Application” button and take print out of the filled in application form.
- Once VOS Admin receives your application and after due verification of the documents and confirmation of the fees, the status of the application will be updated on the Internet. Appropriate communication/email will be sent out to the Students when a status change occurs.
- You can see the status of your application by login with the same username and password. You can also view your application and Print your application by clicking “Print Application”
- After the successful completion of Verification process , the Enrollment No. of the student will be generated and the Identity card will be dispatched to the individual student.
- These updates will be done on the Internet and will also be sent to the individual student through e- mail.
- For any query regarding online admission, kindly write to us at: **vos@nios.ac.in**

2.3.4 Cut off Dates For admission:

Admission Session	Academic Session	Exam Fee Submission	Term End Online Examination
January to March	April to September	1 st September to 15 th September	September/October
April to June	July to December	1 st December to 15 th December	December/January
July to September	October to March	1 st March to 15 th March	March/April
October to December	January to June	1 st June to 15 th June	June/July

Table 2

2.3.5 Minimum Age:

Please refer to the ‘Table 1’ for age requirements.

2.3.6 Confirmation of Admission:

After the successful submission of online application form, take the print out of the application form and send it along with the attested copy of the relevant documents to the

Director (Vocational), 5th Floor, NIOS headquarter, A-24/25, Institutional Area, Sector-62, NOIDA, U.P. On the top of the envelope please write “Application for admission through VOS and Course / Programme name”.

- Once NIOS receive your application and after due verification of the documents and confirmation of the fees, the status of the application will be updated on the Internet. Appropriate communication/email will be sent out to the students when a status change occurs.
- You can see the status of your application by login with the same e-mail id and password. You can also view your application by clicking “Print Application”
- After the successful completion of Verification process , the Enrollment No. of the student will be generated and the Identity card will be dispatched to the individual student.
- These updates will be done on the Internet and will also be sent to the individual student through e-mail.
- For any query regarding online admission, kindly write to us at: **vos@nios.ac.in**

2.3 Fee structure for the admission through VOS for the following courses:

Please refer ‘table 1’ for fee details, course wise.

2.4 Contact Hours

- ICT Applications:** This certificate programme has 8 credits i.e. 240 study hours, including theory and practical components. Note that one credit is equivalent to 30 study hours for learners including personal contact programme, hands on experience, project work, assignment etc.
- Rural Technology:** There are 4 certificate courses
 1. Certificate in Agriculture & Animal husbandry (code: 489),
 2. Certificate in Rural Industries (code: 490)
 3. Certificate in Energy Services (code: 491)
 4. Certificate in Food Processing (code: 492)

There is multi-entry and multi-exit provision for the learners. Each module is having 4 credits i.e. 120 study hours, including theory and practical components.

Note that one credit is equivalent to 30 study hours for learners including personal contact programme, hands on experience, project work, assignment etc. On an average 10 hours of virtual classes (contact hours) will be conducted for each certificates course.

2.5 Syllabus and Academic calendar

Syllabus is given in **Annexure I** for the both program i.e. ICT applications and Rural Technology

Academic calendar for the ICT Applications and Rural Technology is also given in **Annexure II**.

3. Scheme of study

Currently, NIOS is offering one Diploma and 5 Certificates vocational courses under the Virtual Open Schooling (VOS), viz., Diploma in Rural Technology, Certificate in Agriculture & Animal husbandry (code: 489), Certificate in Rural Industries (490), Certificate in Energy Services (491), Certificate in Food Processing (492) and ICT Applications(637).

3.1 Medium of instruction:

The courses are available initially in English medium. However other regional medium will be introduced to due course.

3.2 Duration of Studies:

The minimum duration to complete each courses is 6 months. However, one can complete a certificate or diploma programme within a period of five years.

3.3 Delivery Mechanism:

The course content will be available on the NIOS web site accessible to all learners with their unique user ID and password. NIOS is using Learning Management System (LMS) for the direct interaction between the learners and teachers which has enabled the following features:

- **Online Admissions:** Learners have to take admission in prescribed online form as per the guidelines given. For this learners have visit at <http://vos.nios.ac.in>

- **Online content related to the subjects with multimedia (audio, video, animation, simulation etc.):** Study material of the respective courses as per syllabus is available on the VOS website only.
- **Online live Chat-Rooms:** This facility will provide learners and teachers to interact in synchronous mode.
- **Discussion Forum:** This forum is for the students and teachers to share their views, queries, activities and assignment notifications etc.
- **Blog :** This facilitates the personal diary of the learners and teachers.
- **Online Classes :** This facilitates teachers to take the virtual class through videoconferencing.
- **Online practical activities:** All type of practical activity will be done online under the guidance of teacher. There will be separate guidelines for the practical.
- **Online Assignment:** Submission of the assignment by the learners will be done online as per the guidelines provided by the teacher.
- **Online Assessment:** Evaluation and assessment also will also be done online by the teachers on the basis of learners engagement in the program.
- **Different media used for classes, i.e., presentation, documents, video, animation, etc.**
- **Online project work:** Project work assigned by the teacher has to be submitted online.

