SKILL FOR SUCCESS (SFS)

SKILL REGISTRY
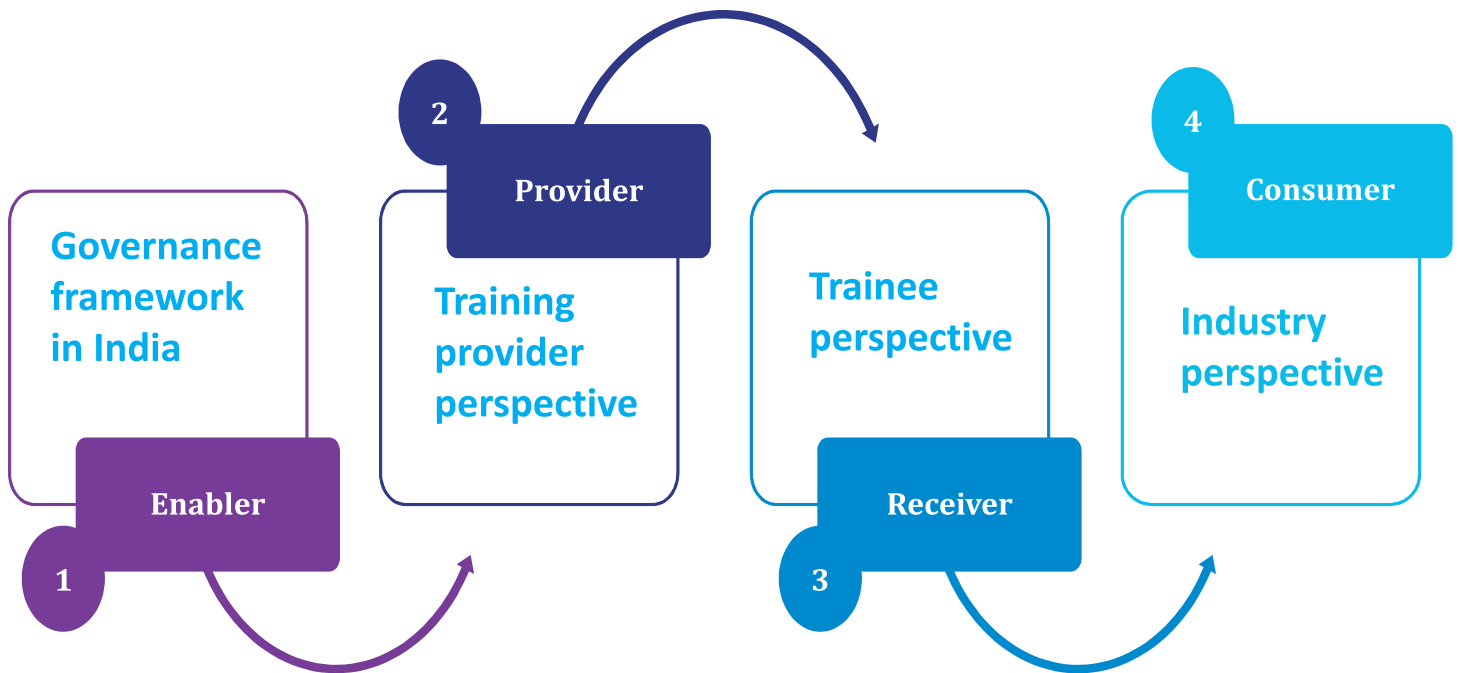
Centurion UNIVERSITY

Shaping Lives...
Empowering Communities!
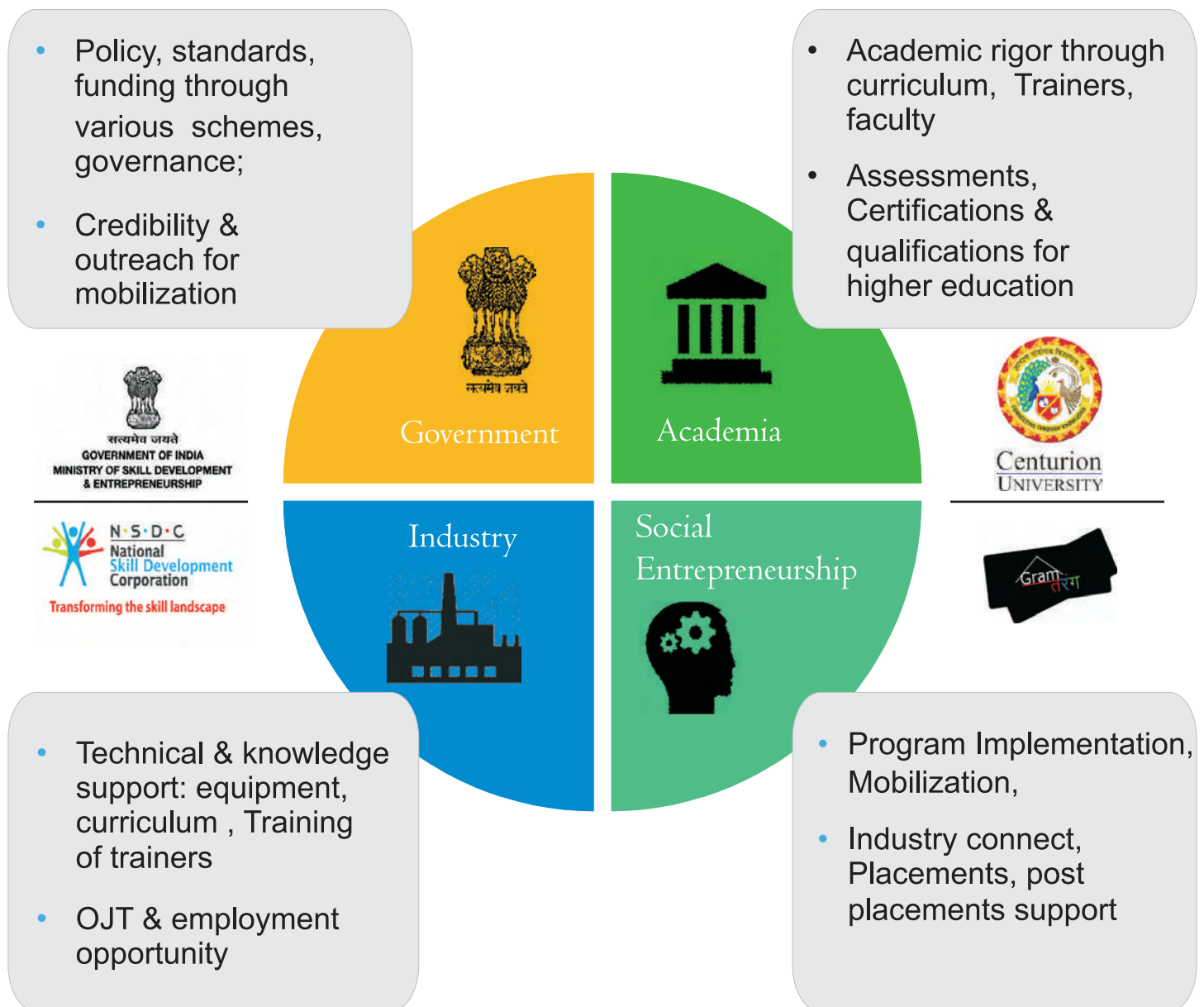
State enacted University with NAAC 'A' Grade
27-Aug-2010

First Educational Institute to secure SGSY project in 2010; First NSDC partner

Odisha's first Skills University
30-Aug-2017

NSDC, FICCI awards, recognitions, UN citations & Skills University status

MSDE's Awarding body for Short Term skilling
27-Nov-2018

Empaneled by different states for skill assessments & certifications

Enacted in 2010, CUTM was declared to be Odisha's first & only Skills University in 2017; Declared MSDE's first Center of Excellence and Awarding Body

1 **Enabler**

Governance framework in India

2 **Provider**

Training provider perspective

3 **Receiver**

Trainee perspective

4 **Consumer**

Industry perspective

- Policy, standards, funding through various schemes, governance;
- Credibility & outreach for mobilization

- Academic rigor through curriculum, Trainers, faculty
- Assessments, Certifications & qualifications for higher education

Government

Academia

Industry

Social Entrepreneurship

- Technical & knowledge support: equipment, curriculum , Training of trainers
- OJT & employment opportunity

- Program Implementation, Mobilization,
- Industry connect, Placements, post placements support

An integrated ecosystem focused on building competencies & skills

Building best in class training infrastructure

CENTURION UNIVERSITY OF TECHNOLOGY & MANAGEMENT

Accredited 'A' Grade By NAAC

MSDC LUDHIANA

Keonjhar SDC

Coimbatore

GTET Guwahati center

SKILL FOR SUCCESS

Article 21A of the Constitution of India enshrines both free and compulsory education for children aged 6 to 14 years. The various policies of Government of Odisha including its mid-day meal scheme is endeavouring hard to ensure the Right to education. The **National Education Policy 2020** has also provided a comprehensive roadmap, integrating vocational education into Secondary and Higher Education, while also identifying pathways for transforming the structures of governance. This education aims to makes students ready for skill integrated higher education thus making them more responsive to the market needs.

Centurion University of Technology and Management (CUTM) always strive for excellence in all domains. The out turn of the same is manifested in how quality is assured which exhibits itself to strong orientation towards several criteria. One of such endeavor of the University is Skill for Success (SFS) which is inculcated in the academic spirit of the University. SFS efforts of the University empowers a student to choose any skill area off the 110 (new being added) irrespective of field of studies. For example, students of Bachelors in Science have mastered art and science of welding, students of engineering have mastered arts like painting, bakery and so on. The SFS courses enables confidence among students to harness their inner potential and excel up to echelons. Another advantage of SFS is its curricula prepares the students for **International Skill Olympic** otherwise called **World Skill Competition.**

SFS efforts of the University are the gold standard of skills excellence. They inspire young competitors to reach new heights, helping them turn their passion into a profession. Through the world skill endeavour, it brings together young people, industry, government, education, and institutions, to promote the benefits of and need for skilled trade professionals.

CONTENT

Sl. No.	Course Code	Course Title
44.	CUTM3081	Organic Farming
45.	CUTM3082	Mushroom Farming
46.	CUTM3083	Hydroponics Technology
47.	CUTM3084	Poultry Farming
48.	CUTM3085	Dairy Farming
49.	CUTM3086	Vermicomposting Farming
50.	CUTM3087	Transformer Manufacturing, Repairing and Maintenance
51.	CUTM3089	Electrical Installation
52.	CUTM3090	Repair and Maintenance of Home Appliances
53.	CUTM3091	Refrigeration and Air Conditioning
54.	CUTM3092	Super Critical Co2 Plant Operation
55.	CUTM3095	Business Plan Preparation
56.	CUTM3098	Composite Fabrication Practice
57.	CUTM3100	Farm Appliances Operation
58.	CUTM3102	Solid Waste Management
59.	CUTM3103	Bio Fertilisers Preparation
60.	CUTM3104	PCB Designing & Fabrication
61.	CUTM3105	Introduction to Block Chain Technology
62.	CUTM3106	Introduction to Nutraceuticals
63.	CUTM3108	Introduction to Computational Biology
64.	CUTM3109	Product Life Cycle Management through Gate process
65.	CUTM3110	New Material Development with Biovia
66.	CUTM3111	Spectral Image Processing Using Python
67.	CUTM3112	Satellite Data Processing
68.	CUTM3113	Working with Graphene and carbon fibre
69.	CUTM3114	Adobe Tools and Illustrations
70.	CUTM3115	Digital Painting
71.	CUTM3120	Computer Installation and Maintenance
72.	CUTM3121	3D Game Art
73.	CUTM3122	Drug Design using Biovia Discovery Studio
74.	CUTM3123	Opthalmic Lens and Spectacle Manufacturing Techniques
75.	CUTM3124	Medical Diagnostic Techniques
76.	CUTM3125	Introduction to Aquaponics
77.	CUTM3126	Polyhouse Automation
78.	CUTM3127	Development of Processor (Shakti)
79.	CUTM3128	Spectroscopy
80.	CUTM3129	Extraction Technologies
81.	CUTM3130	Gamified DIY Kits Using Lasers
82.	CUTM3131	VR Assets Development
83.	CUTM3134	GIS and Remote Sensing: Application Development
84.	CUTM3142	Brew Master

Note: These Skill courses are offered to vocationalise UG and PG level by integrating domain based learning in every programmes offered by University There is provision for vertical mobility of skill level based on the demand
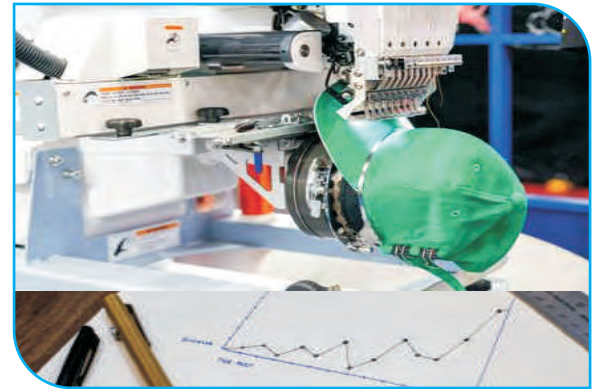
CUTM3029 Apparel Production & Marketing

Course Description:

This is a skill-oriented course to provide hands-on practice and knowledge on Apparel production and also its marketing. Demonstrate effective leadership, teamwork, and communication skills are also given importance in this course.

Learning Outcomes:

After completing this program-

- Understanding the buyer requirement, and communicating them to the specific departments and exhibiting the product to the buyers.

- Confirming the quality during production as well as ensuring timely delivery of an order.

- Developing a time and action (TNA) calendar for completing the schedules of various activities like cutting, sewing, finishing, dispatch etc. The WIP (work in progress) and the status of the order have to be monitored by the merchandisers regularly.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Apparel Made-Ups & Home Furnishing Sector Skill Council
Duration	4 months
Occupations	Production Supervisor Sewing
Entry Qualification	12 th Pass
Minimum Age	16 Years
Aligned to (QP)	TR-AMH-Q2101-production_Supervisor_Sewing.pdf

- Coordinating and tracking the sourcing activities and confirming that all the raw materials and accessories are delivered on time.

- Ascertaining the difficulties related to production and supply of order and dealing with it when they occur.

Progression Pathways:

- Coordinating and tracking the sourcing activities and confirming that all the raw materials and accessories are delivered on time.

- Understand the organization and structure of the global textile/apparel complex.

- Demonstrate effective leadership, teamwork, and communication skills.

- Understand the essential decision-making, production, and creative processes involved in the conversion of materials to finished textile/apparel products.

Industry Participation:

- KG Mills, Coimbatore

- K. Mohan Garment Manufacturing, Banglore

Expert Participation:

Mr. D. Nagraju, Mr. Krishnakanth Padhy

CUTM3030 Line Stitching Supervisor

Course Description:

In the apparel industry the work is specified and distributed in different sections. Each section is allotted with a team to work similar type of tasks. The team members need to fulfil the individual target and as well as the teams target as per the quantity and quality allotted by the production department. To supervise the progress of work on an hourly basis for each of the allotted teammate and the group as whole, a line stitching supervisor is needed.

Learning Outcomes:

- Supervising the process to ensure productivity, quality and delivery of products.
- Make pattern as per the custom design & specification.
- Stitching various garments with suitable various seam & stitches.
- Comply with the safety procedures and standards to be followed

Scheme	Skill for Success (SFS)
NSQF Level	4
Duration	4 months
Sector	Apparel Made-Ups & Home Furnishing Sector Skill Council
Occupations	Production Supervisor Sewing
Entry Qualification	12th Pass
Minimum Age	18 Years
Aligned to (QP)	https://www.nqr.gov.in/sites/default/files/QP-Line%20Supervisor%20Stitching.pdf

Progression Pathways:

- Integration about machines & their uses in garment industry.
- Identify the processes of stitching, line balancing and process setting.
- Analyze & articulate pattern, fabric cutting &sewing operation process of selected garment.
- Recommended suitable functional stitch & seam construction for selected fabric types & garment style.
- Understand about work area maintenance health & safety in garment industry.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- KG Mills, Coimbatore
- K. Mohan Garment Manufacturing. Banglore

Expert Participation:

Mr. D. Nagraju and, Mr. Krishnakanth Padhy

CUTM3031 Apparel Production

Course Description:

In the apparel industry the work is specified and distributed in different sections. Each section is allotted with a team to work similar type of tasks. The team members need to fulfil the individual target and the teams target also as per the quantity and quality allotted by the production department. To supervise the progress of work on an hourly basis for each of the allotted teammate and the group as whole a line stitching supervisor is needed.

Learning Outcomes:

- Become aware of the industrial process of mass production of clothing.
- Understand the importance of researcher, designer and merchandiser in the production of ready-to-wear garments.
- Be able to understand how quality and cost of production are balanced.
- Become aware of preparatory steps, production processes and post-production operations of the apparel industry.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Apparel Made-Ups & Home Furnishing Sector Skill Council
Duration	4 months
Occupations	Sewing Machine Operator
Entry Qualification	10th Pass
Minimum Age	18 Years
Aligned to (QP)	TR-AMH-Q0301-Sewing_Machine_Operator.pdf

Progression Pathways:

- To provide a comprehensive overview of the production process of garment manufacturing.
- To understand the technique of mass production of ready-to-wear apparel and evaluation of their quality.
- Develop the understanding of the relationship of cost to quality of readymade Garments.
- To understand the various assembly line options in garment manufacturing units.

