

<b>Title of course:</b>			<b>Analytical Instrumentation</b>		
<b>Nodal Department of HEI to run course</b>					
<b>Board Area/Sector-</b>			<b>Instrumentation</b>		
<b>Sub Sector-</b>					
<b>Nature of Course-Independent and Progressive</b>			<b>Independent and Progressive</b>		
<b>Name of Suggestive Sector Skill Council</b>					
<b>Aliened NSQF Level</b>			<b>4</b>		
<b>Expected fee of the Course-Free/Paid</b>					
<b>Stipend to Student expected from industry</b>					
<b>Number of Seats.....</b>					
<b>Course Code- VOAI (VOAI101, VOAI102, VOAI201, VOAI202)</b>			<b>Credits-03(1 Theory,2 Practical)</b>		
<b>Max Mark 25+75</b>			<b>Minimum Marks.</b>		
<b>Name of proposed skill Partner (Please Specify, Name of industry, company etc for practical/training/internship/OJT.</b>					
<b>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.</b>			Research Labs, Medical Labs, Colleges, Paramedical Staff, Hospital		
<b>Syllabus:-</b>					
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)
<b>Semester-1 VOAI101</b>			<b>Credit-3</b>		
I.	Instrumentation	General	<b>Theory/ Practical</b>	15 Hours	
II.	Standards, Calibration and Validations	Skill	<b>Theory/Practical</b>		30 Hours
III.	Training	Skill	<b>Practical/Internship /Training</b>		30 Hours
<b>Semester-2 VOAI102</b>			<b>Credit-3</b>		
I.	Food Instrumentation	General	<b>Theory/ Practical</b>	15 Hours	
II.	Bio-Medical Instrumentation	Skill	<b>Theory/Practical</b>		30 Hours
III.	Mechanism, Manufacturing And Measurement	Skill	<b>Practical/Internship /Training</b>		30 Hours
<b>Semester-3 VOAI201</b>			<b>Credit-3</b>		
I.	Industrial Instrumentation	General	<b>Theory/ Practical</b>	15 Hours	
II.	Environment Instrumentation	Skill	<b>Theory/Practical</b>		30 Hours
III.	Training	Skill	<b>Practical/Internship /Training</b>		30 Hours
<b>Semester-4 VOAI202</b>			<b>Credit-3</b>		
I.	Quality Control	General	<b>Theory/ Practical</b>	15 Hours	

II.	Embedded And Computational Instrumentation	Skill	<b>Theory/Practical</b>		30 Hours
III.	Instrument Maintenance	Skill	<b>Practical/Internship /Training</b>		30 Hours
<p>Suggested Readings: Instrumentation and Process Control Author I.K. Sawhney, S. K. Chaudhary &amp; 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-  <a href="https://fac.ksu.edu.sa/sites/default/files/instrumental_chemical_analysis.pdf">https://fac.ksu.edu.sa/sites/default/files/instrumental_chemical_analysis.pdf</a>  <a href="https://usakochoan.net/download/handbook-of-analytical-instruments-second-edition/">https://usakochoan.net/download/handbook-of-analytical-instruments-second-edition/</a></p>					
Suggested OJT/internship/Training/Skill partner :					
<p><b>Suggested Continuous Evaluation Methods:</b>  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"> <li>• No pre-requisite required, open to all</li> <li>• To study this Course, a student must have the Subject science .in class/12<sup>th</sup>/certificate/diploma.</li> <li>• If progressive to study this course a student must have passed previous courses of this series.</li> </ul>					
Suggested Equivalent online courses:					
Any remarks/suggestions:					
<p>Notes:</p> <ul style="list-style-type: none"> <li>• Number of units in theory/practical may vary as per need.</li> <li>• Total credit Semester-3(it can be more credits, but student will get only3 credits/semester or 5 credits/year).</li> <li>• Credit for theory=01(Teaching hours=15)</li> <li>• Credit for internship/OJT/Training/Practical=02(Training hours =60)</li> </ul>					