3.4 Course Content

Currently, NIOS is offering one Diploma and 5 Certificates vocational courses under the Virtual Open Schooling (VOS), viz., Diploma in Rural Technology, Certificate in Agriculture & Animal husbandry (code: 489), Certificate in Rural Industries (490), Certificate in Energy Services (491), Certificate in Food Processing (492) and ICT Applications. Students are requested to choose one of the modules out of four at a time. There is separate certification for each module. After completion all four modules student will be awarded Diploma in Rural Technology.

4. Evaluation

NIO) evaluation system has many flexibilities to help you to complete your studies as per your convenience. The evaluation system has been devised to test your understanding and skills in a comprehensive manner giving more emphasis on the practical component.

4.1 Freedom of Taking Examination

You need not hurry up to take your examination. Instead, you should master your learning and take examination when you are ready for it. You will have the opportunity to avail a maximum of 9 chances in 5 years time period to complete your course. You are free to choose any examination without any condition after completing requisite study period and practical training.

4.2 Medium of Evaluation

The question papers for the examinations will be in English only.

4.3 Registration for Examination

Kindly refer to the 'Table 2' for more details.

4.4 Examination and other Fees

You have to submit online examination form with requisite fee within the specified time to register for the term end examination and pay the examination fee online through net-banking, credit/debit card. Examination fee for all types of VOS courses/programmes is Rs. 300 per subjects/module (together for Theory, Practical, and Internal Assessment).

4.5 Scheme of Evaluation

Scheme of evaluation for ICT Applications programme is given in **Table 3**.

Program/Course Name	Name of the Module	Time (in hrs.)		Marks				
				Theory		Practical		Total
		Theory	Practical	Theory	Assignment	Practical	Project Work	
ICT Applications	IT and Office Tools	2	2	40	10	40	10	100
	IT Applications	2	2	40	10	40	10	100

Table 3

For the ICT applications programme weightage of 40% on theory and 60% on practical (including project work) has been given.

Scheme of evaluation for Diploma in Rural Technology programme is given in **Table 4**.

Program/Course Name	Name of the course/module	Time (in hrs.)		Maximum Marks			Total
		Theory	Internal Assessments	Theory	Internal assessments	Project Work	
Rural Technology	Certificate in Agriculture & Animal Husbandry (489)	1.5	-	50	30	20	100
	Certificate in Rural Industries (490)	1.5	-	50	30	20	100
	Certificate in Food Processing (492)	1.5	-	50	30	20	100
	Certificate in Energy Services(491)	1.5	-	50	30	20	100

Table 4

Note. A student admitted in the Diploma in Rural Technology program through VOS will be required to complete all four certificate courses mentioned above within the stipulated time to become eligible for the award of diploma.

Components of details and weightage of marks for theory, internal assessments and project are mentioned below:

Theory

For each certificate course, one term-end theory examination will be held on completion of the designated study hours (120 hours for each certificate course). The mode of examination will be online and duration will be one hour thirty minutes. The questions will be of Objective Types like Multiple Choice Question (MCQ), match the following etc. The component of theory will be 50% in the aggregate marks.

Internal Assessments

There will be two Internal Assessments (IAs) during each certificate course. First IA will be held after 1 month and 20 days from the first instructional day. The second IA will be held after 3 months and 10 days from the first instructional day. Component of Internal Assessment in the aggregate marks will be 30%. The guidelines will be followed for completion of IA. There will be activities and subjective questions in the internal assessments.

Project

Based on the course curriculum, the learner will be allowed to opt for a project topic out of the given options.

Time line for the project activity:

- Project assigning to the learners : within 1 month from the first instructional day.
- Uploading of the project progress report by the learner at the designated location : within 1 month from the date of allotment of assignment.
- Final report uploading by the learner : latest by 15 days before the scheduled term-end theory examination.