Industry Participation

- KG Mills, Coimbatore
- K. Mohan Garment Manufacturing, Banglore

Expert Participation:

Mr. D. Nagraju, Mr. Krishnakanth Padhy

CUTM3032 Light Motor Vehicle Driving

Course Description:

Driving is an essential skill for all individuals nowadays. Acquiring driving skills from a professional training school is important aspect of safety to individuals, vehicle and travellers on road. Preventive maintenance of the vehicle is another skill that can not be ignored. Brushing up the knowledge of traffic rules, insurance aspects is also an aspect covered in the professional training center.

Learning Outcomes:

After completing this programme-
- It is applicable in both your personal and professional lives.
- To drive Light Motor Vehicle safely & efficiently on public & private roads, following all Rule and regulations in force & giving no room for accidents that causing damage to other road users, public & private properties, passengers and goods being carried.
- Drive vehicle following Traffic Regulations and maintenance of good road conduct

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Automotive Skill Development Council(ASDC)
Duration	4 months
Occupations	LMV Driver
Entry Qualification	Any Qualification
Minimum Age	18
Aligned to (QP)	ASC/Q9702

- Can be self-employed
- Plan & perform basic driving skills and improve the knowledge of traffic rules and regulations.
- Carry out the general servicing of vehicle components.

Progression Pathways:

- This course was designed to be the ultimate boot camp for anyone who wants to master in driving skill.
- Driving Training in LMV of unemployed Youths who intend to be professional drivers.
- Driving skills can include strong knowledge of traffic laws, maintenance knowledge and problem-solving skills.
- An overall idea of a testing Diesel Engine, its parts and check functionality it helps to the person improve the technical skill.

Industry Participation

- Tata Motors
- Hyundai Motor Corp

Expert Participation:

Mr. T. Dillu, Mr. Sunil Panda

CUTM3033 Forklift Operation

Course Description:

Nowadays warehouses are using more and more material handling equipment. Getting the proper knowledge about the material handling equipment and its operation is a vital aspect for effective utilization of it. Although the forklift is a versatile and robust machine, its operation as per the standard operating procedure is essential. The preventive maintenance and breakdown maintenance knowledge can reduce the laydown period to a considerable extent.

Learning Outcomes:

After completing this programme-

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Automotive Sector Skill Development Council (ASDC)
Duration	4 months
Occupations	Driving
Entry Qualification	Any Qualification
Minimum Age	16 Years
Aligned to (QP)	ASC/Q9707

- It is applicable in both your personal and professional lives.
- Can be self-employed.
- Carry out the general servicing of the forklift.
- Provide the best service to customers.

Progression Pathways:

- This course was designed to be the ultimate boot camp for anyone who wants to master in forklift maintenance skills.
- Ensure that forklift is fit for use
- Ensure safe and healthy working practices
- Load and Unload Materials safety
- Meet the customer demand as per the requirement
- Carry out the work effectively at the workplace
- Driving skills can include strong knowledge of maintenance knowledge and problem-solving skills.

Industry Participation:

- Godrej Material Handling
- Big Basket

Expert Participation:

Mr Nimai Chandra Giri, Mr Rabi Sahu

CUTM3034 Heavy Vehicle Technology

Course Description:

The automotive industry and use of heavy vehicles in the transport industry is on the rise past last two decades. So the employment opportunities in this segment are also on the rise. But getting an employment opportunity in this sector requires the trade's skills, knowledge, and practices. This necessitates the development of a course that can give proper guidance and skills to explore emerging opportunities.

Learning Outcomes:

After completing this program

- It is applicable in both your personal and professional lives.
- Can be self-employed.
- Explain personnel finance entrepreneurship and manage/organize related tasks in day-to-day work. for personal & societal growth.

Scheme	Skill for Success (SFS)
NSQF Level	5
Sector	Automotive
Duration	4 Months
Occupations	Mechanic,Automobile
Entry Qualification	ITI/Diploma/B. Tech
Minimum Age	16 Years
Aligned to (QP)	Heavy%20Vehicle%20Technology.docx

- Overhaul, service and practical test exercise of Diesel Engine, its parts and check functionality.
- Evaluate the information gathered from the customer report/job card /technician notes.
- Warranty claim and maintenance details and take appropriate action to ensure maximum customer.

Progression Pathways:

- Can join any heavy vehicle dealership as Ast. Service Technician
- Can become an entrepreneur in the related field
- Can do Diploma or any Advance program in the same
- Can become a Sales and Service advisor.

Industry Participation:

- Ashok Leyland
- Pollutech Engineering(Volvo)
- Sany Heavy Industry

Expert Participation:

Mr Abhishek Bariyar, Trainer Automobile, SoVET, BBSR

CUTM3035 Two Wheeler Service Technology

Course Description:

This is a skill-oriented course to provide hands-on practice and project work in the study of Two Wheeler Service Technology. Automotive technology is emerging as a potential sector for employment. Technicians in this sector need to be trained about the standard operating procedures of the two-wheelers; it's Parts with a working mechanism.

Learning Outcomes:

After completing this programme-

- The Trainee Will be able to Evaluate the information gathered from the customer report/job card /technician notes
- The Trainee Will be able to Understand the warranty claim and maintenance details and
- to take appropriate action to ensure Maximum Customer.
- The Trainee Will be able to understand each individual part's working mechanism.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Automotive Skill Development Council(ASDC)
Duration	4 months
Occupations	Two Wheeler Service Technician
Entry Qualification	10th Pass
Minimum Age	16 Years
Aligned to (QP)	QP_ASC-Q1411_Automotive-Service-Technician -(Two-and-Three-Wheelers).pdf

Progression Pathways:

- Can be Able to find out the problems using fault diagnosis method or by the scan tool.
- Can be able to guide the technicians for standard operating procedures to resolve the fault.
- Can be an Entrepreneur in the related field.

Industry Participation:

- Yamaha

Expert Participation:

T. Dillu, Two wheeler service trainer

CUTM3036 Four Wheeler Service Technology

Course Description:

Automotive industry is in high demand past two decades. The technology and models are very dynamic and improvising every year. Keeping an update on the newer technologies is of essential interest to automotive enthusiasts. Making a profession in this sector is also a good option for people who are looking for jobs.

Learning Outcomes:

- It is applicable in both your personal and professional lives.
- Can be self-employed
- Explain personnel finance entrepreneurship and manage/organize related tasks in day-to-day work for personal & societal growth.
- Overhaul, service and practical exercise of Diesel Engine testing, its parts and check functionality.

Scheme	Skill for Success (SFS)
NSQF Level	2
Sector	Automotive
Duration	4 Months
Occupations	Service Mechanic/ Motor Mechanic Assistant
Entry Qualification	ITI/Diploma/B. Tech
Minimum Age	16 Years
Aligned to (QP)	Four%20wheeler%20Service%20Technology.docx

- Evaluate the information gathered from the customer report/job card /technician notes
- Warranty claim and maintenance details and take appropriate action to ensure maximum customer

Career Pathways:

- Can join any Automobile industry or can join any automobile dealership as service Mechanic.
- Can become an entrepreneur in the related field
- Can do Diploma or any Advance program in the same
- Can become a Sales and Service advisor.

Industry Participation:

- AdityaHyundai ,Bhubaneswar
- Skyy Rider Electric, CUTM

Expert Participation:

Mr Abhishek Bariyar, Trainer Automobile, SoVET, BBSR

CUTM3037 E-Vehicle Assembly and Service Technology

Course Description:

This is a skill-oriented course to provide hands-on practice and project work in the study of E-Vehicle assembly and Design. It provides the real approach to make you market-ready for providing services to E-Vehicle Industries. This course provides enough knowledge to set up your won E-Vehicle industries after taking this course. This course deal with all mathematical studies about Battery Selection, Motor Selection, Drive system, ECU and MCU design, ensor Communication System.
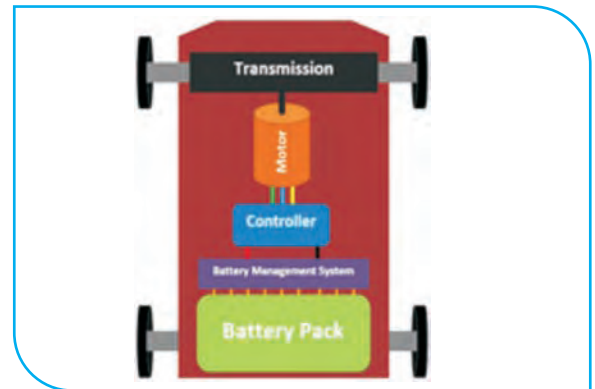
Learning Outcomes:

After completing this programme-

- The trainee will able to design low cost led which
- It will create a high-level skill to design an Electric Vehicle.
- The Learner can design a full-scale Power train and be able to do the Troubleshoot.

Scheme	Skill for Success (SFS)
NSQF Level	5
Sector	Skill Council for Green Jobs (SCGJ)
Duration	4 months
Occupations	Design and Installation
Entry Qualification	ITI/Diploma/B. Tech/Applied Science/ Agriculture/BBA
Minimum Age	16 Years
Aligned to (QP)	https://nsdcindia.org/sites/default/files /ASC_Q1424_v1.0_Electric_Vehicle_Service_ Lead_Technician_4_5_2021.pdf

- The Learner can also be able to know all the GATE processes required to design a full-scale EV
- It can increase the Learner's skill so he/she can set up his own EV Center.

Progression Pathways:

- Can become an entrepreneur in the related field
- Can do Diploma or any Advance program in the same
- Can become a Quality Assurance person in House wiring installation after gaining experience.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct the assessment NOS wise, and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both, while the skill test shall be hands-on practical.

Industry Participation:

- Gram Tarang, Odisha
- Sky Rider, Odisha

Expert Resource Person:

Dr. Sudhansu Kumar Samal, Associate Professor and HOD, CUTM Odisha, India

CUTM3039 CNC Machinist

Course Description:

This is a skill-oriented course to provide hands-on practice on CNC machinists. CNC Produces machined parts by programming, setting up, and operating a computer numerical control (CNC) machine maintaining quality and safety standards. This course will be helpful for maintaining equipment and supplies.

Learning Outcomes:

After completing this programme-

- The Trainee will be able to explain the applications and advantages of CNC machines and technology.
- The Trainee will be able to Demonstrate and explain various CNC control Calculate technical data for CNC machining.
- The Trainee Will be able to Prepare programs, demonstrate, simulate and operate CNC lathe and milling machines for various machining operations.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for Green Jobs (SCGJ)
Duration	4 months
Occupations	Machinist
Entry Qualification	12th or ITI or Diploma
Minimum Age	16 Years
Aligned to (QP)	CSC_Q0116_CNC_Operator_Vertical_Machining_Centre_1_02.07.2018.pdf

Progression Pathways:

- Can Practice simple object manufacturing on CNC turning centers that meet the part specification.
- Can Practice simple manufacturing objects on CNC machining centers that meet the part specification.
- Can Prepare parts with complex operations, including tapping, countersinking, counterboring, and threading.
- Can Join Industry as a CNC Machinist.

Industry Participation:

- Radheya Machining.
- RSB Global Transmission
- HAL

Expert Participation:

Prof. Sudeep Singh and Prof. Santosh Patro

CUTM3040 CNC Programming

Course Description:

This is a skill-oriented course to provide hands-on practice on CNC machinists. Computer Numerically Controlled (CNC) Programmers operate factory machines that turn raw materials into functional objects. They are responsible for reading and interpreting design blueprints, programming the CNC machine, and adjusting the machine settings until the desired specifications are met.

Learning Outcomes:

After completing this program;

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for Green Jobs (SCGJ)
Duration	4 months
Occupations	Design
Entry Qualification	12th or ITI or Diploma
Minimum Age	16 Years
Aligned to (QP)	MC_CSC-Q0401_CNC-Programmer-.pdf

- The trainee will have the capability to operate a CNC machine and produce a completed product as per the work order or approved drawings, meeting all required quality standards and scrap standards –consistent and repetitive output is the goal.

- The trainee will also be expected to be meeting efficiency standards at this point, assuming the employee is producing regular production.

- The trainee will learn to use the CNC machines efficiently for manufacturing desired products and knowledge of programming and use of CNC tooling.

Progression Pathways;

- Can Join the Industry as CNC programmer.
- Can Carry out Preparations for Programming CNC machines for production.
- Can Carry out programming for CNC.
- Can do programme the machine for specific tool operations.

Industry Participation:

- Radheya Machining.
- RSB Global Transmission
- HAL

Expert Participation:

Prof. Sudeep Singh, Prof. Santosh Patro

CUTM3041 Design Supervising of Wooden and Modular Furniture

Course Description:

Working in wood to create high-quality furniture and units, showing skill and an aesthetic understanding of design and finish. The course covers the manufacture of free-standing and built-in furniture and units, using wood as the sole or primary material. It may include the design of furniture but comprises typically the creation of furniture and units from designs prepared by others. A design supervisor creates interior and furniture designs.

Learning Outcomes:

After completing this programme-

- The trainee will get general knowledge& manufacturing logic in wood science and engineering.
- The trainee will be trained with multiple skillsets under the domain of woodwork like Solid wood, Assembly, Panels, Modular Furniture Design.

Scheme	Skill for Success (SFS)
NSQF Level	5
Sector	Furniture & Fittings
Duration	4 months
Occupations	Design- Wooden/Modular furniture
Entry Qualification	10th Pass- Minimum
Minimum Age	18 Years
Aligned to (QP)	https://nsdcindia.org/sites/default/files/FFSQ0108_Design_Supervisor_v1_11_09_2019.pdf

- The trainee will prepare students to supervise various machining operations in any woodworking industry.

Progression Pathways:

- May find employment with or through architectural practices, consultancy practices, furniture manufacturing companies, retailers.
- Can join the industry as a production supervisor/assistant, furniture quality controller, & marketing associate.
- Can become an entrepreneur in the related field

Assessment Process:

- The assessment agencies should have an expert to conduct the assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both, while the skill test shall be hands-on practical.

Industry Participation:

- Felder Group India, Maharastra,
- Godrej Interio,
- Oriply, Bhubaneswar

Expert Participation:

Sri Dillip Mohanta, Assistant Professor, CUTM Odisha, India

CUTM3043 3D Modelling and Printing

Course Description:

3D Modeling is the process of developing a mathematical coordinate based representation of any surface of an object in three dimensions via specialized software by manipulating edges, vertices and polygons in a simulated 3D space. 3D Printing also known as additive manufacturing is a method of creating a three dimensional object layer-by-layer using a computer created design.
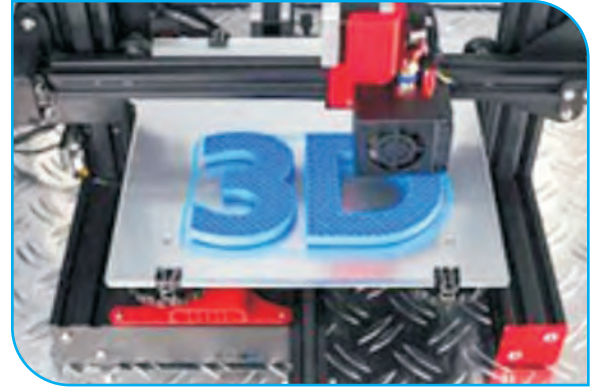
Learning Outcomes:

After completing this programme-

- Students will be able to exercise their projects from the model stage to actual creation of the model.
- 3D printers are pre-assembled and plug and play, it is a fun cutting-edge technology for students to learn.
- An affordable 3D printer opens up unlimited learning opportunities for students
- Promotes problem-solving skills-The 3D printer provide a variety of learning experience for students.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for Green Jobs (SCGJ)
Duration	4 months
Occupations	Design and Manufacturing
Entry Qualification	ITI/Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	..\Desktop\3D Modelling and Printing.pdf

Progression Pathways:

- Can join industry as a role of Design and Manufacture engineer.
- Can become entrepreneur in the related field
- Can do Diploma or any advance program in the same
- Can become a Quality Assurance person in additive manufacturer after gaining experience

Learning Record:

Assessment Process:

Industry Participation:

Aerospace, Automotive, Consumer Products, Energy, Infrastructure, Medical & Pharmaceutical.

Expert Participation:

Sri Mukundjee Pandey, Assistant Professor, Mech/Aero, Simulia, CUTM Odisha, India

Sri Jagannath Reddy, GTM, System engineering.

Sri Laxmidhar Reddy, GTM, Catia.

CUTM3045 Precast Concrete Manufacturing

Course Description:

This is a skill-oriented course to provide hands-on practice and Project works in the study of Precast Concrete Manufacturing, Its Material, Its equipment, Designing and Test Of Concrete Blocks Such As Compressive Test, Crushing Test, Abbrassive Strength etc.

Learning Outcomes:

After completing this programme-

- The Trainee will get Knowledge on the advantages of precast concrete blocks.
- The Trainee will get Knowledge on the manufacturing of precast concrete blocks.
- The Trainee will get Knowledge on green concrete.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Construction Sector Skill Council (CSSC)
Duration	4 months
Occupations	Masonary
Entry Qualification	Any qualification
Minimum Age	16 Years
Aligned to (QP)	CON/Q0105

Progression Pathways:

- Can manufacture the precast concrete blocks.
- Can Design and develop a landscape.
- Can be employed in Construction Work.
- Can join the Industry of Concrete Manufacturing.

Industry Participation:

- Godrej Infrastructure
- Navayuga Construcion Limited

Expert Participation:

Mr Chitta Ranjan Diggal

Mr Laxmikant Mallick

CUTM3046 Fabrication

Course Description:

This is a skill-oriented course to provide hands-on practice and project work in the towards welding practice, machines and equipment such as rectifier set, transfer set, torch, electrode, safety and holding appliances.

