Name of the Faculty: **Vedpal Yadav**

Discipline: **Food Technology**

Semester: **5th Semester**

Subject: **Computer Applications in Food Technology**

Lesson Plan Duration: **(From July 2018 to November 2018)**

Work Load (Lecture / Practical) per week (in Hours): **Lectures-00, Practicals- 05**

Week	Theory	
	Practical Day	**Topic**
1.	1.	Introduction Introduction to computer and related hardware used in food industry (Touch Screens, Hand Held Devices, Palm Tops, Barcode Printers and Scanners, RFID Tags, etc.)
	2.	Introduction to various softwares for their application in food technology (like SAP, justFoodERP, FoodWorks, SERVE, etc.) with relevant case studies.
	3.	Application of MS Excel (latest version) to solve the problems of Food Technology MS Excel Basics
	4.	Introduction to different menus and commands commonly used in solving problems. Use of Add-In Tools like MegaStat, etc. for statistical data analysis.
2.	1.	Application of MS Excel to solve the problems of Food Technology
	2.	Chemical kinetics in food processing Determining rate constant of zero order reaction
	3.	First order rate constant and half-life of reactions
	4.	Microbial destruction in thermal processing of foods Determining decimal reduction time from microbial survival data
3.	1.	Statistical quality control in food processing Control Charts
	2.	Sensory evaluation of foods Statistical descriptors of a population estimated from sensory data obtained for a sample
	3.	Mechanical transport of liquid foods Measuring viscosity of liquid foods using a capillary tube viscometer
	4.	Steady state heat transfer in food processing Reducing heat transfer through a wall using insulation
4.	1.	Transient heat transfer in food processing Predicting temperature in a liquid food heated in a steam-jacketed kettle
	2.	Refrigeration, freezing and cold chain Pressure-temperature relations for ammonia used as a refrigerant in a vapor compression refrigeration system
	3.	Loss of quality in the cold chain
	4.	Familiarization with the application of computer in some common food industries, (like milk plant, bakery, fruit and vegetable processing, etc.) starting from the receiving of raw material up to the storage and dispatch of finished product with relevant case studies.
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Week	Theory	
	Practical Day	**Topic**
	2.	Basic Introduction to CAD (Computer Aided Designing), CAM (Computer Aided Manufacturing), CIM (Computer Integrated Manufacturing) and CAE (Computer Aided/ Assisted Engineering) and application of different softwares (like AutoCAD, Pro-E, Google Sketchup, etc.) in the same.
	3.	Basic Introduction to CAD (Computer Aided Designing), CAM (Computer Aided Manufacturing), CIM (Computer Integrated Manufacturing) and CAE (Computer Aided/ Assisted Engineering) and application of different softwares (like AutoCAD, Pro-E, Google Sketchup, etc.) in the same.
	4.	Basic Introduction to Application of computers in instrumentation and process control of food industry (PLC, SCADA, etc.), Inventory control and management in food industry using computers.
6.	1.	Basic Introduction to Application of computers in instrumentation and process control of food industry (PLC, SCADA, etc.), Inventory control and management in food industry using computers.
	2.	Sensory analysis using sensory analysis softwares (like Compusense 5, SIMS 2000, etc.).
	3.	Use of statistical packages (MS Excel, MegaStat Excel Add-In (Free Add-In), Graphpad InStat, Graphpad StatMate, Statistica, SPSS, Matlab, etc.) for analysis of data.
	4.	Use of statistical packages (MS Excel, MegaStat Excel Add-In (Free Add-In), Graphpad InStat, Graphpad StatMate, Statistica, SPSS, Matlab, etc.) for analysis of data.
7.	1.	Use of search engines and online research databases for research on food related topics.
	2.	Use of word processing software (like MS Word) for creating reports and technical papers with the help of reference managers (like EndNote, Reference Manager, RefWorks, etc.)
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	4.	Working with chemical and biological structures drawing softwares (like ChemBioOffice, ChemDraw, etc.)
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	2.	Familiarization with software related to food industry (like SAP, justFoodERP, LIMS (Laboratory Information Management System), etc.
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	4.	Use of simulation softwares for food industry related problems (like FlexSim, MATLAB Simulink, etc.)
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	2.	Visit to the industries & knowledge of computer application in the same.
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10.	1.	Introduction Introduction to computer and related hardware used in food industry (Touch Screens, Hand Held Devices, Palm Tops, Barcode Printers and Scanners, RFID Tags, etc.)
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		MS Excel Basics
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	2.	Chemical kinetics in food processing Determining rate constant of zero order reaction
	3.	First order rate constant and half-life of reactions
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12.	1.	Statistical quality control in food processing Control Charts
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	3.	Use of statistical packages (MS Excel, MegaStat Excel Add-In (Free Add-In), Graphpad InStat, Graphpad StatMate, Statistica, SPSS, Matlab, etc.) for analysis of data.
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		Graphpad InStat, Graphpad StatMate, Statistica, SPSS, Matlab, etc.) for analysis of data.
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	2.	Use of word processing software (like MS Word) for creating reports and technical papers with the help of reference managers (like EndNote, Reference Manager, RefWorks, etc.)
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	4.	Working with chemical and biological structures drawing softwares (like ChemBioOffice, ChemDraw, etc.)