*Failing to submit the project progress report of Phase – 1 or final project report of Phase – 2 in stipulated time, the learner will be required to take special permission from the Director (Vocational Education) to be allowed to appear for the term-end theory examination by giving acceptable reason. Component of project in the aggregate marks will be 20%.

Activities to be done in project work

Phase - 1

1. Selection of Project
2. Objectives
3. Field survey if any
4. Methodology

Phase - 2

1. Procedure
2. Observations
3. Records
4. Photographs
5. Conclusion

Marking Criteria

Total marks will be awarded out of 100 which will be the aggregate marks obtained in theory, internal assessment and project components of assessment.

Table 5 Summarizes the scheme of examination for Diploma in Rural Technology (including certificate courses).

Components	Point of time	Maximum marks	Comment
Theory	Term – end	50	One mark objective type questions will be given in the 1.5 hour online test.
Internal Assessment-1	1 month 20 days from first instructional day	15	Learner has to select and complete the assignments and upload them at designated place at VOS platform. Each assignment will carry 15 marks aggregating maximum of 30 marks.
Internal Assessment-2	3 months 10 days from first instructional day	15	
Project Phase-1	Within 1 month	20	Phase – 1 of project work report has to be submitted within 1 month from the date of allotment of project.
Project Phase-2	15 days prior to the theory examination		Phase –2 of project work report has to be submitted 15 days prior to the theory examination. This report should contain the complete project work.

Table 5

Note. Candidate has to pass each of 1) theory, 2) internal assessment and 3) project work separately during the same examination session to become eligible for the certificate.

4.6. Pass Criteria

Pass criteria for the ICT Applications programme is given in **Table 6**.

Program/ Course Name	Name of the Module	Passing Criteria (in percentage)			
		Theory	Assignment	Practical	Project Work
ICT Applications	IT and Office Tools	40	50	50	50
	IT Applications	40	50	50	50

Table 6

Pass criteria for the Rural Technology programme is given in **Table 7**.

Program/ Course Name	Name of the course/module	Passing Criteria (in percentage)			
		Theory	Internal assessment	Project work	Aggregate
Rural Technology	Certificate in Agriculture & Animal husbandry (489)	40	50	50	50
	Certificate in Rural Industries (490)	40	50	50	50
	Certificate in Food Processing (492)	40	50	50	50
	Certificate in Energy Services (491)	40	50	50	50

Table 6

4.7 Improvement of Performance

NIOS will allow you to apply again in a course, which you have already passed for improvement of performance. This facility is given only once.

4.8 Issue of Certificates

After successfully completion of the course (theory, practical, project work etc.), the Marks Statement and Certificate will be dispatched to learners directly at their addresses. However, the scanned copy of the Certificates will also be available online on the VOS portal.

Annexure - I
Syllabus

1. Syllabus of ICT Applications

ICT Applications			
Module -1 IT and Office Tools			
Serial No.	Lessons	Topics	Weightage(%)
1.	Basic Concepts of Computer	Computer Fundamentals	10
		Computer and its Component	
		Storage Devices	
		System Software and Applications	
		Programming Languages	
		Open Source Software	
		Operating System	
		Functions of OS	
		Types of OS	
		File System	
		Knowledge and application of OS	
Computer Security			
2.	Computer communications and Networking	Communication Fundamentals	10
		Networking Fundamentals	
		Teleconferencing and Video Conferencing	
3.	Internet and its usage	Internet and its Applications	10
		Web Browsing	
4.	Internet Communications	E-mail	10
		Instant Messaging	
5.	Office Productivity Tools	Word Processing	10
		Spread Sheet	
		Presentation Tool	
		Database Management	

Module – 2 IT Applications			
6.	System Analysis & Design	System Introduction and Life Cycle	10
		System Development Life Cycle	
		System Description Techniques	
		Data Flow Diagrams	
		Flow Chart	
		Decision Table & Decision Trees	
		System Development Methodology	
7.	Php- MySQL Programming	PHP	10
		MySQL	
8.	HTML and Java Scripting	Project : Website Design & Development	10
		Scenario based examples of Projects	