Learning Outcomes:

After completing this programme-

- The trainee will be exposed to welding technologies of various kinds.
- The trainee will be able to weld in different positions.
- The trainee will weld in different methods.
- The trainee will post-process welded joints.

Progression Pathways:

- Can join the industry as a helper welder and will progress further as a welder than to a supervisor.
- Can become an entrepreneur in the related field
- Can become a Quality Assurance person in welding after gaining experience

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	CONSTRUCTION
Duration	4 months
Occupations	Fabrication
Entry Qualification	10th pass
Minimum Age	18 Years
Aligned to (QP)	CSC_Q0204_MMAW_SMAW_welder_1_02.07.2018.pdf

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies will assess every trainee and they should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both, while the skill test shall be hands-on practical.

Industry Participation:

- Odisha Diesel, Odisha

Expert Participation:

Prof. Sudeep Kumar Singh, Assistant Professor, Mechanical Engineering, CUTM Odisha, India

CUTM3047 Hi-Tech Surveying

Course Description:

This is a skill-oriented course to provide hands-on practice and project work in the study of modern surveying. It is intended to change in the manual survey techniques and a holistic approach to encompass both plane table and Hi-tech survey cognitive skills for any surveyor. To bridge the gap between the available revenue cadastral map and in-situ reality incorporating human error, modern map-making with small-scaled maps like 1:2000 or 1:5000 has become evident by employing innovative advanced techniques like the use of ETS, UAV, GNSS, GPS, and LIDAR etc.

Learning Outcomes:

After completing this program-

- Students will gain knowledge of basic concepts of modern Surveying.
- Students will gain knowledge of applications of different surveying instruments like ETS, GPS, DGPS and GPR.

Scheme	Skill for Success (SFS)
NSQF Level	4
Duration	4 Months
Sector	Skill Council for Green Jobs (SCGJ)
Occupations	Hi-Tech Surveying
Entry Qualification	Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	QP - Surveyor.pdf (csdcindia.org)

Progression Pathways:

- Can join the industry as a surveyor/license surveyor approved by Odisha Govt.
- Can do higher study in the same discipline

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct an assessment, and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- Mr. Anjana Mallik, Director, Raj Subha Tech Solution

Expert Participation:

Dr. Prafulla K Panda, Associate Professor, HOD, Dept. of Civil Engineering, PKD campus

CUTM3048 Internet of Things

Course Description:

- Able to understand the application areas of IOT ·
- Able to realize the revolution of the Internet in Mobile Devices, Cloud & Sensor Networks ·
- Able to understand the building blocks of the Internet of Things and its characteristics.
- At the end of the program, students will be able to understand how to develop and implement their own IoT technologies, solutions, and applications.

Learning Outcomes:

After completing this program the learner will be

- Able to identify the components that forms part of IoT Architecture.
- Able to setup the connections between the Devices and Sensors.
- Able to analyse the communication protocols for IoT.

Scheme	Skill for Success (SFS)
NSQF Level	6
Sector	IT-ITeS Sector Skills Council
Duration	4 Months
Occupations	Embedded Software Engineer
Entry Qualification	Diploma/B.E./B.Techin All streams
Minimum Age	18 Years
Aligned to QP	https://pursuite-production.s3.amazonaws.com/media/qp_attachments/IT-ITeS_Q8210_IoT_Domain_Specialist.pdf

Progression Pathways:

- Can join in IoT jobs
- Can join in Network and the Networking Structure jobs
- Can make a career in internet security

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct an assessment, and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Expert Participation:

N. Jeevarantam

CUTM3049 Mechatronics System Design

Course Description:

This is a skill oriented course to provide hands-on practice and project work where a trainee will be able to fit and assemble parts and sub-assemblies, manufacture, install, modify, repair and fault-find hydraulic and pneumatic equipment and electronic control systems, Inspect machinery and make repairs. The learner is responsible for setting up and adjusting machines and equipment, operating machines to produce parts and components etc.
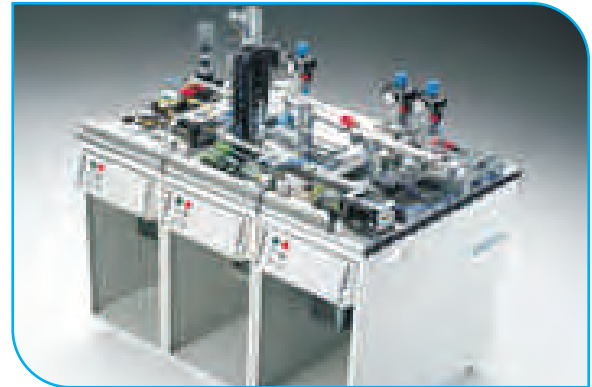
Learning Outcomes:

After completing this programme-

- The trainee will be exposed to identifying of key elements of the Mechatronics system and its representation in terms of block diagram or circuitry.

Scheme	Skill for Success (SFS)
NSQF Level	5
Sector	Capital Goods & Manufacturing
Duration	4 months
Occupations	Design, Installation and Maintenance
Entry Qualification	ITI/Diploma/B. Tech/Applied Science
Minimum Age	16 Years
Aligned to (QP)	QF_Technician%20Mechatronics_CTS1.2_NSQF-5-converted.pdf

- The trainee will able to develop an understanding of the concept of signal processing and use of interfacing systems such as the Pneumatics system and PLC control.

- The trainee will be an expert in Interfacing Sensors and Actuators using an appropriate controller.

- The trainee will develop PLC ladder programming and implementation of real life system to meet desired outcomes.

Progression Pathways:

- Can join the industry as Automation Service Technician and will progress further as Automated System Installation Supervisor and can reach up to Automated System maintenance manager.

- Can become an entrepreneur in the related field

- Can become a Quality Assurance person in Automation System design and installation after gaining experience

Industry Participation:

- Festo, Janatics, Yuken

- Siemens, Mitsubishi

Expert Participation:

Mr. Ansuman Nanda, Lecturer, Mechanical/SoVET, CUTM Odisha, India

CUTM3051 Introduction to Nanotechnology

Course Description:

This developed skill oriented course provides hands-on –practice and enhance the project skill of the students in doing various activities related to nanomaterials including nanometals, nanometal oxides, graphene based materials and their composites for various applications in the field energy, nano composite, etc.
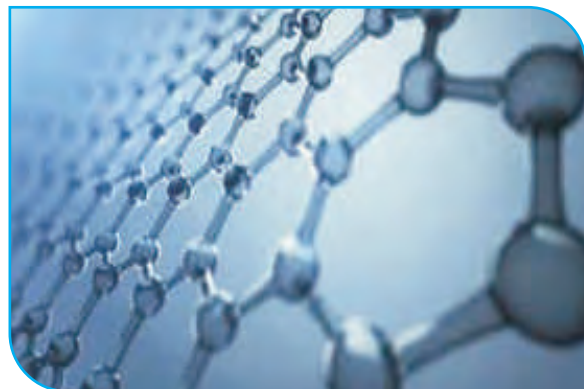
Learning Outcomes:

After completing this programme

- The students will have a broad vision of nano material, nano technology and emerging materials.
- Students will learn about the various mainstream synthesis methods; develop a strong understanding of the role of constituents in overall response of the material.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	manufacturing companies
Duration	4 months
Occupations	Research and Development
Entry Qualification	B.Sc, MSc, BTech
Minimum Age	20Years
Aligned to (QP)	

- Students will know various instrumental techniques for characterizations pertaining to nanomaterials.

Progression Pathways:

- The students can help them in developing different advanced nano materials.
- Can promote entrepreneurship in different fields
- This knowledge will be helpful for doing research in advanced materials.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- Tirupati Graphene & Mintech Research Centre, Odisha

Expert Participation:

Dr. Santosh Kumar Satpathy, Associate Professor, Dept. of Physics, CUTM, Odisha, India

CUTM3053 Camera Operation

Course Description:

This is a skill-oriented course to provide hands-on practice and project work on camera operation. In this course a student will study the techniques of camera operation, lighting techniques and photography composition.

Learning Outcomes:

After completing this programme-
- The trainee will be exposed to digital camera handling
- The trainee will able to develop and understanding of photography techniques and creativity.
- The trainee will be an expert on videography, product photography, fashion photography and nature photography.

Scheme	Skill for Success (SFS)
NSQF Level	
Sector	Media and Entertainment Industry
Duration	4 months
Occupations	Cameraman and Photographer
Entry Qualification	+2 any discipline
Minimum Age	18 Years
Aligned to (QP)	https://www.nqr.gov.in/sites/default/files/QP-Camera%20Operator.pdf

Progression Pathways:

- Can join media industry as cameraman.
- Can work his own production house.
- Can be a professional cameraman.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Expert Participation:

Mr Ashok Panigrahi, Studio Manager Centurion University of Technology and Management SCGJ / NSDC India

CUTM3054 Editor

Course Description:

This is a skill-oriented course to provide hands-on practice and project work on camera operation. In this course a student will study the techniques of camera operation, lighting techniques and photography composition.

Learning Outcomes:

After completing this programme-

- The trainee will be trained in video editing
- The trainee will able to develop the sense of visual and video editing.
- The trainee will be an expert in Video editing, effects and use of graphics templets using software.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Media Industry
Duration	3 months
Occupations	Editor
Entry Qualification	+2/Graduate
Minimum Age	18 Years
Aligned to (QP)	MESQ1401_Editor_V1_22_07_2020.pdf

Progression Pathways:

- Can join media industry as video editor.
- Can work as editor for any industry or company.
- Can be a professional editor and can start his own editing.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Expert Participation:

Mr Ashok Panigrahi, Studio Manager, CUTM, Odisha, India

CUTM3055 Desktop Publishing

Course Description:

This is a skill-oriented course designed to develop competency of students in designing and preparing books, documents, brochures and other similar items for publication industry. Desktop publishers use specific computer softwares to design page layouts for newspapers, books, brochures, and other items that are printed or placed as online documents.

Learning Outcomes:

After completing this program

- The trainee will develop his competency in design principles.
- The trainee will able to develop a sense of aesthetics.
- The trainee will expert designing and image editing softwares like Adobe InDesign and Adobe Photoshop.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	IT-ITeS
Duration	4 months
Occupations	Design and Publishing
Entry Qualification	+2
Minimum Age	18 Years
Aligned to (QP)	https://nqr.gov.in/sites/default/files/QP-Associate-DTP.pdf

Progression Pathways:

- Can join industry as a designer.
- Can become entrepreneur in the related field
- Can do Diploma or any Advance program in the same
- Can become a Quality Assurance person in desktop publishing

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- Book publishing companies, advertising agencies, documentation units and offices.

Expert Participation:

Mr Saban Kumar Maharana, Assistant Professor, SOMC, CUTM Odisha, India

CUTM3056 Introduction to Blender and Unity Tools

Course Description:

This course was designed for Unity developers who want to extend their capabilities to include 3D modeling in Blender. Whether you're interested in designing unique 3D props for your games, building awesome levels, or tweaking your existing Unity Assets, this course can help you get through the learning curve and put you in the driver's seat. You'll learn to Blend like a pro with a good working knowledge of all of the most common tools for editing video game props and level design. We cover all the basic terms, keyboard shortcuts, best practices, time-saving tips, basic animation, assigning UVs, applying materials, textures and more.

Learning Outcomes:

- Create your own Unity props with confidence using Blender 3D
- Make adjustments to Unity Assets by editing them in Blender
- Learn how to make a variety of low-poly models for your video game projects
- Learn about applying Materials, Textures & UVs
- Basic Animation Techniques for both Unity and Blender
- Learn the Blender Features that appeal to video game developers specifically

Scheme	Skill for Success(SFS)
NSQF Level	4
Sector	IntroductionTo BlenderandUnity Tools
Duration	4months
Occupations	3DDesignandGaming
EntryQualification	10th/12th/B.Tech/Diploma/M.Sc/B.Sc
MinimumAge	18 Years
Document	https://worldskills.org/skills/id/483/
Alignedto(QP)	https://api.worldskills.org/resources/download/12392/14952/15880?l=en

Course Objective:

- 3Dmodeling,Texturingand BasicsofAnimationinBlender andUnity
- 3DEnvironment DesignforGameusingUnityEngine
- Lightning, Texturing, Post-processing and Animation
- 3DgamesaremadewithphysicstoeffectthegameObjects
- Learn to Create or Edit Props, Design Levels, Apply Material and Simple Animations using Blender and Unity-3D

Progression Pathways:

- Can join in the industry as 3D Environment Designer.
- Can do Diploma, Master or any Advance program or course in the same.

Learning Record:

- The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct the assessment NOS wise, and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the Practice/knowledge will be based on a written test/viva-voce or both, while the skill test shall be hands-on practical.

Industry Participation:

- GT-Tech (Bhubaneshwar), GTET (Bhubaneshwar), Hid's Technologies, (Bhubaneshwar)

Expert Participation:

Mr. Sandeep Kumar, Unity Certified Trainer, CUTM, Odisha, India.

CUTM3057 Refraction Technology

Course Description:

Refraction Technology course aims at building Refractionist who in the healthcare industry is also known as Ophthalmic Assistant. Refractionist provides vision care and refraction under the supervision of an ophthalmologist. They assist with taking patient histories, performing diagnostic tests and procedures, dispensing optical prescription and maintaining records.

Learning Outcomes:

After completing this programme-

- Perform independent refraction
- Take visual acuity measurements
- Learn basic techniques involved in refraction
- Handling of instruments involved in refraction

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for Health Care
Duration	6 months
Occupations	Refractionist
Entry Qualification	10+2 Science or Level 3 Vision technician with a minimum three years of experience.
Minimum Age	18 Years
Aligned to (QP)	https://nsdcindia.org/sites/default/files/QP_HSS-Q3002_Refractionist.pdf

Progression Pathways:

- The course is developed aimed at giving the students hands-on practical experience in performing refraction technique. They can check basic vision and record the same independently.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- Essilor India Private Limited- An ophthalmic lens and instrument manufacturing company
- EYE-Q Super Specialty Eye Hospital, Gurgaon.
- ASG Eye Hospital, Pan India

Expert Participation:

Mr. Ranitava Banerjee, Assistant Professor, Department of Optometry, SoPAHS, CUTM, Bhubaneswar

Mr. Arup Saha, Assistant Professor, Department of Optometry, SoPAHS, CUTM, Bhubaneswar

CUTM3058 Emergency Medical Technology

Course Description:

This is a skill-oriented course to provide hands-on practice and project work in the study of Emergency medical technology, and it's designed to train healthcare professionals in basic emergency lifesaving procedures & provide immediate care for a suddenly ill person.

Learning Outcomes:

After completing this program-

- The trainee will learn the essential skills to help in life-threatening situations.
- The trainee will be able to develop an understanding to provide for immediate medical care to the people who most need it.
- The trainee will initial diagnosis & management of the acute & urgent aspects of illness & injury affecting patients of all age groups.
- The trainee will implement activities and to meet desired outcomes.

Scheme	Skill for Success (SFS)
NSQF Level	5
Sector	Skill Council for Health Sector
Duration	4 months
Occupations	Emergency Medical Technician
Entry Qualification	Class XII in Science
Minimum Age	18 years
Aligned to (QP)	https://nsdcindia.org/sites/default/files/QP_HSS-Q2302_Emergency-Medical-Technician-Advanced.pdf
Documents	http://courseware.cutm.ac.in/courses/emergency-medical-technician-60-hour/

Progression Pathways:

- Can join as a front-line health worker in any hospitals, nursing homes, or private/government laboratories.
- Can become a Quality Assurance person in Emergency medical technology after gaining experience.
- Can do any Advance program or course in the same.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct nassessment and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both, while the skill test shall be hands-on practical.

Industry Participation:

- Collaboration with 21 numbers of spitals inside and outside of Odisha. Some of them: Community Diagnostic Centre, SUM Hospital, Apollo Hospital, AMRI Hospital, AIIMS Hospital, SCBMCH, Manipal Hospital, Vijay Diagnostic etc.

Expert Participation:

ItishreeMohapatra, Trainer, CUTM Odisha, India

CUTM3059 Medical Lab Technology

Course Description:

This is a skill-oriented course to provide hands-on practice and project work in the study of various diagnostic techniques, which includes routine investigation, the operation of medical laboratory equipment and its installation, calibration, and quality control.

Learning Outcomes:

Upon the completion of the course student will be able to:

- Able to collect the pathological specimen.
- They can Preserve and process the pathological sample.
- Able to handle all laboratory instruments.
- Able to detect abnormal conditions.
- Able to compile and print the pathological reports.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for
Duration	4 months
Occupations	Medical Laboratory Technician
Entry Qualification	Class XII in Science or Level 3 Phlebotomy with experience of minimum three years in the laboratory set up
Minimum Age	18 Years
Aligned to (QP)	NCO-2004/3221.1 https://nsdcindia.org/sites/default/files/QP_HSS-Q0301_Medical-Laboratory-Technician.pdf

Progression Pathways:

- Can join as an Assistant Lab Technician in any hospitals, nursing homes, private/government laboratories and research centers.
- Can work as an Assistant Lab Technician in any Pharma industries, Life Science laboratories.
- Can participate in RNTPC, Malaria eradication program, DOTS center.

Industry Participation:

- Collaboration with 21 numbers of hospitals inside and outside of Odisha. Some of them: Community Diagnostic Centre, SUM Hospital, Apollo Hospital, AMRI Hospital, AIIMS Hospital, SCBMCH, Manipal Hospital, Vijay Diagnostic etc.

Expert Participation:

Susmita Chakrabarty, Assistant Professor, MLT/CMB, CUTM Odisha, India

CUTM3060 Operating Theatre Technology

Course Description:

This skill course is about preparing and maintaining operating theatres and equipment and assisting surgical and anaesthetic teams during operations. Along with that, they prepare patients and the operating room. They check all the set-up requirements for surgeries and adjust all the surgical equipment according to the operation.

