



## PG FOOD CHEMISTRY AND FOOD PROCESSING

### DEPARTMENT OF CHEMISTRY(SHIFT II)

Action taken Report on the Academic audit held on 5<sup>th</sup> August 2015 at 2.30 pm in the department of Chemistry based on the course curriculum offered to the students of MSc food chemistry and food processing are summarized as follows.

The following actions plans were implemented in the year 2016, during major restructuring held in the PG curriculum.

Agenda	<u>Suggestions by expert members</u>	<u>Action plan taken</u>
1. Curriculum	<p>Strength:</p> <ul style="list-style-type: none"><li>• Food Chemistry is very well structured.</li></ul> <p>Weakness:</p> <ul style="list-style-type: none"><li>• Food processing and food microbiology part has to be improved.</li></ul>	<p>Template was strengthened by increasing the number of food processing papers, in the third semester.</p> <ul style="list-style-type: none"><li>✓ Fundamentals of agro products and processing was rephrased into food processing agro products ,novel techniques adopted in cereals and pulses processing were given more weightage.</li><li>✓ Separate paper on dairy and beverages processing was introduced. Unit</li></ul>



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		<p>operations and recent trends adopted in dairy processing scales were strengthened.</p> <ul style="list-style-type: none"> <li>✓ More insights on recent trends in meat, poultry and fish processing was spelt out in livestock processing paper, earlier pronounced as Food from animal sources and processing techniques.</li> <li>✓ Major revision on fruits and vegetables processing was performed.</li> <li>✓ Majority of the concepts on food microbiology paper was reconsidered for revision separate unit on Modern instrumentation methods of microbial analysis and shelf life prediction was introduced.</li> </ul>
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	<p>Specific Areas for Improvement:</p> <ul style="list-style-type: none"> <li>• Number of papers (practical) in the food processing, food microbiology and food packaging can be increased.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Number of experiments in Food processing practicals were increased and split into two papers, namely Food Processing lab 1 and Food Processing lab 2, introducing baking science , fermentation , dairy, meat and sea foods in the later and confectionaries, fruits and vegetables, extrusion and RTE foods in the former.</li> <li>✓ New experiments on hygiene assessment and surface sanitation by swab/rinse method, enumeration of aerial microflora and Validation techniques on disinfectants and detergents were introduced in food microbiology practical paper.</li> <li>✓ Packaging concepts in food was further strengthened in Introduction to food processing theory paper.</li> </ul>
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	<p>Recommendations:</p> <ul style="list-style-type: none"> <li>• Equal weightage can be given to Food Chemistry &amp; Food Processing.</li> </ul>	<p>As per the expert committee members recommendations, number of papers on processing techniques was increased and almost equal weightage was given to food chemistry and food processing papers.</p>
<p><b><u>2. Syllabus</u></b></p>	<p>Strength:</p> <ul style="list-style-type: none"> <li>• Food Chemistry is well structured in both theory and practicals.</li> </ul> <p>Weakness:</p> <ul style="list-style-type: none"> <li>• Lacunae in some of the Food</li> </ul>	<p>✓ Members opinion was taken for further call, and number of experiments in Food processing practicals were increased and split into two papers,</p>



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	<p>Processing areas.</p>	<p>namely Food Processing lab 1 and Food Processing lab 2, introducing baking science , fermentation , dairy, meat and sea foods in the later and confectionaries, fruits and vegetables, extrusion and RTE foods in the former.</p>
	<p>Specific Areas for Improvement:</p> <ul style="list-style-type: none"> <li>• FP-1807 – Water and electrolyte balance in human nutrition can be included.</li> <li>• FP-1809 – Advancements in enumeration and detection of microorganism in food can be included.</li> <li>• FP-1809 – Hands on training on latest molecular tools like PCR.</li> <li>• By products technology treatment of effluents, food processing work can be included in any one of the</li> </ul>	<ul style="list-style-type: none"> <li>✓ 16PFP2MC02- water and electrolytic balance was included in Human Nutrition and Biochemistry paper.</li> <li>✓ <b>16PFP1MC03:</b> Advancements in enumeration and detection of microorganism in food and techniques like PCR, ELISA was included and spelt in Unit 5 of Food Microbiology paper.</li> <li>✓ By products technology, and effluent treatment was included in papers like plant</li> </ul>