2. Syllabus of Rural Technology

I. Certificate in Agriculture & Animal husbandry (489)

Sr. No.	Lesson Name	Sub Topics (Competency)	Weightage (%)
1.	Soil	<ul style="list-style-type: none"> • Survey of Village/Town • Soil samples • Determination of moisture content of soil sample • Physical and chemical properties of soil samples • Testing of soil samples for: <ul style="list-style-type: none"> ➤ Physical property ➤ Chemical property 	10
2.	Farming Activity	<ul style="list-style-type: none"> • Selection of field • Selection of crop • Packages and practices for crop cultivation 	10
3.	Composting & Bio	<ul style="list-style-type: none"> • Composting • Vermi-composting 	5

	fertilizers	<ul style="list-style-type: none"> • Bio-fertilizers for crop production & method of application 	
4.	Plant Propagation & Nursery Management	<ul style="list-style-type: none"> • Different methods of propagation • Rooting media, plant bio-regulators and instrument used in plant propagation • Different types of nurseries, component of ideal nursery 	10
5.	Protected Cultivation	<ul style="list-style-type: none"> • Protected Structures for crop cultivation • Poly houses for crop cultivation • Designs and classification of greenhouse • Green house structures • Crop cultivation in Green house 	10
6.	Irrigation	<ul style="list-style-type: none"> • Classification of water • Critical stages of crops for irrigation • Irrigation requirements of crops • Different irrigation methods 	10
7.	Crop Protection	<ul style="list-style-type: none"> • Important insect- pests in different crops • Economically important diseases in different crops • Integrated insect-pest management • Integrated plant diseases management • Major weeds and their management • Important plant parasitic nematodes 	10
8.	Dairy Farming	<ul style="list-style-type: none"> • Importance and scope of dairy farming, Terminologies, Breeds • Management of dairy animals – Calf, heifer, dry, pregnant, lactating, bull • Reproduction – oestrous cycle, heat detection, artificial insemination, gestation period, pregnancy diagnosis • Important diseases and their control – including metabolic and reproductive disorders • Housing – Types of housing, space requirements, cleanliness and hygiene, animal waste disposal • Milking management – milking methods, clean milk production 	15
9.	Feed & Fodder Management	<ul style="list-style-type: none"> • Important feeds and fodders – concentrate, fodder, unconventional feed, feed additives • Feeding of dairy animals – nutritional requirements, feeding methods • Conservation of fodder – Straw, hay, silage, urea molasses block • Formulation of ration, balanced ration 	5
10.	Silk and Honey Production	<ul style="list-style-type: none"> • Sericulture Types of silk, lifecycle, host plants and cultivation practises, silkworm rearing, disease & pest management of host plants and silkworms, post-cocoon activities • Apiculture Types of bees, beehive, apiary management, 	5

		seasonal management	
11.	Poultry and Pig Farming	<ul style="list-style-type: none"> • Poultry farming Management of layers and broilers – breeding, feeding, health care, housing, management, marketing, terminologies • Pig Farming Breeding, feeding, health care, housing, management, marketing, terminologies 	5
12.	Economics of agriculture and allied business	<ul style="list-style-type: none"> • Economics of a poultry farm • Economics of a dairy farm • Economics of a wheat crop • Institutions/Organisations involved in agriculture development – Educational, research, extension, financial 	5

II. Certificate in Rural Industries (490)

Sr. No.	Lesson Name	Sub Topics	Weightage (%)
1.	Basic Engineering Concepts	<ol style="list-style-type: none"> 1. Measurement 2. Work, Energy, Force 3. Simple Machines 4. Lubrication 5. Energy conservation 	10
2.	Fabrication	<ol style="list-style-type: none"> 1. Safety and standard housekeeping practices in Workshop. 2. Introduction to workshop tools. 3. Basic Material for workshop – MS, GI, SS etc 4. Manufacturing Process <ol style="list-style-type: none"> a. Welding b. Cutting c. Drilling d. Grinding 	10
3.	Plumbing	<ol style="list-style-type: none"> 1. Introduction to plumbing 2. To make a Layout for plumbing. 3. To do plumbing for toilet using appropriate tools. 4. Tile the toilet 5. Different bathroom fitting and tools required. 6. To make plumbing for soak pit and Septic tank 	05
4.	Ferro-cement	<ol style="list-style-type: none"> 1. To learn advantages of ferro cement. 2. Preparing different structures using ferro cement. 	05
5.	Engineering Drawing	<ol style="list-style-type: none"> 1. Learn basic engineering and drawing Symbols. 2. Learn to draw basic geometric shapes. 3. Concept of Plan and Elevation 4. Learn basics of orthographic and isometric view. 	10
6.	Project Planning	<ol style="list-style-type: none"> 1. Drawing Flow chart 2. Learn to scheduling of work and delivery time. 	10
7.	Agricultural Tools	<ol style="list-style-type: none"> 1. Learn operations of agri tools for cutting fodder, preparing land, sowing, weeding, harvesting etc. 2. Fabrication and repair of agri tools. 	10