Learning Outcomes:

After completing this programme

- The trainee will be exposed to health sectors to prepare patients for operation.
- The trainee will be able to understand and ensure the surgical and anaesthetic teams during the operation.
- The trainee will be an expert on responding to the surgical and anaesthetic teams and patients during the phase of operation or prior to that.
- The trainee will check all the requirements of an operation prior the operation.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for Healthcare (SCH)
Duration	4 months
Occupations	Direct Care
Entry Qualification	12th Class Science
Minimum Age	18 Years
Aligned to (QP)	https://www.healthcare-ssc.in/pdf/QP/ Operating%20 Theatre%20Technician.pdf
Document	http://courseware.cutm.ac.in/courses/30700/

Progression Pathways:

- Can join health industries as an operating theatre technician to assist a doctor.
- Can become a health attendant in the operation theatre
- Can do ATT program in the same

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct the assessment NOS wise, and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both, while the skill test shall be hands-on practical.

Industry Participation:

1.Manipal Health Enterprises Pvt. Ltd.; 2.SUM Hospital; 3.Ashwini Group of Hospitals 4.Kar Vision Eye Hospital, 5.TrilochanNetralaya, 6. ECOS EYE Hospital

Expert Participation:

Sri Itismita Mohanty, SoPAHS, BBSR, Odisha

CUTM3061 Radiology Technician

Course Description:

It's a skill-oriented course to provide practice and knowledge to an individual to prepare the room and patient for performing diagnostic imaging examinations such as X-ray, CT scan and MRI under the guidance. Prepare the patients, unit & machine and keep patient records along with maintaining the standards of the equipment.

Learning Outcomes:

After completing this program –

Scheme	Skill for success (SFS)
NSQF Level	3
Sector	Health
Duration	4 months
Occupation	Radiology Technician
Entry Qualification	XII
Minimum Age	18
Aligned to (QP)	HSS/Q0201

- The individual will be able to set up the X-ray, CT and MRI equipment's to be used, ensure that safety precautions are taken to protect self, patient and staff from exposure to radiation
- Trainee will be expertise in preparing and positioning the patient correctly for different radiological procedures
- Able to prepare the room, apparatus and instruments for x-ray, CT scan, MRI

Progression Pathways:
- Can assist in the department of Radio-diagnosis
- Can further pursue Diploma/ Degree courses in the same

Learning Record:
- The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both, while the skill test shall be hands-on practical.

Industry Participation
- Collaboration with 21 numbers of hospitals inside and outside of Odisha. Some of them: Community Diagnostic Centre, SUM Hospital, Apollo Hospital, AMRI Hospital, Vijay Diagnostic etc.

Expert Participation:
Jitendra Gupta, Lab Instructor (Radiology), SoPAHS, CUTM Odisha, India

CUTM3062 Phlebotomy Technology

Course Description:

This is a skill-oriented course to provide hands-on practice and project work in the study of blood sample collection, preservation, and preparation for hematological investigation purposes.

Learning Outcomes:

After completing this programme-

- Students will learn to work in hospitals, clinics, and other medical facilities
- Learn the skill of drawing blood from patients in preparation for medical testing.
- Demonstrate knowledge of infection control and safety.
- Demonstrate professional conduct and interpersonal communication skills with patients, laboratory personnel, other health care professionals, and the public.

Scheme	Skill for Success (SFS)
NSQF Level	3
Sector	Healthcare Sector Skill Council
Duration	4 months
Occupations	Phlebotomy Technician
Entry Qualification	Class XII in Science
Minimum Age	18 years
Aligned to (QP)	QP_HSS-Q0501_Phlebotomy-Technician.pdf

- Demonstrate proper techniques to perform venipuncture and capillary puncture.

Progression Pathways:

- Can join as a Phlebotomy Technician in hospitals, nursing homes, private/government laboratories and research centers.
- Can work as a certified blood collection assistant.
- Able to do the work in the Health industries.
- Able to work in Health Programme in India, RNTPC, Blood Bank, Malaria eradication Programme

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct the assessment NOS wise, and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both, while the skill test shall be hands-on practical.

Industry Participation:

- Collaboration with 21 numbers of hospitals inside and outside of Odisha. Some of them: Community Diagnostic Centre, SUM Hospital, Apollo Hospital, AMRI Hospital, AIIMS Hospital, SCBMCH, Manipal Hospital, Vijay Diagnostic etc.

Expert Participation:

Susmita Chakrabarty, Assistant Professor, MLT/CMB, CUTM Odisha, India.

CUTM3063 First Aid Services

Course Description:

This is a skill-oriented course to provide hands-on practice and project work in the study to provide immediate care for a suddenly ill or injured person until more advanced medical care arrives to take over.

Learning Outcomes:

Upon the completion of the course, student will be able to:

- Administering cardiopulmonary resuscitation to an adult, including using an AED.
- Administering first aid to an adult casualty who is choking.
- Administering first aid to an adult casualty who is wounded and bleeding.
- Administering first aid to an adult casualty who is suffering from shock.
- providing appropriate first aid for minor injuries (including small cuts, grazes and bruises, minor burns and scalds, small splinters).

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for
Duration	4 months
Occupations	First Aid Services
Entry Qualification	Preferably Class X
Minimum Age	18 years
Aligned to (QP)	First Aid QP not available at https://nsdcindia.org/qp-nos-results 1. https://www.indianredcross.org/ircs/stjohn 2. https://nsdcindia.org/sites/default/files/MC_HSS-Q2301_Emergency-Medical-Technician---Basic.pdf 3. https://nsdcindia.org/sites/default/files/MC_HSS-Q5101_General-Duty-Assistant.pdf

Progression Pathways:

- Can join as a front-line health worker in any hospitals, nursing homes or private/government laboratories.
- Can work as a Cabin Crew and Flight attendant.
- Can work as a first-aid service provider in industries, transport & tourism.
- Able to do the work in casualty at Health industries.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment of the theory/knowledge will be based on a written test/viva-voce or both, while the skill test shall be hands-on practical.

Industry Participation:

- Collaboration with 21 numbers of hospitals inside and outside of Odisha. Some of them: Community Diagnostic Centre, SUM Hospital, Apollo Hospital, AMRI Hospital, AIIMS Hospital, SCBMCH, Manipal Hospital, Vijay Diagnostic etc.

Expert Participation:

Itismita Mohanty, Trainer Healthcare Certificate Programme, CUTM Odisha, India.

CUTM3064 General Duty Assistant

Course Description:

This skill course is about transferring a patient by general duty assistant facility in the health sector. The purpose of transferring is to move the patient to and from a bed, wheelchair or chair using proper body mechanics, focusing on safety and planning. Some of the key responsibilities include maintaining activities of patients daily living, patient comfort, safety and health needs.

Learning Outcomes:

After completing this programme-

- The trainee will be exposed to health sectors to maintain self-cleanliness and hygiene before and after caring of the patient.
- The trainee will be able to understand and ensure the health sector guidelines.
- The trainees will be experts on responding to patient's elimination needs promptly as per gender, age, and preferences of the patient and hospitals.
- The trainee will measure output, record them, implement activities, and organise resources to meet desired outcomes.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for Healthcare (SCH)
Duration	6 months
Occupations	Non-direct Care
Entry Qualification	10th Class
Minimum Age	18 Years
Aligned to (QP)	HSS/Q5103

Progression Pathways:

- Can join health industries as a general duty assistant and will progress Assist nurse.
- Can become a health attendant in the related field.
- Can do ANM program in the same domain.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- Every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation

- Collaboration with 21 numbers of hospitals inside and outside of Odisha. Some of them: Community Diagnostic Centre, SUM Hospital, Apollo Hospital, AMRI Hospital, etc.

Expert Participation:

Mrs. Itismita Mohanty, Tutor, SoPAHS, CUTM Odisha, India.

CUTM3065 X-Ray Technician

Course Description:

It's a skill-oriented course to provide a Knowledge, Understanding and practice to an individual to perform diagnostic imaging examinations such as X-ray images, and Mammography scans under the guidance of a Radiologist. Prepare the patients, unit & machine for tests. keep patient records and test recommended along with maintaining the standards of equipment.

Learning Outcomes:

On completion of this program,

- The individual will be able to Handle X-ray equipments, develop exposed x-ray films, Prepare the room, apparatus, and instruments for conventional radiological procedures like X-ray and Mammography and Set up the machine for the desired procedure
- Trainee will be able to position the patient correctly for an x-ray in the following positions: Erect, Sitting, supine, prone, lateral, oblique, decubitus
- Setting up the equipment for images & ensuring safety from radiation to patients, self, coworkers

Scheme	Skill for Success (SFS)
NSQF Level	3
Sector	Health
Duration	4 months
Occupation	X- Ray Technician
Entry Qualification	XII, Class X also considered in certain situations
Minimum Age	18
Aligned to (QP)	NCO-2004/3211.0100 HSS/ Q 0701

Progression Pathway:
- Can assist in the department of Radio-diagnosis
- Can further pursue Diploma/ Degree courses in the same
- Can be hired in hospital, diagnostic centers, community health center, Polyclinics.

Learning Record:
- The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:
- Every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:
- Collaboration with 21 numbers of hospitals inside and outside of Odisha e.g., Community Diagnostic Centre, SUM Hospital, Apollo Hospital, AMRI Hospital, Vijay Diagnostic etc.

Expert Participation:
Sashisaroj Tiwari, Assistant Professor (Radiology), SoPAHS, CUTM Odisha, India.

CUTM3067 Retail Sales Associates

Course Description:

This is a skill course of "Retail Sales Associate" where Individuals in this position interact with customers by giving specialized service and product demonstrations to maximize business in a retail environment whilst striving for continuous improvements in levels of services rendered.

Learning Outcomes:

After completing this programme, the students will be able to-

- Understand the concept of retailing
- Demonstrate products to customers
- Maximize sales of goods & services
- Provide personalized sales & post-sales service support
- Create a positive image of self & organization in the customer's mind etc.

Career Pathways:

- Can join the industry as retail sales associate and become a store Manager in a year.
- Can set up his/her own enterprise in retail.
- Can able to manage a group of retail outlets and become an area manager.
- Higher up in the retail chain they will be able to apply for wide ranging corporate positions from roles in buying to (Choosing the stocks that stores will sell) to marketing, strategic planning and so on.

Scheme	SkillforSuccess (SFS)
NSQFLevel	4
Duration	4Months
Sector	Retailers Association's Skill Council of India(RASCI)
Occupations	Retail Store Operations
EntryQualification	10th/12th
MinimumAge	18Years
Alignedto(QP)	https://nsdcindia.org/sites/default/files/QP-RASQ0104-Retail-Sales-Associate-v2-19-01-2018.pdf
Document	http://courseware.cutm.ac.in/courses/retail-sales/

Learning Record:

The trainees shall submit a Practice/Project/Learning record after each class/session taught to them by reflecting on what they have learnt from the session.

Assessment Process:

- The assessment agencies should have an expert to conduct the assessment NOS wise, and every trainee should score a minimum of 70% in the overall assessment to qualify for the test.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both, while the skill test will be on hands-on practice.

Industry Participation:

- Centurion Coffee Connect, Jatani, Khurda
- Urban Micro Business Center, Bhubaneswar

Expert Participation:

Mr. Laluprasad Parida, SSC Certified Retail Trainer by National Skill Development Corporation (NSDC).

Centurion University of Technology and Management, Odisha, India.

CUTM3068 Basketball

Course Description:

This course is designed to provide basic and advanced skills in offence and defence, guides in developing students –appropriates coaching philosophy and provides effective communication strategies to play and enjoy. To provide knowledge, understanding and appreciation to the basketball game.   To develop satisfactory competency in basic skills such as footwork, dribbling, passing, shooting, rebounding and game play in half-court and full court situation. Basic fundamentals skill, rule/terminology, officiating team offence/defence and situational strategies.

Learning Outcomes:

- Understand basics basketball rules, terminology and safety concern.

- Demonstrate the ability to perform individual/ team offensive and different skills and strategies.

- Demonstrate proper etiquette and good sportsmanship.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Basketball
Duration	4 months
Occupations	Coach
Entry Qualification	ITI/Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	https//www.fiba.basketball

Progression Pathways:

For many, basketball provides opportunities for exercise and socializing with friends and acquaintances. But basketball also offers many career opportunities to those with the right qualifications. Many of these jobs center around schools, particularly high schools and colleges. Large cities tend to offer the most basketball-related jobs, including the bulk of jobs involving professional basketball.

Player Basketball Opportunities

The **National Basketball Association** employs the most talented basketball players, who earn six- to eight-figure annual salaries. The **WNBA** employs female basketball players, but they tend to earn less than their male counterparts. The NBA also operates a developmental league, where players work for significantly less and with lesser notoriety. Additionally, overseas basketball leagues offer career opportunities to basketball players. Many players who do not find steady NBA jobs choose to play in Europe. Most athletes play basketball professionally through their mid-to-late-30s.

Expert Participation:

Sri Debabrata Biswal Assistant Sports Officer, Sports Department CUTM Odisha,

CUTM3069 Gym Fitness

Course Description:

Familiarization to the principles, equipment used in the gym. Develop an end-to-end technique during work out. Understand the importance of the fitness in our day to day life.

Learning Outcomes:

After completing this program students will learn

- Proper safety technique to be followed during the exercise
- To implement the proper position during weight lifting
- Implementing of proper stretching 4. Zumba and its effect in our life

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	SPEFL-SC
Duration	4 months
Occupations	Coach
Entry Qualification	ITI/Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	BWSQ3001_Gym_Assistant_v1_31_08 _2018.pdf

Progression Pathways:

- Develop excellent physical coordination and maintain good health
- Can become gym instructor

Expert Participation:

Mr. Durga Charana Mohapatra Assistant Sports Officer & Mr. Debabrata Biswal Assistant Sports Officer

CUTM3070 Swimming

Course Description:

This is a skill course is to provide knowledge, understanding & appreciation towards the sports. To develop satisfactory competency in basic skills such as breathing, exercise, floating, different types of kicks and to develop fundamental skills in swimming.

Learning Outcomes:

After completing this course, the students will be able to-

- Advance swimming stamina in all four strokes while maintaining technique
- Improve efficiency in all four strokes
- Develop turn technique for all four strokes
- Knowledge and understanding of club training practices

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	SPEFL-SC
Duration	4 months
Occupations	Coach
Entry Qualification	ITI/Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	

Progression Pathways:

Learning the four swimming strokes comes after you have mastered the basic skills of swimming. If you have reached this point then we have collated some tips below to help you learn the four swimming strokes: front crawl, breaststroke, backstroke and butterfly.

Expert Participation:

Mr. Kaushik Das P.E.O CUTM BBSR

CUTM3072 Yoga and Meditation

Course Description:

This is a skill-oriented course to educate students about good lifestyle, morality, health, happiness and harmony through Yoga and Meditation. It focuses towards development of overall well-being like- physical, mental, social and spiritual. Students will able to know life better by following major paths of Yoga i.e., Karma Yoga, Jnana Yoga, Bhakti Yoga, Raja Yoga and Hatha Yoga.

Learning Outcomes:

After completing this programme-

- To understand the concept of Practicing Yoga with its true meaning.
- To perform some major detoxification techniques as Yogic Kriya.
- To perform various important Asanas & Surya Namaskar.
- To perform various Pranayama (breathing techniques)
- To practice various Meditation techniques towards mental peace and eradicate unnecessary thoughts.
- To overcome many simple disorders like- stress, anger, insomnia, laziness, joint pain, breathing problems, blood pressure imbalance, constipation, pimples, dry skin etc.

Scheme	Skill for Success (SFS)
NSQF Level	5
Duration	4 months
Sector	BEAUTY & WELLNESS
Occupations	Health & Wellness
Entry Qualification	10th Pass (understand Odia, Hindi & Basic English)
Minimum Age	12 Years
Aligned to (QP)	BWSQ2203-Yoga-Trainer-V1-19-12-2017.pdf
Document	http://courseware.cutm.ac.in/courses/sfs-yoga-and-meditation/

Progression Pathways:

- Can join any Yoga Schools, Colleges, Universities, or any wellness related organization as Yoga trainer and health assistant,
- Can become entrepreneur in the field of Yoga and wellness.
- Can be helpful to do Diploma or any Advance course in the same area.
- Can develop various positive qualities like well-behavior, good-character, healthy body and happy mind.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Expert Resource Person:

Sri Pradeep Kumar Sahoo, Programme Associate (Yoga & Wellness), CUTM Odisha, India

CUTM3073 Solar PV Installation

Course Description:

This is a skill-oriented course to provide hands-on practice and project work in studying solar photovoltaic (PV) technology, systems, and equipment such as solar modules/panels, charge controller, inverter, battery and electrical/electronic/mechanical appliances.

Learning Outcomes:

After completing this program-

- The trainee will be exposed to current solar PV requirements, issues, challenges and debates.
- The trainee will be able to develop an understanding of perspective on SDGs.
- The trainee will be an expert on load calculation, design, and installation of the Solar PV system.
- The trainee will implement activities and organize resources to meet desired outcomes.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for Green Jobs (SCGJ)
Duration	4 months
Occupations	Design and Installation
Entry Qualification	ITI/Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	QP-SGJ-Q0101_Solar-PV-Installer_Suryamitra_v1-9-4-2017.pdf

Progression Pathways:

- Can join the industry as a Solar Project helper and progress further as a Solar PV installer than to Solar PV Engineer and can reach up to Solar PV Project manage.
- Can become an entrepreneur in the related field.
- Can do Diploma or any Advance program in the same.
- Can become a Quality Assurance person in Solar PV installation after gaining experience.

