

Title of course:			Analytical Instrumentation		
Nodal Department of HEI to run course					
Board Area/Sector-			Instrumentation		
Sub Sector-					
Nature of Course-Independent and Progressive			Independent and Progressive		
Name of Suggestive Sector Skill Council					
Aliened NSQF Level			4		
Expected fee of the Course-Free/Paid					
Stipend to Student expected from industry					
Number of Seats.....					
Course Code- VOAI (VOAI101, VOAI102, VOAI201, VOAI202)			Credits-03(1 Theory,2 Practical)		
Max Mark 25+75			Minimum Marks.		
Name of proposed skill Partner (Please Specify, Name of industry, company etc for practical/training/internship/OJT.					
Job prospects- Expected field of Occupation where student will be able to Get job after the completing this course in (Please Specify, Name of industry, company etc.			Research Labs, Medical Labs, Colleges, Paramedical Staff, Hospital		
Syllabus:-					
Unit	Topics	General/Skill Component	Theory/Practical /OJT/internship /Training	No. of Theory Hours (Total-15 Hours=1 credit)	No. of skill hours (Total=60 Hours=2 credits)
Semester-1 VOAI101			Credit-3		
I.	Instrumentation	General	Theory/ Practical	15 Hours	
II.	Standards, Calibration and Validations	Skill	Theory/Practical		30 Hours
III.	Training	Skill	Practical/Internship /Training		30 Hours
Semester-2 VOAI102			Credit-3		
I.	Food Instrumentation	General	Theory/ Practical	15 Hours	
II.	Bio-Medical Instrumentation	Skill	Theory/Practical		30 Hours
III.	Mechanism, Manufacturing And Measurement	Skill	Practical/Internship /Training		30 Hours
Semester-3 VOAI201			Credit-3		
I.	Industrial Instrumentation	General	Theory/ Practical	15 Hours	
II.	Environment Instrumentation	Skill	Theory/Practical		30 Hours
III.	Training	Skill	Practical/Internship /Training		30 Hours
Semester-4 VOAI202			Credit-3		
I.	Quality Control	General	Theory/ Practical	15 Hours	

II.	Embedded And Computational Instrumentation	Skill	Theory/Practical		30 Hours
III.	Instrument Maintenance	Skill	Practical/Internship /Training		30 Hours
<p>Suggested Readings: Instrumentation and Process Control Author I.K. Sawhney, S. K. Chaudhary & Sunil Kumar ANALYTICAL INSTRUMENTATION PERFORMANCE CHARACTERISTICS AND QUALITY Graham Currell ANALYTICAL INSTRUMENTATION HANDBOOK by Galen wood INSTRUMENTAL CHEMICAL ANALYSIS: BASIC PRINCIPLES AND TECHNIQUES</p>					
<p>Suggested Digital platforms/web link for reading- https://fac.ksu.edu.sa/sites/default/files/instrumental_chemical_analysis.pdf https://usakochoan.net/download/handbook-of-analytical-instruments-second-edition/</p>					
Suggested OJT/internship/Training/Skill partner :					
<p>Suggested Continuous Evaluation Methods: Internal Assessment: Every month will have one or two Grade test/Quiz/Practical test/ Seminar on the bases of theory and practical syllabus. Best 3 test/Quiz/Practical test/ Seminar marks will be considered for internal marks and carry 30 % of overall result. End term Exam will have 40 theory (Objective type) + 60 skill test plus report assessment marks based on visit and will carry 70 % of overall result. All students, who obtain 40% marks in internal assessment and 40% marks in end term, will be eligible for certificate and credit transfer. Course learners who qualify the end course examination can get a passing certificate and a marksheet for credit transfer. Course learners can get participation certificate and completion of the course for the participation in the course</p>					
<p>Course Pre-requisites:</p> <ul style="list-style-type: none"> • No pre-requisite required, open to all • To study this Course, a student must have the Subject science .in class/12th/certificate/diploma. • If progressive to study this course a student must have passed previous courses of this series. 					
Suggested Equivalent online courses:					
Any remarks/suggestions:					
<p>Notes:</p> <ul style="list-style-type: none"> • Number of units in theory/practical may vary as per need. • Total credit Semester-3(it can be more credits, but student will get only3 credits/semester or 5 credits/year). • Credit for theory=01(Teaching hours=15) • Credit for internship/OJT/Training/Practical=02(Training hours =60) 					