8.	Carpentry	<ol style="list-style-type: none"> Types of wood Advantages and disadvantages of wood articles. Plywood Basic carpentry tools and its use. 	10
9.	Construction	<ol style="list-style-type: none"> Types of construction. Wall bearing & RCC Different types of brick laying methods Making mortar Use of measuring instruments viz spirit level, plumb bob, tape etc Drawing plinth Constructing small structure. 	10
10.	Bamboo	<ol style="list-style-type: none"> Advantages and disadvantages of bamboo. Types of bamboo Treating bamboo for long life. Use of bamboo in construction , furniture, decorative articles etc. 	10
11.	Costing and Accounts	<ol style="list-style-type: none"> Budgeting Cash flow Costing Profit & loss 	10

III. Certificate in Energy Services (491)

Sr. No.	Lesson Name	Sub-topics	Weightage (%)
1.	Renewable Energy Services- Biogas & Biomass Energy	<ol style="list-style-type: none"> Types of biogas and its functioning Feeding the biogas and maintaining biogas plant. 	10
2.	Renewable Energy Services – Solar Energy	<ol style="list-style-type: none"> Introduction to solar heating devices, their types and functioning. Maintenance and use of these devices. Viz. Box type cooker, parabolic cooker, solar heater Solar lighting system. Solar charging system. 	10

		Their installation and use.	
3.	Water Harvesting – Ground Water Resources	<ol style="list-style-type: none"> 1. Importance of ground waters and depleting ground water level. 2. Water conservation techniques – Drawing Contour, small check dam, farm tank, percolation tank 	10
4.	Electrical Services – Electrical Wiring	<ol style="list-style-type: none"> 1. Electric symbols, Safety and first aid 2. Electricity concept – Current, voltage, wattage, Ohms law 3. Use of electric instruments and tools – multimeter, tester, types of fitting 4. Simple wiring – Series & parallel, godown wiring, hospital wiring. 5. Earthing and its importance 6. Wiring types and fitting 	20
5.	Electrical Services – Electrical / Mechanical Alliances Repairing	<ol style="list-style-type: none"> 1. Preparing electric circuit board 2. Fitting of tube lights, fuse 3. Functioning and repair/maintenance of Fan and mixer, water heater etc. 	15
6.	Electrical Services – IC Engines, Pumps, motors & Inverters Repairing	<ol style="list-style-type: none"> 1. IC engines and its operation. 2. Installation of pump, types of pumps 3. Pump accessories - Priming and foot valve 4. Electric motor – Functioning, types of motors and uses, Types of starter and Installing starter 	15
7.	Waste Management	<ol style="list-style-type: none"> 1. Types of waste – biodegradable & non bio-gradable 2. Segregation of waste and its advantages 3. Waste to wealth conversion – 4. Bio waste – Composting , palleting 5. Non bio-degradable – Recycling 	10
8.	Survey	<ol style="list-style-type: none"> 1. Introduction to Maps and symbols 	10

	Techniques	<ol style="list-style-type: none"> 2. Introduction to survey instruments 3. Drawing map using plain table. Measuring plot or land. 4. Using dumpy level to measure elevation of a slop. 	
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IV. Certificate in Food Processing (492)

Sr. No.	Lesson Name	Sub Topics	Weightage (%)
1.	Food Fundamentals	<ol style="list-style-type: none"> 1. To plan a Balanced Meal 2. To collect own recipes and calculate costing of each recipe 3. To conduct a survey on food and water safety 	10
2.	Fruits & Vegetables Preservation – Preparation of Jam, Jelly & Marmalade	<ol style="list-style-type: none"> 1. To prepare Jam 2. To prepare Jelly 3. To prepare Marmalade 4. To calculate costing 	10
3.	Fruits & Vegetables Preservation – Preparation of Pickle & Candy	<ol style="list-style-type: none"> 1. To prepare Pickle 2. Preparation of fruit Candy 3. Preparation of nut brittles 4. To calculate costing 	10
4.	Fruits & Vegetables Preservation – Preparation of Tomato Sauce & Ketch-up	<ol style="list-style-type: none"> 1. To prepare Tomato Sauce 2. To prepare Ketch-up 3. To calculate costing 	10
5.	Fruits & Vegetables Preservation – Preparation of Syrup and	<ol style="list-style-type: none"> 1. To prepare Syrup 2. To prepare of Squash 3. To calculate costing 	10