Industry Participation:

- Aditya Birla Renewables Limited, Odisha
- Meet Consultancy Services, Delhi

Expert Participation:

Sri Nimay Chandra Giri, Assistant Professor, ECE/CREE, CUTM Odisha, India
Master Trainer, SCGJ/NSDC India

CUTM3074 Solar Lighting Technician

Course Description:

This is a skill-oriented course to provide the students with the design of Solar operated LED lights consuming low current low watt and to know the load calculation.

Learning Outcomes:

After completion of this said course:-

- The trainee will be able to design low cost led which can be powered by Solar.
- The trainee will be an expert on load calculation, design, implementation, and troubleshooting.
- The trainee will implement different activities like the ulti-board design of the led driver circuit.

Progression Pathways:

- Can join the industry as a Solar light designer and will progress further as a Solar light installation.
- Can become an entrepreneur in the related field.
- Can do Diploma or any Advance program in the same.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for Green Jobs (SCGJ)
Duration	4 months
Occupations	Design and Implementation
Entry Qualification	ITI/Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	SGJ_Q0201_Solar Lighting Technician_Model Curriculum.pdf (nqr.gov.in)
Document	http://courseware.cutm.ac.in/courses/skill-course-solar-lighting-technology/

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct the assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- Philips Lighting India Limited
- Exide Industries Ltd
- Ideal Crew Technology Hiring For MNC

Expert Resource Person:

Smruti Ranjan Nayak Lecturer, ECE/CREE, CUTM Odisha, India

Master Trainer SCGJ/NSDC India

CUTM3076 Solar PV Microgrid System

Course Description:

This is a skill oriented course to provide hands-on practice and project work in the field of microgrid and distributed generation system. Here the training will be provided on dc grid system, ac grid system and its interconnection with the central grid.

Learning Outcomes:

After completing this program-

- The trainee will be exposed to distributed generation and interconnected power system.
- The trainee will able to implement microgrid system.
- The trainee will learn load calculation, design, and installation of Solar PV Microgrid System.
- The trainee can implement standalone project and can do end to end business process with market.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for Green Jobs (SCGJ)
Duration	4 months
Occupations	Operation & Maintenance
Entry Qualification	Diploma/B. Tech/Applied Science
Minimum Age	16 Years
Aligned to (QP)	QP-SGJ-Q0101_Solar-PV-Installer_Suryamitra_v1-9-4-2017
Document	http://courseware.cutm.ac.in/courses/skill-solar-pv-microgrid-system/

Progression Pathways:

- Can join Power & Energy industry as Project Engineer, Maintenance Engineer, quality Officer.
- Can become entrepreneur with own business set up
- Can set up R&D facility with Advance program.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- OREDA
- SELCO
- SCHNEIDER

Expert Participation:

Sri Rama Prasanna Dalai, Assistant Professor, EEE, CUTM Odisha, India

Master Trainer, SCGJ/NSDC India

CUTM3077 Solar PV Driven Equipment O/M & Assembly

Course Description:

This hands-on, project-based skill course will cover solar photovoltaic (PV) technologies, systems, system components, system seizing, driven materials designs and equipment such as solar modules/panels, charge controllers, inverters, batteries, and electrical/electronic/mechanical appliances.

Learning Outcomes:

After completing this course-

- The learner will learn about contemporary solar PV needs, difficulties, challenges, and controversies.
- The learner will be able to acquire a perspective on the SDGs.
- The trainee will be an expert in load calculations, solar PV system design, and installation.
- The learner will be able to carry out Operation of PV driven equipment's.

Scheme	Skill for Success (SFS)
NSQF Level	5
Sector	Skill Council for Green Jobs (SCGJ)
Duration	4 months
Occupations	Solar PV Driven Equipment, O/M & Assembly (0 -3-1) i.e.; 60 hrs.(SGJ/Q0117, v1.0)
Entry Qualification	ITI/Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	SGJ_Q0117_Solar_PV_OM_Engineer_v1.pdf (nsdcindia.org)

- The trainee will implement activities and organise resources to meet desired outcomes.

Progression Pathways:

- Can start out as a Solar Project Assistant and work their way up to Solar PV Installer, Solar PV Engineer, and Solar PV Project Manager. Can become an entrepreneur in the related field
- Can do Diploma or any Advance program in the same.
- After obtaining experience, the trainee will be able to work as a Quality Assurance person for solar PV-driven equipment's, Design Engineer, Expert in trouble shooting.

Learning Record:

- The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation: • Schneider Electricals Pvt. ltd. • Selco foundation

Expert Resource Person: Smruti Ranjan Nayak, ECE/CREE, CUTM Odisha, India

- Master Trainer Solar PV Installer Suryamitra (SGJ/Q0101).
- Master Trainer Domain Skills & Platform Skills (MEP/Q2601).
- TP Coordinator---Suryamitra Skill Development Program (SGJ/Q0101) for CUTM.
- Certified Trainer (HHP, Optical Fiber Tech, ARM, Solar Suryamitra Skill, Solar Lighting Technician, Solar EV design). Certified Assessor (ELC-701, 702, 703, ELE-701, REN-701, SES-101).
- Directorate General of Training Examiner (Govt of Odisha) PRN-EX172100048.

CUTM3078 Solar Thermal Engineering

Course Description:

This skill course specializes in the utilization, installation and maintenance of Solar Thermal Technologies for the supply of process heat in industry. This course encompasses National Occupational Standards (NOS) and is aligned with NSQF level 5 of "Solar Thermal Engineer - Industrial Process Heat," Qualification Pack (SGJ/Q0603) issued by "Skill Council for Green Jobs (SCGJ) of India".

Learning Outcomes:

After completing this programme-

- The trainee will be exposed to sign solar thermal technologies olutions for industrial process heat applications
- The trainee will be nsured installation, testing and commissioning of solar thermal systems
- The trainee will be able to arry out proper maintenance of solar thermal systems
- The trainee will aintainpersonal health & safety at heolar thermal project site

Scheme	Skill for Success (SFS)
NSQF Level	5
Duration	4 Months
Sector	Skill Council for Green Jobs (SCGJ)
Occupations	Design, installation and maintenance
Entry Qualification	ITI/Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	https://sscgj.in/wp-content/uploads/2016/06/SGJ_Q0603_Solar-Thermal-Engineer-Industrial-Process-Heat_v0.pdf
Document	http://courseware.cutm.ac.in/courses/solar-thermal-engineer-industrial-process-heat/

Progression Pathways:

- Can join the industry as solar thermal installer of various solar thermal systems and can become solar thermal Project manager.
- Can become an entrepreneur in the related field.
- Can do a Diploma or any Advance program or will do research work in the same
- Can become a Quality Assurance person in solar thermal installation after gaining experience.

Industry Participation:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct the assessment NOS wise, and every trainee should score a minimum of 70 % in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both, while the skill test shall be hands-on practical.

Industry Participation:

- ELCO,ndia

Expert Participation:

Prof. Debashree Debadatta Behera, Assistant Professor, Mechanical Eng., CUTM Odisha, India
Master Trainer, SCGJ/NSDC India

CUTM3079 Introduction to Quantum Computing

Course Description:

Quantum computing is the exploitation of collective properties of quantum states, such as superposition and entanglement, to perform computation. Using quantum computing, specific complex problems pertaining to Computational Chemistry, Cyber security & Cryptography, Artificial Intelligence & Machine Learning, Financial Modelling etc. can be solved more efficiently than on classical computers.

Learning Outcome:

After learning the course the student will be able to

- Simulate using Quantum computing with Python programming language in local computer.
- Design and validate simulation quantum circuits for various standard procedures of Quantum Computing.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Electronics Sector Skills Council of India (ESSI)
Duration	4 Months
Occupations	
Entry Qualification	ITI/Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	https://nqr.gov.in/sites/default/files/QP-Field%20Technician-%20Computing%20and%20%20Peripherals.pdf

- Work with the real time Quantum Computer.

Progression Pathways:

- Working as a quantum computing developer.
- Can use in research activities

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- Every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Expert Participation:

Dr. Ashok Mishra

CUTM3081 Organic Farming

Course Description:

This course aims at providing practical knowledge and develop a clear understanding regarding organic farming. To impart knowledge in raising of crops and their management in organic farming.

Learning Outcomes:

After completion of this said course:-

- Skilled practitioner
- Organic Agri. / Horti. product Entrepreneur
- Gaining knowledge on organic farming
- Successful raising of crops under organic farming

Scheme	SkillforSuccess(SFS)
NSQF Level	4
Sector	Agriculture and Allied
Occupations	Agri entrepreneur
Entry Qualification	ITI/Diploma/B.Tech/Applied Science/Agriculture
Minimum Age	18Years
Aligned to(QP)	Organic grower(NSDC)

Progression Pathways:

- Skilled Consultant on Organic Farming
- Organic farmer

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- Every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

Regional Centre of Organic Framing Bhubaneswar, India.

Expert Resource Person:

Dr. Saurav Barman

CUTM3082 Mushroom Grower

Course Description:

This skill course aims to cater subject-matter and manual knowledge on mushroom farming and to popularize its advantageous farm economics. It thoroughly describes and infuse the theory and practical knowledge on subject. The learner will get enriched with knowledge and experience on mushroom farming.

Learning Outcomes:

After completion of this said course:-

- Understanding mushrooms, types (edible & poisonous) and mushroom production
- Learning cultivation of different edible mushrooms
- Acquaintance with climatic requirements of mushroom cultivation
- Building knowledge on diseases and pests of mushroom and their management

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Agriculture and Allied
Occupations	Agri entrepreneur
Entry Qualification	ITI/Diploma/B.Tech/AppliedScience/Agriculture
Minimum Age	18 Years
Aligned to(QP)	Mushroom Grower(NSDC)

- Knowing harvesting and post harvesting processes of mushroom
- Learning value added products preparation from mushroom
- Having the prospects of commercial mushroom production

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Progression Pathways:

- To develop a business plan on Mushroom cultivation
- To help the learner to practice a means of self employment and income generation

Learning Record:

- The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- Every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Expert Participation:

Deepak Kandheer

CUTM3083 Hydroponics Technology

Course Description:

This is a skill oriented course to A Hydroponics Technician is responsible for ensuring proper functioning of the hydroponics system by meeting important requirements and environmental conditions required for cultivation of both food and fodder crops/plants.

Learning Outcomes:

After completing this programme-

- The trainee will be exposed to current hydroponics technology issues, challenges and debates.

- The trainee will be Responsible for the successful cultivation of crops using the hydroponics technique.

- The trainee will be Familiarize with Basic farming practices; and some experience in crop farming

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Agriculture
Duration	4 months
Occupations	Landscaping, Gardening & Urban Farming
Entry Qualification	10th/12th/ ITI pass
Minimum Age	18 Years
Aligned to (QP)	https://nsdcindia.org/sites/default/files/AGRQ0808_Hydroponics_Technician_v1_10_01_2019.pdf

Progression Pathways:

- He/She can establish a Hydroponics set up.

- He/She will be able to run a Hydroponics set up for crop cultivation.

Industry Participation:

- Modern Acres India, Startup Odisha

Expert Participation:

Dr. Dinkar Gaikwad, Associate Professor, MSSSoA, CUTM Odisha, India

CUTM3084 ABC01 Poultry Farming

Course Description:

This is a skill-oriented course to provide hands-on practice and complete project execution work in poultry farming. They will learn about day-to-day farm management, disease management, feeding management, identification of different breeds and sexes, clean egg production and Economic traits of Poultry.

Learning Outcomes:

After completing this program-

- The students having rigorous practical experience in an organized institutional poultry farm for a period of 2-3 months became self-confident to go for entrepreneurship on poultry.

- Be a good advisor, planner, and policymaker.

- Development of project involving small scale industries on poultry became easier.

Scheme	Innovation Agriculture Project, NSDC
NSQF Level	3
Sector	Agriculture
Duration	3 months
Occupations	Farm Management
Entry Qualification	12 Pass (preferably science/ agriculture optional)
Minimum Age	17 Years
Aligned to (QP)	https://www.nqr.gov.in/sites/default/files/QF%20%20Poultry.pdf

- Economics of the farm can be better assessed by these professional involved in skill course on poultry.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct the assessment NOS wise, and every trainee should score a minimum of 70% in the overall assessment.

- The assessment of the theory/knowledge will be based on a written test/viva-voce or both, while the skill test shall be hands-on practical.

Progression Pathways:

- Can join any poultry farm and can manage independently.

- Can become an entrepreneur in the related field

Expert Participation:

Dr. Abhishek Hota, Assistant Professor, Dept. of Animal Science, CUTM Odisha, India

CUTM3085 ABC01 Dairy Farming

Course Description:

This is a skill-oriented course to provide hands-on practice and project work in dairy farming. They will learn day to day economic characteristics about farm management, disease management, feeding management, identification of different breeds, clean milk production and cattle and buffaloes.
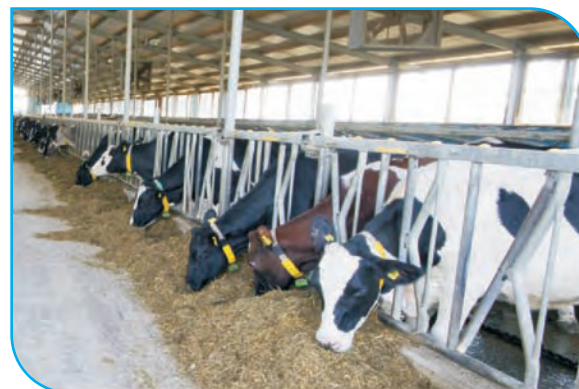
Learning Outcomes:

After completing this program-

- This skill course on dairy farming shall make the professional farmer self-sustained and practically well versed as well as shall create self-confidence to go for entrepreneurship on dairy farming.

- This course dealing with various stages of practical experience shall make the students to rectify them from doing uneconomical practices on the farm.

Scheme	Innovation Agriculture Project, NSDC
NSQF Level	5
Sector	Agriculture
Duration	3 months
Occupations	Farm Management
Entry Qualification	12 Pass (preferably science/ agriculture optional)
Minimum Age	17 Years
Aligned to (QP)	https://www.nqr.gov.in/sites/default/files/NSQF%20-%20QualFile%20%20V-6%20%281%29-%20Dairy%20Farm%20Supervisor%20%283%29.pdf

- The students are being involved in the farm management from day one of a calf born until it produces its performance records. The continuous process of observing & doing the typical farm management practices make students stronger in opting a self-dependent dairy farm in large scale.

- The students shall know the behavioural attitude of farm animals from their practical experiences, which benefitted the students of various professionals for saving animals from diseases or any natural calamities.

Progression Pathways:

- Can join any dairy farm and can manage independently.
- Can become an entrepreneur in the related field

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Expert Participation:

Dr. Abhishek Hota, Assistant Professor, Dept. of Animal Science, CUTM Odisha, India

CUTM3086 Vermicompost Farming

Course Description:

This is a skill-oriented course to to understand the concept of vermicomposting, get hands-on experience while learning and to practice it techniques inappropriate site/location

Learning Outcomes:

After completion of this said course:-
- Skilled practitioner
- Vermicompost Entrepreneur

Progression Pathways:
- Skilled Consultant on Vermicompost
- Can be a vermicompost producer to produce good quality vermicompost by using correct species of worms and techniques.

Scheme	SkillforSuccess(SFS)
NSQF Level	4
Sector	Agriculture and Allied
Occupations	Agri entrepreneur
EntryQualification	ITI/Diploma/B.Tech/Applied Science/Agriculture
MinimumAge	18 Years
Aligned to(QP)	Vermicompost Producer(NSDC)

Learning Record:
- The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:
- Every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

Regional Centre of Organic Framing Bhubaneswar, India.

Expert Resource Person:

Dr. Saurav Barman

CUTM3087 Manufacturing & Repair-Maintenance of Power & Distribution Transformer

Course Description:

The skill course aims to provide hands-on practice and project work in the field Power & Distribution transformer manufacturing, repair & maintenance, with state-of-the-art, NABL accredited transformer testing laboratory & manufacturing facility of institute.

Learning Outcomes:

After completing this program;

- The trainee will be exposed to manufacturing, repair & maintenance of Power & Distribution Transformer.
- The trainee will able to troubleshoot a transformer.
- The trainee will learn on testing, and commissioning of Power & Distribution Transformer.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Power Sector Skill Council
Duration	3 months
Occupations	Transmission & Distribution
Entry Qualification	ITI/Diploma/B. Tech/Applied Science
Minimum Age	18 Years
Aligned to (QP)	QP_PSS-Q3003_Technician-Distribution-Transformer-Repair_0

Progression Pathways;

- Can join industry as transformer testing engineer.
- Can become a transformer repair & maintenance professional in electrical industry.
- Can become entrepreneur in the field transformer manufacturing.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- Tata Power Ltd.
- Alfa Transformers Pvt. Ltd
- Odisha Power Transmission Corporation Ltd, Odisha

Expert Participation:

- Prof. J.Padhi, Director, CUTM Odisha, India
- Sri Amalendu Mohanty, Director, Alfa Transformers
- Mr. Swakantik Mishra, Faculty, EEE, CUTM, Bhubaneswar, Odisha

CUTM3089 Electrical Installation

Course Description:

The module has been designed to provide an understanding of the basics of Electrical and Electronic with an introduction to various electronic active & passive components and test equipment's. The participants would be acquainted with the Electrical Hazards along with workplace safety instructions and precautions that need to be taken while handling the Electrical and Electronic equipment and appliances along with electrical panels and Machinaries.