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	<p>Food Processing paper.</p> <ul style="list-style-type: none"> <li>• FP-2809 – Operation research can be covered in research methodology and Bio-statistics. Non parametric tests can be included in Bi-statistics.</li> <li>• FP-3951 – Computing Techniques – Excel for Food Chemistry.</li> <li>• Membrane processing technology can be included in Food Processing.</li> </ul> <p>Recommendations:</p> <ul style="list-style-type: none"> <li>• The following concerns can be included under Food processing.             <ol style="list-style-type: none"> <li>1. Novel Food Processing</li> </ol> </li> </ul>	<p>product processing, livestock processing, and dairy and beverages processing</p> <ul style="list-style-type: none"> <li>✓ 16PFP2MC03 – Operations research and biostatistics was included in Unit 1 and Unit 3.</li> <li>✓ Computing techniques paper offered as ES, ( Elective subject) was taken to Unit 5 of Research methodology, and a new paper, 16PFP2ES02- Management of life style diseases, was introduced.</li> <li>✓ Membrane processing techniques was introduced in livestock processing paper.</li> <li>✓ Novel food processing techniques was introduced in the</li> </ul>
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	<p>Technologies.</p> <p>2. Exposing the students to food related software.</p>	<p>respective processing papers.</p> <p>✓ Food related software tool was introduced in research methodology paper.</p>
<p><b>3. Teaching Methodologies</b></p>	<p>Strength:</p> <ul style="list-style-type: none"> <li>• Erudite team of faculty.</li> <li>• A combination of traditional and latest gadgets are used.</li> </ul> <p>Weakness:</p> <p>None</p> <p>Specific Areas for Improvement:</p> <p>None</p> <p>Recommendations:</p> <p>None</p>	<p>Adopting as the best practice in the department.</p>
<p><b>4. Learning Methodologies &amp; Learning Environment</b></p>	<p>Strength:</p> <ul style="list-style-type: none"> <li>• Snap Test</li> <li>• Seminars in all subjects and evaluation by course teachers</li> <li>• Deliberations on food related issues in the class</li> </ul>	<p>✓ More weightage was</p>



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	<p>Weakness:</p> <ul style="list-style-type: none"> <li>Practicals in Food Processing technology related experiments.</li> </ul> <p>Specific Areas for Improvement:</p> <ul style="list-style-type: none"> <li>A separate laboratory for Food Processing and Food Microbiology may be established.</li> </ul> <p>Recommendations:</p> <p>Thrust on practical component in Food Processing may be given importance.</p>	<p>hence given for food processing lab papers in the restructured curriculum.</p> <ul style="list-style-type: none"> <li>✓ Separate laboratory facility was however established in both the papers, equipped with OTG, Microwave oven, baking unit, refrigerators for both microbiology and food processing separately, hand blender, gas stove, induction stove, autoclave, UV Visible spectrophotometer with automation, Laminar Air flow chamber.</li> </ul>
<p><b>5.Evaluation</b></p>	<p>Strength:</p> <ul style="list-style-type: none"> <li>Critical evaluation of students by the teachers.</li> </ul> <p>Weakness:</p>	<ul style="list-style-type: none"> <li>✓ Adopting as the best practice in the department.</li> </ul>





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	<ul style="list-style-type: none"> <li>• None</li> </ul> <p>Specific Areas for Improvement:</p> <ul style="list-style-type: none"> <li>• None</li> </ul> <p>Recommendations:</p> <ul style="list-style-type: none"> <li>• None</li> </ul>	
<b>6. List out five major areas of concern which need immediate attention:</b>	<b>1.</b> Practical exposure to Food Processing technology.	✓ Implemented
	<b>2.</b> Food related software like CAD/CAM can be included.	✓ Implemented
	<b>3.</b> Hands on training on GCMS, HPLC and texture analyzer can be given to students.	✓ Not implemented
	<b>4.</b> Campus interviews can be arranged.	✓ Off campus and on campus interviews are arranged for the students, and is generally considered as major strength of our department.
<b>7. Suggest some of the subjects which may be considered for inclusion in the proposed restructured curriculum:</b>	<ul style="list-style-type: none"> <li>• IPR</li> <li>• Effluent Treatment</li> <li>• Novel Food Processing technologies</li> </ul>	<ul style="list-style-type: none"> <li>✓ Included in food packaging paper offered in IV semester.</li> <li>✓ Included in all major processing papers covered in III semester.</li> <li>✓ Included in Introduction to food</li> </ul>



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<p><b>8. Overall opinion/comments on the restructured curriculum, teaching learning and evaluation methodologies followed in the department.</b></p>	<ul style="list-style-type: none"> <li>• Nutrition education</li> <li>• Food industry waste management.</li> <li>• Restructured curriculum is on par with the curriculum followed with other food universities.</li> <li>• Excellent teaching and learning environment has been created in the department.</li> <li>• The evaluation methodologies used are also very critical.</li> </ul>	<p>processing paper offered in I semester.</p> <ul style="list-style-type: none"> <li>✓ Introduced in Human nutrition and Biochemistry paper and Sustainable food management paper offered in II and III semester.</li> <li>✓ Concentrated more in sustainable food management paper and food audit and regulations paper offered during III and IV semester.</li> </ul> <p>Adopting as the healthier practice of the department.</p>
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