	Squash		
6.	Dairy Processing – Preparation of Paneer	<ol style="list-style-type: none">1. To prepare Paneer from Milk2. To prepare Soya Paneer from Soya Milk3. To calculate costing	10
7.	Dairy Processing – Preparation of Khoa	<ol style="list-style-type: none">1. To prepare Khoa2. To prepare Sweets from Khoa3. To calculate costing	10
8.	Bakery & Confectionary – Preparation of Biscuit	<ol style="list-style-type: none">1. To prepare Biscuits2. To calculate costing of biscuits	10
9.	Bakery & Confectionary – Preparation of Bread	<ol style="list-style-type: none">1. To prepare Bread2. To prepare Toast3. To calculate costing	10
10.	Packaging	<ol style="list-style-type: none">1. To study basics of Packaging2. To select material for packaging3. To calculate cost of material for packaging	10

Annexure – II

Academic Calendar for ICT Applications

Serial No.	Lesson Name	Topic	Month	Online class duration(hrs)
	Orientation about certification programme			1 hr
Module -1 IT and Office Tools				
1.	Basic Concepts of Computer	Computer Fundamentals	Month 1	2 hrs
		Computer and its Component		
		Storage Devices		
		System Software and Applications		
		Programming Languages		
		Open Source Software		
		Operating System		
		Functions of OS		
		Types of OS		
		File System		
		Knowledge and application of OS		
		Computer Security		
Internal Assessment				
2.	Computer communications and Networking	Communication Fundamentals	Month 2	6 hrs
		Networking Fundamentals		
		Teleconferencing and Video Conferencing		
Internal Assessment				
3.	Internet and its usage	Internet and its Applications	Month 3	9 hrs
		Web Browsing		
4.	Internet Communications	E- mail		
		Instant Messaging		
Internal Assessment				

5.	Office Productivity Tools	Word Processing	Month 4	14 hrs
		Spread Sheet		
		Presentation Tool		
		Database Management		
Internal Assessment				
Module – 2 IT Applications				
6.	System Analysis & Design	System Introduction and Life Cycle	Month 5	9 hrs
		System Development Life Cycle		
		System Description Techniques		
		Data Flow Diagrams		
		Flow Chart		
		Decision Table & Decision Trees		
		System Development Methodology		
Internal Assessment				
7.	Php- MySQL Programming	PhP	Month 6	18 hrs
		MySQL		
Internal Assessment				
8.	HTML and Java Scripting	Project : Website Design & Development	Month 6	6 hrs
		Scenario based examples of Projects		
Internal Assessment				
Total			6 Months	72 hrs
Final Examination and evaluation			Month 7	

*All counselling will be in online mode and students will be facilitated content in the form of online text, video conferencing, Video, Chat, Presentation, Animations etc. Students may submit their internal assignment and test module conducted as per notification.

Academic Calendar for Rural Technology

CERTIFICATE IN AGRICULTURE & ANIMAL HUSBANDRY (489)				
Total duration: 6 months				
Lesson No.	Lesson Name	Topic	Month	Online Class of duration (hr)
1	Soil	○ Survey of Village/Town.	1	1
		○ Soil samples.		
		○ Determination of moisture content of soil sample		
		○ Physical and chemical properties of soil samples		
		○ Testing of soil samples for: ○ Physical property ○ Chemical property		
2	Farming Activity	○ Selection of field	2	1
		○ Selection of Crop		
		○ Packages and practices for crop cultivation		
3	Composting & Bio fertilizers	○ Composting	2	1
		○ Vermi-composting		
		○ Bio-fertilizers for crop production & Method of application		
4	Plant Propagation & Nursery Management	○ Different methods of propagation	3	1
		○ Rooting media, plant bio-regulators and instrument used in plant propagation.		
		○ Different types of nurseries, component of ideal nursery		
5	Protected Cultivation	○ Protected Structures for crop cultivation	3	1
		○ Poly houses for crop cultivation		
		○ Designs and classification of greenhouse		
		○ Green house structures		
		○ Crop cultivation in Green house		
6	Irrigation	○ Classification of water	4	1
		○ Critical stages of crops for irrigation		
		○ Irrigation requirements of crops		
		○ Different irrigation methods		
7	Crop Protection	○ Important insect- pests in different crops	4	1
		○ Economically important diseases in different crops		
		○ Integrated insect-pest management		
		○ Integrated plant diseases management		
		○ Major weeds and their management ○ Important plant parasitic nematodes		
8	Dairy Farming	○ Importance and scope of dairy farming, Terminologies, Breeds	5	1
		○ Management of dairy animals – Calf, heifer, dry, pregnant, lactating, bull		