Learning Outcomes:

After completing this programme-

- The trainee will be exposed to implement the knowledge of the basics of electronics and electrical.
- The trainee will able to develop and understanding repairing and maintenance of industrial panels.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Power
Duration	4 months
Occupations	Installation, repair and Maintenance
Entry Qualification	ITI/Diploma/B. Tech/Applied Science
Minimum Age	16 Years
Aligned to (QP)	https://www.nqr.gov.in/sites/default/files/Repair%20and%20Maintenance%20of%20Home%20Appliances%20.pdf

- The trainee will expert on Identification to protective devices.
- The trainee will able to do industrial wring and maintenance.

Progression Pathways:

- Can join industry as installation technician and will progress further as Installation Supervisor, Panel Engineer and can reach up to Electrical Installation and maintenance manager.
- Can become entrepreneur in the related field.
- Can do Diploma or any Advance program in the same
- Can become a Quality Assurance person in Electrical Circuit design and installation after gaining experience

Industry Participation:

- TPCODL
- GT- Transformer

Expert Participation:

Mr. Radhagobinda Pradhan, Lecturer, Electrical/SoVET, CUTM Odisha, India

CUTM3090 Repair and Maintenance of Home Appliances

Course Description:

This is a skill oriented course to provide hands-on practice and project work in the study of electric house appliances and how to maintain efficiently those electric house appliances and repair it and those equipment's such as switch board, circuit breaker, fuse, inverter, battery and electrical/electronic appliances.

Learning Outcomes:

After completing this programme-

- Repair maintenance of the basic electrical and electronics appliances.
- Identification to protective devices.
- Repair and maintenance of the split AC and Refrigerators
- Able to do domestic wring and maintenance.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for Green Jobs (SCGJ)
Duration	4 months
Occupations	Design and Installation
Entry Qualification	ITI/Diploma/B. Tech/Applied Science/ Agriculture/BBA
Minimum Age	16 Years
Aligned to (QP)	Curriculum-Repair & Maintenance of Domestic Electronics Appliances_0.pdf

Progression Pathways:

- Can become entrepreneur in the related field
- Can do Diploma or any Advance program in the same
- Can become a Quality Assurance person in House wiring installation after gaining experience.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- Gram Tarang, Odisha
- Sky Rider, Odisha

Expert Participation:

Smitanjali Rout, PhD. Scholar EEE, CUTM Odisha, India

CUTM3091 Refrigeration and Air Conditioning

Course Description:

This is a skill-oriented course to provide hands-on practice and Project works in the study of Refrigeration and air Conditioning, its Installation, Maintenance and repairment etc.

Learning Outcomes:

After completing this programme-

- be able to know the Leak Detection, Air distribution, Wiring of control system etc.
- be able to Know about Fault finding and remedial measures of different types of AC.
- Implement the ideas gained to Install Window AC, Car AC etc.
- Implement activities like Refrigerant Filling, Compressor leakage detecting etc.

Scheme	Skill for Success (SFS)
NSQF Level	4
Duration	4 months
Sector	Electronics Sector Skills Council of India
Occupations	After Sales Service
Entry Qualification	12th Pass
Minimum Age	18Years
Aligned to (QP)	QP_ELEQ3105_Field-Engineer-RACW_v1-24-10-2017
Documents	http://courseware.cutm.ac.in/courses/refrigeration-and-equipment-engineering/

Progression Pathways:

- Can Join Industry as Technician.
- Can Do Diploma /advanced Programme related to same field.
- Can Become Entrepreneur In the related Field.
- Can Join Crafts Instructor Training Scheme in the trade as Instructor.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70 % in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Participation:

- Godrej Appliances

Expert Participation:

Satyabrata Nayak and Ashok Padhy

CUTM3092 Super Critical Co$_2$ Plant Operation

Course Description:

This is a skill oriented course to provide hands-on practice and project work in the study of solar photovoltaic (PV) technology, systems and it's equipment's such as solar modules/panels, charge controller, inverter, battery and electrical/ electronic/ mechanical appliances.

Learning Outcomes:

On completion of this course, students will be able to-

- Run the supercritical fluid extraction independently
- Troubleshoot problems related to the extraction and can engage themselves in research and development to get scientific publications and patents.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for Green Jobs (SCGJ)
Duration	4 months
Occupations	Design and Installation
Entry Qualification	ITI/Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	

Progression Pathways:

- Can join the industry as Plant Operation Manager and will progress further
- Can become an entrepreneur in the related field
- Can do Diploma or any Advance program in the Nutraceuticals, Extraction Program

Industry Participation:

- Gram Tarang Foods, Odisha

Expert Participation:

Dr. Preetha Bhadra, Assistant Professor, Department of Biotechnology, M S Swaminathan School of Agriculture, CUTM, Odisha.

CUTM3095 Business Plan Preparation

Course Description:

A Business Plan is a written document prepared by the entrepreneur that describes all the relevant external and internal elements involved in starting a new venture. A well written Business Plan is the key to the Success of an Organization hence it is very important to understand a Business Plan. A Business Plan is submitted to the bankers and the investors for the purpose of obtaining funds for the business. A Business Plan also explains the timings relating to the completion of the project. The objective of the course is to familiarize the participants with the various aspects of entrepreneurship as well as to explain and train with the basics relevant for the preparation of a Business Plan.

Learning Outcomes:

After completing this programme, participants will be able to:

- Identify the various types of entrepreneurship and businesses
- Identify entrepreneurial opportunities
- Formulate a basic business plan

Scheme	Skill for Success (SFS)
NSQF Level	3
Sector	Management, Entrepreneurship and Professional Skills
Duration	4 months
Occupations	Entrepreneur
Entry Qualification	No Formal Qualification
Minimum Age	20 Years
Document	http://courseware.cutm.ac.in/courses/certificate-course-in-business-plan/

- Identify suitable sources of funding such as formal schemes, loansetc. for the business
- Identify skills and abilities to be an entrepreneur

Progression Pathways:

- Can
- Can become entrepreneur in the related field
- Can do Diploma or any Advance program in the same

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Expert Participation:

Dr. Susanta Kumar Mishra, Professor, SoM,CUTM,Odisha,India

# CUTM3098 Composite Fabrication Practice

Course Description:

This is a skill-oriented course to provide hands-on practice and project work in the field of Composite Design, Manufacturing and Characterizations.

Learning Outcomes:

After completing this programme- The trainee will-

- know composite materials, synthesis, characterization, properties and applications.
- be able to develop and develop an understanding of perspective on SDGs.
- be an expert on the designing of different composite moulds by Catia.
- implement activities and organize resources to meet desired outcomes.
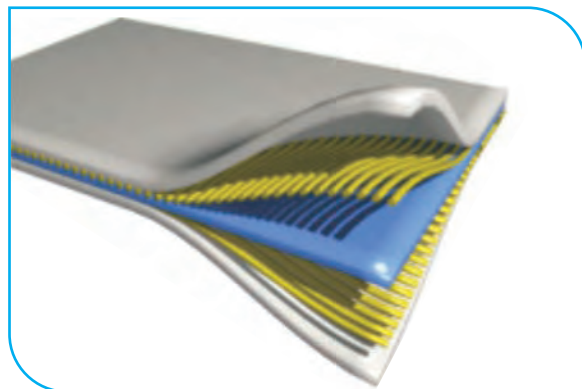
Scheme	Skill for Success (SFS)
NSQF Level	5
Sector	Aerospace and Aviation
Duration	4 Months
Occupations	Composite manufacturing technician
Entry Qualification	BSc in Physics/Chemistry, BTech
Minimum Age	19

Progression Pathways:

- Can join the industry as Composite Manufacturing Trainee and will progress further as a Composite Design engineer then to Composite Project manager.
- Can become an entrepreneur in the related field.
- Can develop skills on various techniques to fabricate composite materials and their testing

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- Mechem Pvt.Ltd

Expert Participation:

Dojalisa Sahu and Prajnaparamita Debata

CUTM3100 Farm Appliances Operation

Course Description:

This is a skill-oriented course to provide hands-on practice and repair & maintenance work of farm machinery like; M.B. Plough, Disc Plough, Rotavator, Cultivator, SCFD, Thresher, Reaper, Transplanter, Combine Harvester & Power Tiller.

Learning Outcomes:

After completing this programme -

- The trainee will be exposed to hands-on training on different tractor operated farm machinery.
- The trainee will able to understand the need of repair and maintenance in farm machinery.
- The trainee will expert on operation of Tractor operated machinery like; M.B. Plough, Disc Plough, Rotavator, Cultivator, SCFD, Thresher & Reaper, Transplanter, Combine Harvester & Power Tiller.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Agriculture Skill Council of India
Duration	4 months
Occupations	Farm machinery operation
Entry Qualification	10th /ITI/Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	https://nsdcindia.org/sites/default/files/AGRQ 1101_Tractor_Operator_v1_01.05.2018.pdf

- The trainee will implement activities and organizing resources to meet desired outcomes.

Progression Pathways:

- Can work as an operator of farm machinery.
- Can become entrepreneur in the related field by giving custom hiring of farm machinery.
- Can do Diploma or any Advance program in the same
- Can become a Farmer's trainer after gaining experience

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- Odisha Farm Machinery Research and Development Centre (OFMRDC) BBSR, Odisha
- Northern Region Farm Machinery Training & Testing Institute, Hisar (Haryana). Govt. of India Ministry of Agriculture & Farmers Welfare

Expert Participation:

Dr. Shekhar Kumar Sahu, Assistant Professor, FMP (Ag. Engg.), SoABE, CUTM Odisha,India

Miss Sharmistha Sahu, Assistant Professor, FMP (Ag. Engg.), SoABE, CUTM Odisha,India

CUTM3102 Solid Waste Management

Course Description:

This is a skill-oriented course to provide hands-on practice and project work in the study of solid waste management. The main project work of this course includes the collection and segregation of solid waste, reuse of solid waste in different ways.

Learning Outcomes:

After completing this programme-

- The trainee will be exposed to current solid waste management requirements, issues, challenges and debates.
- The trainee will be able to develop and understanding of perspective on SDGs.
- The trainee will be an expert in reusing and repair of solid waste.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for Green Jobs, Telecom Sector Skill Council
Duration	4 months
Occupations	Solid Waste Collection
Entry Qualification	10th Pass or Higher
Minimum Age	Above 16 years
Aligned to (QP)	SGJ/Q6103

- The trainee will implement activities and organizing resources to meet desired outcomes.

Progression Pathways:

- Can become entrepreneur in the related field.
- Can do Diploma or any Advance program in the same.
- Can become a Quality Assurance person in waste management sector after gaining experience.

Industry Participation:

Expert Participation:

Satyabrata Nayak and Ashok Padhy

CUTM3103 Bio-fertilizer Preparation

Course Description:

This is a skill oriented course to impart hands on training on the skills associated with Bio-fertilizer organisms isolation, production and application.

Learning Outcomes:

After completion of this said course:-

- Students will be acquiring the technical knowledge in Bio fertilizer production technology

- Ability to distinguish the types of biofertilizers and methods of application in farmers field

- Development of integrated management for best results using nitrogenous and phosphate biofertilizers.

Scheme	SkillforSuccess(SFS)
NSQF Level	4
Sector	Agriculture and Allied
Occupations	Agri entrepreneur
EntryQualification	ITI/Diploma/B.Tech/Applied Science/Agriculture
MinimumAge	18 Years
Aligned to(QP)	NA

Progression Pathways:

- Skilled practitioner

- Consultant/Agri entrepreneur

- Establish in bio fertilizer industry.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- Every trainee should score a minimum of 70% in the overall assessment.

- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

Regional Centre of Organic Framing, Bhubaneswar, India.

Expert Resource Person:

Dr.ShyamMajumdar .Agri Development Officer, West Bengal, India

CUTM3104 PCB Designing & Fabrication

Course Description:

This is a basic course for designing of PCB using software. PCB (Printed Circuit Board) designing is an integral part of each electronics product and this program is designed to make students capable to design their own projects PCB up to industrial grade.

Learning Outcomes:

After completing this programme-

- Students can explore different aspect of Printed Circuit Board Design and fabrication.
- Students can learn various types of PCBs. Schematic Design. ...
- Placement Rules, Routing Techniques for Single Sided Board.
- Post Processing of design and Fabrication documents.

Scheme	Skill for Success (SFS)
NSQF Level	4
Duration	4 Months
Sector	Electronics Sector Skills Council of India (ESSCI)
Occupations	Design and Operation
Entry Qualification	Diploma/B. Tech/M. Tech
Minimum Age	18 Years
Aligned to (QP)	https://nqr.gov.in/sites/default/files/QP-PCB%20Design%20Engineer.pdf
Documents	

Progression Pathways:

- Can join industry as solar project helper and will progress further as solar PV installer then to solar PV engineer and can reach up to Solar PV project manage.
- Can become a Quality Assurance person in solar PV installation after gaining experience.
- Can do Diploma or any Advance program or course in the same.
- Can become entrepreneur in the related field.

Assessment Process:

- The assessment agencies should have an expert to maintain the assessment process with state-of-the-art technology deployment and make its online/offline access to SSC (SCGJ), NSDC, India.

Learning Record:

The trainee will submit a Practice/Project/Observation/Learning record after each class/session.

Participation:

Expert Participation:

Subrat Kumar Pradhan, Assistant Professor, ECE, SOET, CUTM Odisha, India

CUTM3015 Introduction to Blockchain

Course Description:

This is a skill-oriented course to provide knowledge on how Blockchain works, what is Mining, How Blockchain is used in cryptocurrency, how data certificates, Learning Reflection can uploaded on blockchain.

Learning Outcomes:

After completing this programme-

- The trainee will know how blockchain works
- The trainee will able to upload their certificates learning reflection on blockchain
- The trainee will able to know how cryptocurrency mining works and even they can do as well.
- The trainee will complete several online courses participate into blockchain hackathon which will improve their skills.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	IT-ITeS Sector Skill Council
Duration	4 months
Occupations	Developer
Entry Qualification	Diploma/B. Tech/Applied Science
Minimum Age	16 Years
Aligned to (QP)	https://www.nsdcindia.org/nos-data-export-excel/24

Progression Pathways:

- Can become entrepreneur in the related field.
- Can do Diploma or any Master program in the same.
- Can become a open YouTube channel and share the knowledge on blockchain Technology.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- Every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Expert Participation:

Siddharth Kumar, CUTM Odisha, India

CUTM3106 Introduction to Nutraceuticals

Course Description:

This is a skill oriented course to provide hands-on practice and project work in the study of the advantages of functional foods over conventional Medicine to avoid potential side-effects, dietary supplements, distinguish between food, functional food, and supplements.

Learning Outcomes:

- To understand Functional foods and their effects on human health
- To understand the role of antioxidants, polyphenols, omega-3 fatty acids, to prevent different physiological disorders.
- To Understand the importance of personalized food with respect to genetics.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for Green Jobs (SCGJ)
Duration	4 months
Occupations	Design and Installation
Entry Qualification	ITI/Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	

Progression Pathways:

- Working at Nutraceutical opens the door to incredible opportunities. Several of our employees started their careers here and have moved up the ranks answering their calling along the way. Every, single one of us is guided by the same north star—the desire to make amazing products that support people's pursuit of health, wellness and happiness.
- Can do Diploma or any Advance program in the same
- Can become a Quality Assurance person in Solar PV installation after gaining experience

Industry Participation:

- Nutrify India,
- Gram Tarang Foods

Expert Participation:

Dr. Preetha Bhadra, Assistant Professor, Department of Biotechnology, M S Swaminathan School of Agriculture, CUTM, Odisha

CUTM3108 Introduction to Computational Biology

Course Description:

This is a skill oriented course to provide hands-on practice and project work in the computational biological study involving different in silico techniques, including database mining, data retrieval, data curation, annotation, and structural characterization.

Learning Outcomes:

After completing this programme-

- To learn the basic concepts of Bioinformatics and its significance in Biological data analysis.
- To inculcate the advanced tools and databases of genomics and its applications.
- To obtain the hands-on-training in in silico basics related to functional genomics.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for Green Jobs (SCGJ)
Duration	4 months
Occupations	Sequence Analysis
Entry Qualification	Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	18 Years
Aligned to (QP)	

Progression Pathways:

- Natural
- Can join industry as a Sequence analyst or Bioinformaticianand will progress.
- Can become entrepreneur in the related field
- Can do Diploma or any Advance program in the same

Industry Participation:

- Department of Biotechnology, Phytopharma Lab, CUTM, Odisha
- BIOVIA

Expert Participation:

Dr. Satyabrata Nanda, Assistant Professor, Department of Biotechnology, M S Swaminathan School of Agriculture, CUTM, Odisha

CUTM3109 Product Life Cycle Management Through Gate Process

Course Description:

At the most fundamental level, product lifecycle management (PLM) is the strategic process of managing the complete journey of a product from initial ideation, development, service, and disposal. Put another way, PLM means managing everything involved with a product from cradle to grave.
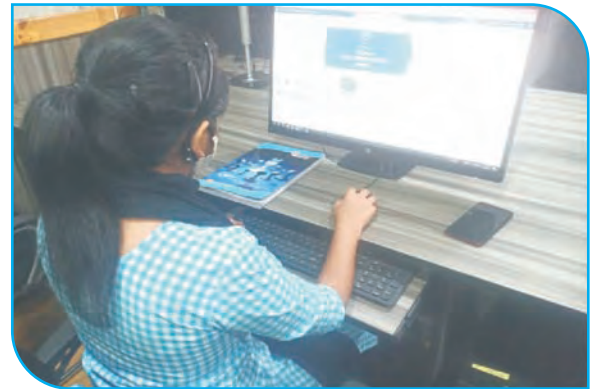
Learning Outcomes:

After completing this program -

- Describe the state-of-the art and important trends in the area of IT support for product realization.
- Describe the core functionality of different engineering IT tools, specifically in Catia, Dymola and Simulia.
- Evaluate company-specific needs for PLM solutions and design PLM solutions for the Company's product lifecycle.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for Green Jobs (SCGJ)
Duration	4 months
Occupations	Design and Installation
Entry Qualification	ITI/Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	..\Desktop\Product life cycle management through gate process.pdf

- Be able to Apply Systems Engineering principles to support the implementation of PDM
- Evaluate and use engineering tools and PDM systems in integrated PLM solutions
- Model, analyze and Design key product information management processes such as engineering change management, product structure management and configuration.

Progression Pathways:

- Can join industry as Project Executive.
- Can become entrepreneur in the related field
- Can do Diploma or any Advance program in the same
- Can become a Quality Assurance person in PLM after gaining experience

Industry Participation:

Aerospace, Automotive, Consumer Products, Energy, Infrastructure, Medical & Pharmaceutical.

Expert Participation:

Sri Mukundjee Pandey, Assistant Professor, Mech/Aero, Simulia CUTM Odisha, India
Sri Jagannath reddy, GTM, Electrical, System Engineering
Sri Avinash Singh, GTM, Mech, Catia

CUTM3110 New Material Development with Biovia

Course Description:

Computer-Aided prediction of material properties helps in predicting the behavior of a material in different applications. This is quick calculation method which helps the experimentalist to save time and make experiments more economical. With the significant rise in the availability of information on molecules, one can also design new types of materials for a specific use. This course helps the learner to gain knowledge on the computational method.
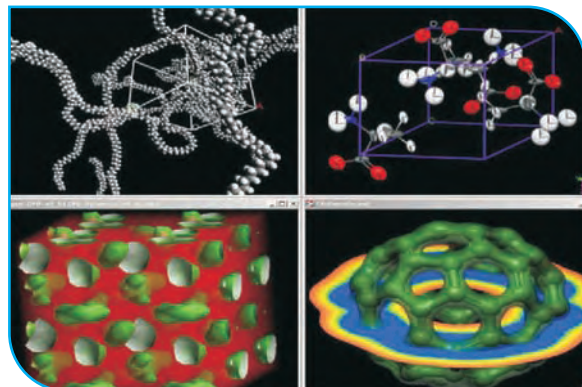
Learning Outcomes:

After completing this programme the learner will

- Be able to appreciate ethe importance of computational research in concedes matter
- Be able to design and develop various structure of bulk and nano materials
- The trainee will implement activities and organizing resources to meet desired outcomes.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	
Duration	4 months
Occupations	Research and development
Entry Qualification	Diploma/B. Tech/Applied Science
Minimum Age	18 Years
Aligned to (QP)	

Progression Pathways:

- Can join research industry as a research scholar or research associate
- Can get job in various research labs
- Can get job in materials science based industry

Industry Participation:

- Dassault systems

Expert Participation:

Sri Dipankar Bhattacharya, Professor, CUTM Odisha.

CUTM3111 Spectral Image Processing using Python

Course Description:

This is a skill-oriented course to provide hands-on practice and project work in the study of python and process the digital satellite image using python coding. Spectral imaging refers to a group of analytical techniques that collect spectroscopic information and imaging information at the same time. It relies on using tailored mathematical algorithms in order to manipulate and enhance data captured through the spectral imaging process. These huge data sets can be analyzed quickly using Python programming language.
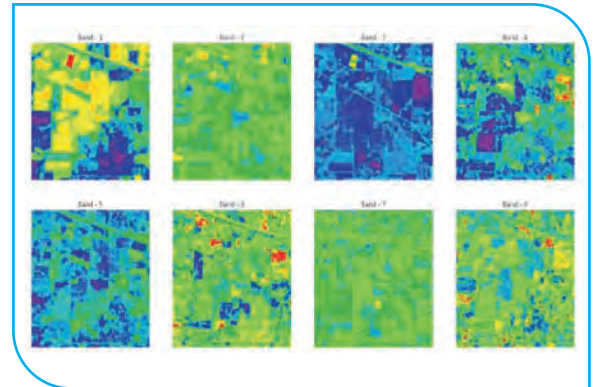
Learning Outcomes:

After completing this program-

- Students will gain knowledge of basic concepts in remote sensing using python.
- Students will gain knowledge of applications of different satellite imagery, image classification techniques, image analysis and interpretation.
- To study the spectral python tools for processing Hyperspectral images.

Scheme	Skill for Success (SFS)
NSQF Level	4
Duration	4 Months
Sector	Skill Council for Green Jobs (SCGJ)
Occupations	Spectral Image Processing using Python
Entry Qualification	Diploma/B. Tech/Applied Sci ence/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	

Progression Pathways:

- Can join industry as a GIS analysis / GIS Engineer / Researcher
- Can do higher study in the same discipline
- Can become entrepreneur in the related field.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- Mr. Anjana Mallik, Director, Raj Subha Tech Solution

Expert Participation:

Dr. Prafulla K Panda, Associate Professor, HOD, Dept. of Civil Engineering, PKD campus

CUTM3112 Satellite Data Processing

Course Description:

This is a skill-oriented course to provide hands-on practice the study of digital satellite image. Satellite Image Processing is an important field in research and development and consists of the images of earth and satellites. Firstly, the photographs are taken in digital form and later are processed by the computers to extract the information. Statistical methods are applied to the digital images and after processing the various discrete surfaces are identified by analyzing the pixel values. The satellite imagery is widely used to plan the infrastructures or to monitor the environmental conditions or to detect the responses of upcoming disasters.
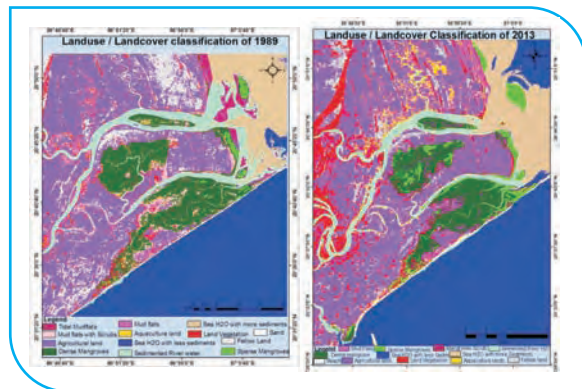
Learning Outcomes:

After completing this program-

- Students will gain knowledge of basic concepts of remote sensing.
- Students will gain knowledge of applications of different satellite imagery, image classification techniques and image analysis and interpretation.

Scheme	Skill for Success (SFS)
NSQF Level	4
Duration	4 Months
Sector	Skill Council for Green Jobs (SCGJ)
Occupations	Satellite Data Processing
Entry Qualification	Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	

Progression Pathways:

- Can join industry as a GIS analysis / GIS Engineer / Researcher
- Can do higher study in the same discipline

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- Mr. Anjana Mallik, Director, Raj Subha Tech Solution

Expert Participation:

Dr. Kamal Kumar Barik, Associate Professor, HOD, Dept. of Civil Engineering

CUTM3113 Working with Graphene and Carbon Fibre

Course Description:

This is a skill-oriented course to provide hands-on practice and project work in the fabrication of different graphene and carbon-based materials (Graphene, Graphene Oxide, Carbon fiber and their composites) and apply these materials for various application in the field of energy, environment.
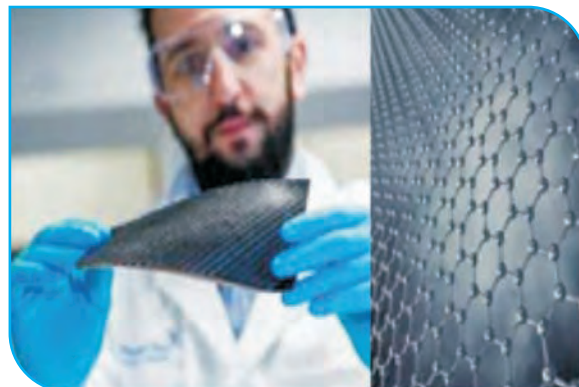
Learning Outcomes:

After completing this programme-

- Students will know the synthesis procedure of graphene and carbon fibre based materials.
- Students will be well equipped to design and develop carbon-based materials for specialized applications.

Progression Pathways:

- Can join industry as in-charge material testing/material coordination manager in materials manufacturing industry.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Automotive
Duration	4 months
Occupations	Design and Installation
Entry Qualification	Diploma/B. Tech/Applied Science
Minimum Age	21 Years
Aligned to (QP)	https://nsdcindia.org/sites/default/files/ASC Q6504_Incharge_Material_Testing_v1_21_09_2018.pdf https://nsdcindia.org/sites/all/themes/ibees/images/download-icon.jpg

- Can apply job in carbon-based materials manufacturing based industry
- Can become entrepreneur in the related field
- Can do research or any advance program in the same

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- Graphene Services Pte Ltd, Bengaluru, Karnataka-560080
- National consultant and testing laboratory, Delhi

Expert Participation:

Sri Shraban Kumar Sahoo, Assistant Professor, Dept. of Chemistry, CUTM Odisha, India

CUTM3114 Adobe Tools and Illustrations

Course Description:

This is a skill-oriented course to enhance the skills of Using adobe tools on the computer, student will learn how to use Adobe creative suite to create an impressive design. Student will move between Image retouching to vector graphic Designs. Students will learn Typography proprieties and Vector art in depth.

Learning Outcomes:

After completing this programme-

- The trainee will develop competency in designing principles.
- The trainee will able to develop a sense of aesthetics.
- The trainee will be an expert in image editing software like Adobe Illustrator and Adobe Photoshop.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	IT-ITeS
Duration	4 months
Occupations	Design and Illustrations
Entry Qualification	+2 in any discipline
Minimum Age	18 Years
Aligned to (QP)	https://mescindia.org/images/pdf/graphic-design/MES%20Q%200601_Graphic%20Designer.pdf

Progression Pathways:

- Can join industry as a designer.
- Can become entrepreneur in the related field
- Can do Diploma or any Advance program in the same
- Can become a Quality Assurance person in Adobe illustrator and Photoshop.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- Publication House, advertising agencies, print Media production House.

Expert Participation:

Mr Saban Kumar Maharana, Assistant Professor, CUTM, Odisha, India

CUTM3115 Digital Painting

Course Description:

This is a skill-oriented course to provide hands-on practice and project work on camera operation. In this course a student will study the techniques of camera operation, lighting techniques and photography composition.

Learning Outcomes:

After completing this programme-

- The trainee will gain knowledge on graphics designing
- The trainee will able to develop the sense of digital painting
- The trainee will be an expert in concept art, matte art and character design.
- The trainee will be an expert in story boarding.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Media / Entertainment Industry
Duration	3 months
Occupations	Graphics Designer, Concept Artist, Matte Artist, Back Ground Artist
Entry Qualification	+2 in any discipline
Minimum Age	18 Years
Aligned to (QP)	https://mescindia.org/images/pdf/graphic-design/MES%20Q%200601_Graphic%20Designer.pdf

Progression Pathways:

- Can join media industry as a graphics designer.
- Can work as back ground artist or character designer in film and entertainment industry.
- Can be a creative artist in any production house

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Expert Participation:

Mr. Saban Kumar Maharana, Assistant Professor, CUTM, Odisha, India

CUTM3120 Computer Installation & Maintenance

Course Description:

This course is about the basics of electrical and electronic components related to the hardware and networking system. It teaches to assemble and repair desktop PC with all its internal components, along with making the learner to be able to install different types of operating system and all other application software, customization of OS, updating device driver, setting firewall security, junk file removal, data backup and data recovery techniques. Assembling and repairing Laptop PCs and its internal hardware components is also a part of this course.

Learning Outcomes:

After completing this program trainees will be can able to:-

- Assemble and repair Laptop and Desktop Computer with all its hardware components.
- Install and customize different Operating System and all other application software.
- Perform the operations of office package (word, excel, power point).

Scheme	Craftsmen Training Scheme (CTS)
NSQF Level	4
Sector	IT & ITES
Duration	One year
Occupations	Design and Installation
Entry Qualification	Passed 10th Class examination with Science and Mathematics or its equivalent
Minimum Age	14 years as on first day of academic session.
Aligned to (QP)	https://www.cstaricalcutta.gov.in/images/CTS%20CHNM_CTS_NSQF-4.pdf

- Install Printer, Scanner and troubleshoot their faults.
- Set up and configure Networking System using various network devices.
- Browse internet and communicate through email.

Progression Pathways:

- Can join industry as Technician and will progress further as Senior Technician, Supervisor and can rise up to the level of Manager.
- Can become Entrepreneur in the related field.
- Can join Crafts Instructor Training Scheme (CITS) in the trade for becoming an instructor in ITIs.

Assessment Process:

- The
- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Expert Participation:

Biswaranjan Mishra, Adjunct Faculty, CUTM Odisha, India

Trainer, DGE & T, Skill Assessor

CUTM3121 3D Game Art

Course Description:

This course has been created specifically to teach you the fundamentals of 3D art. It's a project-based course designed to teach you all the basics you need to know to create 3D art in practically any 3D software. We'll start with a little bit of theory, then dive into looking at 3D software, we'll install and explore our software and set it up to make learning as easy as possible. For this particular course we will be using powerful software open source package Blender. This means that there is no additional cost for doing this course, everything you need is included in Blender.

Learning Outcomes:

- The skills to model high quality 3D models
- Add shaders and textures to your 3D models
- Add realistic and optimized lighting to your 3D scenes
- Learn the fundamentals of digital sculpting in Blender
- Learn the fundamentals of Texture Painting in Blender
- Render and Post-Produce your final images in an artistic way

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	3D Game Art
Duration	4months
Occupations	3DDesignandAnimation
EntryQualification	10th/12th/B.Tech/Diploma/M.Sc/B.Sc/MBA
MinimumAge	18 Years
Document	http://courseware.cutm.ac.in/courses/skill-course-3d-artist-for-game/
Alignedto(QP)	https://api.worldskills.org/resources/download/12392/149 52/15880?l=en

CourseObjective:

- 3D modeling, Texturing and Basics of Animation in Blender
- 3D Assets and Design for Game and 3D animated video
- Lightning,Texturing,Post-processingandAnimation
- Learn to Create or Edit Props, Design Levels, Apply Material and Simple Animations usingBlender
- Create Interior or 3D Assets for photo-realistic images and videos

Progression Pathways:

- Can join in industry as 3D Artist/ 3D Model Designer
- Can join in Gaming/Film Industry as VFX Editor
- Can do Diploma, Master or any Advance program or course in the same

Learning Record:

- The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- GT-Tech (Bhubaneshwar), GTET (Bhubaneshwar), Hid's Technologies, (Bhubaneshwar)

Expert Participation:

Mr.SandeepKumar,UnityCertifiedTrainer and 3D Artist,CUTM,Odisha,India.

CUTM3122 Drug Design Using Biovia Discovery Studio

Course Description:

Computer-Aided drug design accelerates and economizes drug discovery and drug manufacturing processes; it an effective strategy. With the significant rise in the availability of information on small molecule and biological macromolecule, the efficiency of computer-aided drug discovery has been enhanced. It is being extensively applied to almost every phase in drug discovery and manufacturing activities, such as detecting targets, validation, lead discovery, and optimization & preclinical tests.
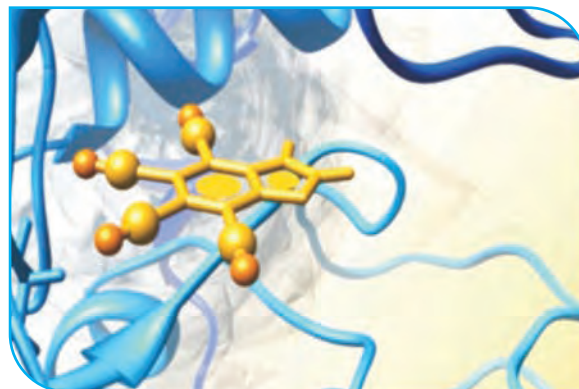
Learning Outcomes:

After completing the course the students will

- Be able to use several modules of Biovia Material studio
- Be able to develop the structure of a nano, bulk, polymer and composite
- Be able to calculate several properties of materials

Scheme	Skill for Success (SFS)
NSQF Level	3
Sector	Skill Council for Green Jobs (SCGJ)
Duration	4 months
Occupations	RESEARCH AND DEVELOPMENT
Entry Qualification	B.Pharm./B. Tech/Applied Science/ Agriculture
Minimum Age	20 Years
Aligned to (QP)	190410055749.pdf (lsssdc.in)

Progression Pathways:

- Can join the industry as Laboratory Assistant/Technician and will progress further as Research Assistant then to Scientist and can reach up to Research and Development manager.
- Can become an entrepreneur in the related field.
- Can do Diploma or any Advance program in the same.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- AstraZeneca India - Research-Based BioPharmaceutical Company, Bangalore, India
- Glenmark Pharmaceuticals Limited, Andheri (E), Mumbai

Expert Participation:

Cinmaya Chidananda Behera, Assistant Professor, SoPLS, CUTM Odisha, India

Dr. Bhisma Narayan Ratha, Assistant Professor, Phytopharmaceuticals, CUTM Odisha, India

CUTM3123 Ophthalmic Lens and Spectacle Manufacturing Techniques

Course Description:

Optical dispensing is a subspecialty of optometry which includes all procedures from the time the glass prescription is presented to the optician till the patient receives the pair of glasses satisfactorily. A trained optician is required for the management of avoidable blindness by means of modern scientific dispensing. This course offers advanced training in optical dispensing and trains the optical technicians in a well-equipped optical training centre. The objective of this course is to develop the optician's skills and knowledge for quality vision care services

Learning Outcomes:

After completing this programme-

- Measure the lens power by lensometry
- Troubleshoot the problematic spectacles
- Inspect the lens defects
- Guide the patients to choose suitable frames and appropriate lenses
- Do lens glazing by manual process
- Do the frame measurements, centering and decentering

Scheme	Skill for Success (SFS)
NSQF Level	3
Sector	Skill Council for Health Care
Duration	6 months
Occupations	PRODUCTION AND MANUFACTURE
Entry Qualification	B. OPTOMETRY
Minimum Age	20 Years
Aligned to (QP)	

Progression Pathways:

- The course is developed aimed at giving the students hands-on practical experience in lens and spectacle manufacturing and fitting techniques. It will help a student after graduating to run their own optical setup and fulfill their entrepreneurship dream.