		<ul style="list-style-type: none"> ○ Reproduction – oestrous cycle, heat detection, artificial insemination, gestation period, pregnancy diagnosis ○ Important diseases and their control – including metabolic and reproductive disorders ○ Housing – Types of housing, space requirements, cleanliness and hygiene, animal waste disposal ○ Milking management – milking methods, clean milk production 		
9	Feed & Fodder Management	<ul style="list-style-type: none"> ○ Important feeds and fodders – concentrate, fodder, unconventional feed, feed additives ○ Feeding of dairy animals – nutritional requirements, feeding methods ○ Conservation of fodder – Straw, hay, silage, urea molasses block ○ Formulation of ration, balanced ration 	5	1
10	Silk and Honey Production	<ul style="list-style-type: none"> ○ Sericulture – Types of silk, lifecycle, host plants and cultivation practises, silkworm rearing, disease & pest management of host plants and silkworms, post-cocoon activities (reeling, weaving etc.) ○ Apiculture – types of bees, hive 	5	1
11	Poultry and Pig Farming	<ul style="list-style-type: none"> ○ Management of layers and broilers – Terminologies, breeding, feeding, health care, housing, management, marketing ○ Management of pigs – terminologies, breeding, feeding, health care, housing, management, marketing 	6	1
12	Economics of agriculture and allied business	<ul style="list-style-type: none"> ○ Institutions/Organisations involved in agriculture development – Educational, research, extension, financial ○ Economics of a poultry farm ○ Economics of a dairy farm ○ Economics of a wheat crop 	6	1
Total				12 hr
CERTIFICATE IN RURAL INDUSTRIES (490)				
Total duration: 6 months				
Lesson No.	Lesson Name	Topic	Month	Online Class of duration (hr)
1	Basic Engineering Concepts	<ul style="list-style-type: none"> 1. Measurement. 2. Work, Energy, Force. 3. Simple Machines. 4. Lubrication. 	1	1

		5. Energy conservation.		
2	Fabrication	1. Safety and standard housekeeping practices in Workshop.	2	1
		2. Introduction to workshop tools.		
		3. Basic Materials for workshop – MS, GI, SS etc.		
		4. Manufacturing Process: a. Welding, b. Cutting, c. Drilling, d. Grinding.		
3	Plumbing	1. Introduction to plumbing.	3	1
		2. Layout for plumbing – how to make.		
		3. Plumbing for toilet using appropriate tools.		
		4. Tiling the toilet		
		5. Different bathroom fitting and tools required.		
		6. Plumbing for soak pit and Septic tank.		
4	Ferro-cement	1. Ferro cement and its advantages.	3	1
		2. Preparation of different structures using Ferro-cement.		
5	Engineering Drawing	1. Basic engineering and drawing symbols.	3	1
		2. Basic geometric shapes.		
		3. Plan and Elevation.		
		4. Basics of orthographic and isometric view.		
6	Project Planning	1. Flow charts – how to draw.	4	1
		2. Work scheduling and on time delivery.		
7	Agricultural Tools	1. Operations of agricultural tools - cutting fodder, preparing land, sowing, weeding, harvesting, and so on.	4	1
		2. Fabrication and repair of agricultural tools.		
8	Carpentry	1. Types of wood.	5	1
		2. Advantages and disadvantages of wooden articles.		
		3. Plywood.		
		4. Basic carpentry tools and its use.		
9	Construction	1. Types of construction.	5	1
		2. Wall bearing & RCC.		
		3. Different types of brick laying methods.		
		4. Making of mortar.		
		5. Use of measuring instruments, viz. spirit level, plumb bob, tape, and so on.		
		6. Plinth – how to draw.		
		7. Constructing small structure.		

10	Bamboo	1. Advantages and disadvantages of bamboo.	6	1
		2. Types of bamboo.		
		3. Bamboo Treatment for long life.		
		4. Use of bamboo in construction, furniture, decorative articles, and so on.		
11	Costing and Accounts	1. Budgeting.	6	1
		2. Cash flow.		
		3. Costing.		
		4. Profit & loss.		
Total				11

CERTIFICATE IN ENERGY SERVICES (491)