Industry Participation:

- Essilor India Private Limited- An ophthalmic lens and instrument manufacturing company.

Expert Participation:

Mr. Ranitava Banerjee, Assistant Professor, Department of Optometry, SoPAHS, CUTM, Bhubaneswar

Mr. Arup Saha, Assistant Professor, Department of Optometry, SoPAHS, CUTM, Bhubaneswar

CUTM3124 Medical Diagnostic Techniques

Course Description:

This is a skill-oriented course to provide hands-on practice and project work in the study of various diagnostic techniques which includes routine investigation, the operation of medical laboratory equipment and its installation, calibration, quality control.

Learning Outcomes:

Upon the completion of the course student will be able to:

- Able to collect the pathological specimen.
- They can Preserve and process the pathological sample.
- Able to handle all laboratory instruments.
- Able to detect the abnormal conditions.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Healthcare Sector Skill Council
Duration	4 months
Occupations	Laboratory Technician
Entry Qualification	+2 Science/B.Sc.
Minimum Age	18 Years
Aligned to (QP)	NCO-2004/3221.1 https://nsdcindia.org/sites/default/files/ QP_HSS-Q0301_Medical-Laboratory-Technician.pdf

Progression Pathways:

- Can join as an Assistant Lab Technician in any hospitals, nursing homes, private/government laboratories and research centers.
- Can work as an Assistant Lab Technician in any Pharma industries, Life Science laboratories.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct the assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- Collaboration with 21 numbers of Hospital inside and outside of Odisha. Some of them: Community Diagnostic Centre, SUM Hospital, Apollo Hospital, AMRI Hospital, AIIMS Hospital, SCBMCH etc.

Expert Participation:

Susmita Chakrabarty, Assistant Professor, MLT/CMB, CUTM Odisha, India

CUTM3125 Introduction to Aquaponics

Course Description:

This is a skill oriented course to provide hands-on practice and project work in the study of growing plants without soil and growing fish in captivity that means which combines aquaculture and hydroponics cultivation, i.e. fish farming and soil independent food production in a circulatory system with an aim of recycling nutrients from fish farming waste waters.

Learning Outcomes:

After the completion of this course each student will be able to successfully:

- Gain an overview of aquaponics, and understand system components and principles of operation.
- Understand the importance of the connection between fish waste, nitrogen conversion, and water quality.
- Learn about the plant and fish components of aquaponics.
- Construct and maintain a mini Aquaponics system in the laboratory.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for Green Jobs (SCGJ)
Duration	4 Months
Occupations	Technical Assitant in Auaponic unit
Entry Qualification	12th & B.Sc. Passed
Minimum Age	18 Years
Aligned to (QP)	https://asci-india.com/nos-panel/uploadPDF/QP-Aquaculture%20Technician67faff79d74e99084adcad33ddfc3660.pdf

- Develop workplace skills including: making critical observations, accurate data collection and record keeping, responsibility and teamwork.

Progression Pathways:

- Know the vocabulary of aquaponics,
- Obtain and demonstrate technological knowledge and understanding of aquaponic systems.
- Be able to grow fish and vegetables in aquaponics.
- Assess the value of aquaponics in terms of ecological, social and economic importance.
- Be able to design and construct a simple aquaponic unit.

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- Aquaponics Madhavi Firm in Bangalore
- Grow Aquaponics Pvt. Ltd. Bangalore

Expert Participation:

Dr. Yashaswi Nayak, Associate Professor, Zoology, CUTM Odisha, India

CUTM3126 Polyhouse Automation

Course Description:

Labor in some farming branches can take up to 50% of the overall cost. The labor shortage makes this situation even more dramatic. Using robots for seeding, harvesting, watering, and monitoring decreases the need to hire employees for numerous monotonous tasks. Agriculture is becoming more eco-friendly.

Learning Outcomes:

After completing this programme student will-

- learn Agricultural vehicle robots and infotronic systems
- learn Specific agricultural production systems, including those related to field crops, cotton, orchards and vineyards, and animal housing and production
- learn Automation relative to specific inputs in agricultural production systems, such as nutrition management and automation, automation of pesticide application systems, and automated irrigation management with soil and canopy sensing
- learn Liability issues with regard to surrounding awareness and worksite management

Scheme	Skill for Success (SFS)
NSQF Level	5
Duration	4 Months
Sector	Agriculture Skill Council of India (ASCI)
Occupations	Design, Installation and Operation
Entry Qualification	ITI/Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	AGR/Q1004
Documents	AGRQ1004_Horticulturist_Protected_Cultivation _v1.0_31_03_2021.pdf (nsdcindia.org)

- explore Postharvest automation—perhaps the most advanced component of agricultural production in terms of automation and an important factor in global agriculture

Progression Pathways:

- Know
- Agriculture Entrepreneur
- Train farmers, adopt latest technologies in order to meet the necessities.
- Create a business model that can be monitored and managed at a single point

Assessment Process:

- The assessment agencies should have an expert to maintain the assessment process with state-of-the-art technology deployment and make its online/offline access to SSC (SCGJ), NSDC, India.
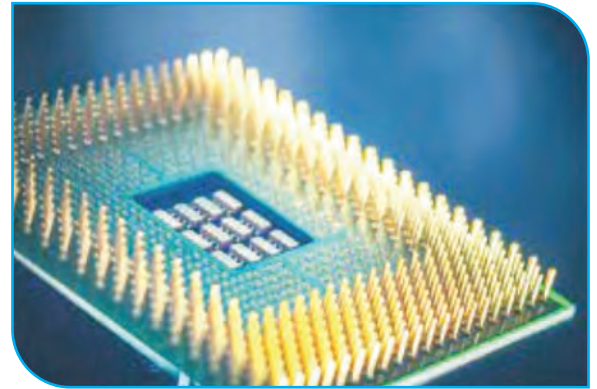
Expert Participation:

Subrat Kumar Pradhan, Assistant Professor, ECE, SOET, CUTM Odisha, India

CUTM3127 Development of Processor (Shakti)

Course Description:

This is a skill oriented course to provide hands-on practice and project work in the area of design and development of processors through BSV Programming

Learning Outcomes:

After completing this programme-

- The trainee will be able to describe processor architecture
- The trainee will able to design processor using Blue Spec Verilog Programing.
- The trainee will expert on design and verification of processor using BSV Programming
- The trainee will Perform communication between I/O devices

Progression Pathways:

- Can join industry as SOC design engineer
- Can become a microprocessor design specialist
- Can do higher studies in the area of VLSI design

Scheme	Skill for Success (SFS)
NSQF Level	Centurion Skill Framework level
Sector	
Duration	3 months
Occupations	Design and Implementation
Entry Qualification	B. Tech
Minimum Age	16 Years
Aligned to (QP)	Centurion Skill Framework level

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Industry Participation:

- Incore Semiconductor, India

Expert Participation:

Dr. Chandra Sekhar Dash, Assistant Professor, Dept. of ECE, CUTM, Odisha

Mr. Satyanarayan Padhy, Assistant Professor, Dept. of ECE, CUTM, Odisha

CUTM3128 Spectroscopy for Analysis of Natural and Synthetic Compounds

Course Description:

This course is designed provide hands-on practice and to enable the students to analyze and characterize various small to complex organic molecules either obtained from natural sources or synthesized in laboratory.

Learning Outcomes:

After completing this program-

- Students will learn the basic concepts of different spectroscopic methods and their significance in structural analysis.
- They will be able to determine structures of organic molecules by applying these spectroscopic methods
- Students will obtain hands-on-training in sample preparation, scanning process and analyzing the spectra.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Pharmaceutical and chemical manufacturing companies
Duration	4 months
Occupations	Research and Development
Entry Qualification	B.Sc/M.Sc Chemistry/Organic Chemistry/Analytical Chemistry
Minimum Age	18 Years
Aligned to (QP)	

Progression Pathways:

- Can join chemical manufacturing industry and pharma industry as laboratory technicians.
- Can further learn more advanced applications in structure analysis of organic compounds

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

Pharmaceutical industry, Chemical manufacturing industries

Expert Participation:

Dr. Rosy Mallik, Assistant Professor, SoAS, CUTM Odisha, India

CUTM3129 Extraction Technologies

Course Description:

This is a skill oriented course to provide hands-on practice and project work in the study of different extraction techniques of different medicinal plants, spices and other materials

Learning Outcomes:

On completion of this course, students will be able to

- Run the different extraction independently

- Troubleshoot problems related to the extraction and can engage themselves in research and development to get scientific publications and patents.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Skill Council for Green Jobs (SCGJ)
Duration	4 months
Occupations	Design and Installation
Entry Qualification	ITI/Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	Microsoft Word - Essential Oil Extractor_Revised QF template (nqr.gov.in)

Progression Pathways:

- Can join industry as Phytopharma and Extraction industry helper and will progress further

- Can become entrepreneur in the related field

- Can do Diploma or any Advance program in the same

- Can become a Quality Assurance person in Phytopharma Lab and Gram tarang Foods after gaining experience

Industry Participation:

- Department of Biotechnology, Phytopharma Lab, CUTM, Odisha

- Gram Tarang Foods

Expert Participation:

Dr. Preetha Bhadra, Assistant Professor, Department of Biotechnology, M S Swaminathan School of Agriculture, CUTM, Odisha

CUTM3130 Gamified DIY Kits Using Lasers

Course Description:

This is a skill-oriented course to provide hands-on practice in making small useful instruments using laser. This will help students to design and develop prototypes by themselves.

Learning Outcomes:

After learning the course, the students will

- Gather awareness about applications of laser in industry, medicine and entertainment.

- Understand the safety parameters while working with Lasers

- Get hands on experience of making instruments/prototypes for laser applications

Progression Pathways:

- Can make use of Laser sources in various fields like sensors and other instruments

- Can become entrepreneur in the related field

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	ESSI -Electronics Sector Skill Council
Duration	4 months
Occupations	Prototype designing with laser
Entry Qualification	ITI/Diploma/B. Tech/Applied Science/ Agriculture
Minimum Age	16 Years
Aligned to (QP)	

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment on each aspects and every trainee should score a minimum of 70% in the overall assessment.

- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Expert Participation:

Padmaja Patnaik

CUTM3131 VR Assets Development

Course Description:

This course aims at helping anyone willing to learn Unity to create VR experiences. No previous programming experience is required, and most of the principles covered in the course will help future programmers wrap their head around programming basics. It features a self-learning approach. Every topic comes in on a need-to-know basis. Most of the course examples can be done with the simplest hardware. Whether you want to experiment with a simple Android or iPhone cardboard, add a remote game controller, or go for pro

Learning Outcomes:

- Creates immersive VR Experiences with panoramic video
- Creates interactive head's up 3D user interfaces
- Adds support for Game Controllers and Google Cardboard "Screen Touch" button.
- Uses Unity Remote to test thing in the Editor
- Take advantages of Unity's Events to trigger actions on interactive objects, including loading scenes

Scheme	SkillforSuccess(SFS)
NSQF Level	4
Sector	VR Assets Development
Duration	4months
Occupations	3DEnvironment Design and Building Game for VR Platform
EntryQua lification	B.Tech(CSE)
MinimumAge	18 Years
Document	http://courseware.cutm.ac.in/courses/gaming-and-immersive-learning-ar-vr/
Alignedto(QP)	https://www.researchgate.net/publication/344437285_Adaptive_QP_offset_selection_algorithm_for_virtual_reality_360-degree_video_based_on_CTU_complexity

- Bypass Unity XR SDKs
- Use Unity's Animator State Machine along with Collider Triggers, to trigger animations when passing by

Progression Pathways:

- Can join in industry as 3D VR Game Developer/Designer.
- Can do Diploma, Master or any Advance program or course in the same

Learning Record:

The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.
- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical.

Industry Participation:

- GT-Tech(Bhubaneshwar),GTET(Bhubaneshwar),Hid'sTechnologies,(Bhubaneshwar)

Expert Participation:

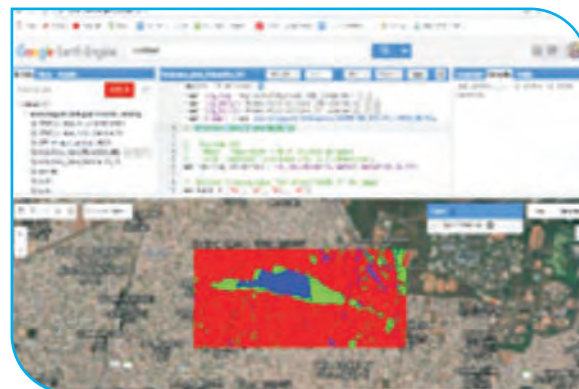Mr. Sandeep Kumar ,Unity Certified Trainer and 3D Artist, CUTM, Odisha, India.

CUTM3134 GIS and Remote Sensing: Application Development

Course Description:

This course provides hands-on, project based training on development of easy-to-use Geographical Information Systems (GIS) and Remote Sensing (RS) applications using the following platforms for use by village-level field officers and other stakeholders:

- Geographical Information Systems (GIS)
  - Quantum GIS - Python Plugin development
- Remote Sensing (RS)
  - Google Earth Engine
    (https://code.earthengine.google.com/)
- Web Portal and Mobile Application Development
  - Backend: NodeJS (https://nodejs.org/en/about/)
  - Frontend: React (https://reactjs.org

Learning Outcomes:

- Develop Python plugins for Quantum GIS: E.g. For preparing maps from GeoODK data

- Develop scripts for Google Earth Engine: E.g. For supervised classification of satellite imagery using AI/ML algorithms and training data

- Develop web portals and mobile applications (using progressive web app technology)

Progression Pathways:

- Join software industry as a Geospatial engineer
- Join NGO sector as a GIS expert

Learning Record:
The trainee will submit a Practice/Project/Learning record after each class/session.

Assessment Process:

- The assessment agencies should have an expert to conduct assessment NOS wise and every trainee should score a minimum of 70% in the overall assessment.

- The assessment of the theory/knowledge will be based on a written test/viva-voce or both while the skill test shall be hands-on practical

Industry Participation:

- Watershed Support Services and Activities Network (WASSAN) (ttps://www.wassan.org/

Expert Participation:
Mr. A. Ravindra, WASSAN

Scheme	Skill for Success (SFS)
NSQF Level	4
Duration	4 months
Sector	Construction Skill Development Council of India (CSDCI) Power Sector Skill Council (PSSC)
Occupation	Development and Applications
Entry Qualifications	Senior Secondary/ ITI/Diploma/ Degree/MSc in any discipline
Minimum Age	18 years
Aligned to (QP)	MINQ5601_Geospatial_Technician_v1_2 4_07_2019.pdf (nsdcindia.org)

CUTM3142 Brew Master

Course Description:

This course is to make world class Barista (Brew Master) who could smoothly operate the hot/cold beverage section and provide outstanding customer service to the guest in a QSR outlet.

Learning Outcomes:

This programme is expected to develop competencies of students in Retail and Hospitality (R&H) and by the end of the program the students must be able to:

- Make different types of hot and cold coffee.
- Provide excellent guest service in the outlet.
- Resolve customer issues and enhance customer satisfaction level.
- Maintain inventory, menu pricing and wastage management.
- Ensure beverage quality and customer satisfaction.

Scheme	Skill for Success (SFS)
NSQF Level	4
Sector	Hospitality
Duration	3 months
Occupations	Brew master
Entry Qualification	+2 pass
Minimum Age	18 Years
Aligned to (QP)	

- Ensure a safe working and customer experience environment by facilitating safe work behavior of the team.
- Participate in the national level Barista championship conducted by Coffee Board of India.

Progression Pathways:

- Can join industry as a Brew master and progress further as a Supervisor; can rise up to the level of Outlet Manager / Regional Manager.
- Can become entrepreneur in the related industry.
- Can do Work integrated BBA or any Advanced program in the same area.

Industry Participation:

- Café Coffee Day
- Godrej Disha
- Centurion Coffee Connect

Expert Participation:

Sri Mihir Ray, Brew Master Trainer

Barista Champions (National level) as Guest Lecturers

CAMPUSES:

Paralakhemundi Campus
Village Alluri Nagar, P.O. – R Sitapur,
Via- Uppalada Paralakhemundi,
Dist: Gajapati, Odisha, India.
PIN– 761211
Ph.: + 91 82600 77222

Bhubaneswar Campus
Ramchandrapur, P.O.- Jatni,
Bhubaneswar,
Dist: Khurda, Odisha, India,
PIN– 752050
Ph.: + 91 82600 77222

Balangir Campus
Behind BSNL office,IDCO land,
Rajib Nagar, Balangir.
Dist: Balangir, Odisha
Pin-767001
Ph.: 06652-235641/235642/235644

Rayagada Campus
IDCO Industrial Area,
Pitamahal,Rayagada,
Dist: Rayagada, Odisha
Pin-765002
Ph.: 7008211184 / 9861875762

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