Total duration: 6 months

Lesson No.	Lesson Name	Topic	Month	Online Class of duration (hr)
1	Renewable Energy Services Biogas & Biomass Energy	1. Biogas plants – construction and functioning.	1	1
		2. Feeding and maintaining biogas plant.		
2	Renewable Energy Services – Solar Energy	1. Solar heating devices a. Types, b. Box type cooker – use, functioning and maintenance, c. Parabolic cooker – use, functioning and maintenance, d. Solar heater – use, functioning and maintenance.	2	1
		2. Solar lighting system – uses and installation techniques.		
		3. Solar charging system – uses and installation techniques.		
3	Water Harvesting – Ground Water Resources	1. Ground waters - its importance.	2	1
		2. Depleting ground water level – need for conservation.		
		3. Water conservation techniques – Drawing Contour, small check dam, farm tank, percolation tank.		
4	Electrical Services – Electrical Wiring	1. Electrical symbols.	3	1
		2. Safety and first aid.		
		3. Electricity concept – Current, voltage, wattage, Ohms law.		
		4. Use of electrical instruments and tools – multi-meter, neon-tester and types of fitting.		
		5. Simple wiring – Series & parallel, go-down		1

		wiring, hospital wiring.		
		6. Earthing and its importance.		
		7. Wiring types and fittings.		
5	Electrical Services – Electrical / Mechanical Alliances Repairing	1. Preparing electric circuit board. 2. Fitting of tube lights and fuses. 3. Functioning and repair / maintenance of fans, mixer-grinder, water heater, and so on.	4	1
6	Electrical Services – IC Engines, Pumps, motors & Inverters Repairing	1. IC engines and its operation. 2. Installation of pump, types of pumps. 3. Pump accessories - Priming and foot valve 4. Electric motor – Functioning, types of motors and uses, Types of starter and Installation of starters.	4	1 1
7	Waste Management	1. Types of waste – biodegradable & non biodegradable. 2. Segregation of waste and its advantages. 3. Waste to wealth conversion. 4. Bio waste – Composting and palleting. 5. Non bio-degradable – Recycling.	5	1
8	Survey Techniques	1. Introduction to Maps and symbols. 2. Introduction to survey instruments. 3. Drawing map using plain table and measurement of plot or land. 4. Using dumpy level to measure elevation of a slop.	6	1
Total				10

CERTIFICATE IN FOOD PROCESSING (492)

Total duration: 6 months

Lesson No.	Lesson Name	Topic	Month	Online Class of duration (hr)
1	Food Fundamentals	1. Balanced Meal 2. Costing of various recipe 3. Food and water safety	1	1
2	Fruits & Vegetables Preservation – Preparation of Jam, Jelly & Marmalade	1. Fruits and vegetable preservation techniques 2. Preparation of Jam 3. Preparation of Jelly 4. Preparation of Marmalade 5. Costing of fruits and vegetable preservation 6. To calculate nutrient value of Jam, Jelly	2	1 1

		and marmalade		
3	Fruits & Vegetables Preservation – Preparation of Pickle & Candy	1. Preparation of Pickle		1
		2. Preparation of fruit Candy		
		3. Preparation of nut brittles		
		4. Costing of pickle and candy preparation		
		5. Nutrient value of pickle and candy		
4	Fruits & Vegetables Preservation – Preparation of Tomato Sauce & Ketch-up	1. Preparation of Tomato Sauce		1
		2. Preparation of Ketch-up		
		3. Costing of sauce and ketch-up making		
		4. Nutrient value of sauce and ketch-up		
5	Fruits & Vegetables Preservation – Preparation of Syrup and Squash	1. Preparation of Syrup	3	1
		2. Preparation of Squash		
		3. Costing of syrup and squash making		
		4. Nutrient value of syrup and squash		
6	Dairy Processing – Preparation of Paneer	1. Preparation of Paneer from Milk		1
		2. Preparation of Soya Paneer from Soya Milk		
		3. Costing of paneer making		
		4. Nutrient value of paneer		
7	Dairy Processing – Preparation of Khoa	1. Preparation of Khoa	4	1
		2. Preparation of Sweets from Khoa		
		3. Costing of khoa and sweets making		
		4. Nutrient value of khoa and sweets		
8	Bakery & Confectionary – Preparation of Biscuit	1. Preparation of Biscuits		1
		2. Costing of biscuits		
9	Bakery & Confectionary – Preparation of Bread	1. Preparation of Bread	5	1
		2. Preparation of Toast		
		3. Costing of bread and toast		
10	Packaging	1. Basics of Packaging	6	1
		2. Selection of material for packaging		
		3. Costing of materials used in packaging		
Total				11

*All counselling will be in online mode and students will be facilitated content in the form of online text, video conferencing, Video, Chat, Presentation, Animations etc. Students may submit their internal assignment and test module conducted as per notification by the counselor and the course coordinator.
