



# **SCHEME OF INSTRUCTION & SYLLABUS**

**FOR**

**MASTERS OF SCIENCE**

**IN**

**FOOD TECHNOLOGY**

*(w.e.f. Academic Session 2019)*

**Department of Food Technology**

**Invertis Institute of Applied Sciences & Humanities**

**INVERTIS UNIVERSITY, BAREILLY**

### **Programme Outcomes of M.Sc. Food Technology:**

After completion of the program of M.Sc. Food Technology, every student will know the following attributes:

- PO1 An ability to apply the knowledge of science, microbiology and technology.
- PO2. An ability to apply the knowledge of underlying chemistry, properties and effects of processing on food components.
- PO3.An ability to use the techniques, skills, and modern tools necessary food processing operations.
- PO4.Demonstrate knowledge and understanding of technology and management principles, manage projects efficiently in food science and technologyand multidisciplinary environments after consideration of economical and financial factors.
- PO5.An ability to design and conduct experiments, as well as to analyze and interpret data.
- PO6. An ability to apply knowledge for production of safe food and shelf-life extension of food products.
- PO7.An ability to identify, formulates, and solve food science and technology problems.
- PO8.An ability to extract information pertinent to unfamiliar problems through literature survey and experiments, apply appropriate research methodologies, techniques and tools, design, conduct experiments, analyze and interpret data. Contribute individually/in group(s) to the development of scientific/technological knowledge in food science and technology.

### MFT 301 Processing of Cereals, Pulses & Oil Seeds

<b>Teaching Scheme</b> Lectures: 3 hr./ week Tutorials: 1 Credits: 4	<b>Examination Scheme</b> Class Test: 12Marks Teachers Assessment: 6 Marks Attendance: 12 marks End Semester Exam: 70 Marks
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#### COURSE OBJECTIVE

To create knowledge about the processing and quality evaluation of cereal grains.

#### Detailed Syllabus

<b>MODULE 1</b> Wheat Technology: Composition of grain and environmental effects on its processing quality, enzymes of wheat and their role in the manufacture of wheat products; principles of wheat milling and its effect on composition of flour, aging of flour, byproducts, chemical improvers- bleaching and maturing agents, property of dough and its rheology, manufacture of wheat products bread, biscuits etc.; formulation of premixes for bakery products; pasta goods and processed cereal foods for infants.
<b>MODULE 2</b> Rice Technology: Composition, type of proteins, starch content, amylose and amylopectin fractions; presence and effect of lipases; distribution of vitamins; minerals, and proteins in rice grain and its relation to milling; rice milling operations and its effect on nutritive value; cooking quality; byproducts of rice milling and their utilization; processed and prepared mixes based on rice.
<b>MODULE 3</b> Legumes: Composition, anti-nutritional factors, processing methods, methods of cooking.
<b>MODULE 4</b> Corn Technology: Composition, processing of corn for manufacture of corn grits, meal and flour; manufacture of corn flakes, corn syrup, cornstarch, corn steep liquor, corn oil and canned corn. Composition and Processing of millets like barley, sorghum. Oats etc.
<b>MODULE 5</b> Oilseeds: Composition, processing of oilseeds as protein concentrations, properties and uses of oilseeds meals, technology vegetable protein isolates; Barrier compounds in the utilization of oil seed proteins. Low cost protein foods from oilseeds.

#### Text books and Reference books:

1. Chakrabarthy, M.M. (2003). Chemistry and Technology of Oils and Fats. Prentice Hall.
2. Dendy, D.A.V., & Dobraszczyk, B.J. (2001). Cereal and Cereal Products. Aspen.
3. Hamilton, R.J., & Bhati, A. (1980). Fats and Oils - Chemistry and Technology. App. Sci. Publ.
4. Hosney, R.S. (1994). Principles of Cereal Science and Technology. 2nd Ed. AACC.
5. Kay, D.E. (1979). Food Legumes. Tropical Products Institute.  
Kent, N.L. (1983). Technology of Cereals. 4th Ed. Pergamon Press.

**COURSE OUTCOMES:**

After completing the course, students will be able to:

1. Student will acquire the understanding of the technology for Wheat Milling & Wheat based Food Products.
2. Student will acquire the understanding of the technology for Rice Milling & Rice based other Food Products.
3. Student will acquire the understanding of working of equipments related to Wheat & Rice Milling along with equipments related to Wheat based & Rice based Food Products.
4. Student will be able to understand technology for Milling of Corn & Corn based other Food Products along with equipments.
5. Student will be able to understand technology for Oil Extraction & Oil Seed Processing along with equipments.

<b>MFT 302 Processing of Milk and Milk Products</b>	
<b>Teaching Scheme</b> Lectures: 3 hr./ week Tutorials: 1 Credits: 4	<b>Examination Scheme</b> Class Test: 12Marks Teachers Assessment: 6 Marks Attendance: 12 marks End Semester Exam: 70 Marks

### **Course Objective**

To impart knowledge about processing of milk and its products and legislation for the quality control of milk and milk products.

### **Detailed Syllabus**

<b>Module 1</b>
Introduction: Physicochemical properties of milk, Platform tests, Chemical composition and nutritive value of milk, Factors affecting composition of milk. Importance of milk industry in India: Collection, chilling, transportation, cream separation, standardization, pasteurization, sterilization, homogenization, packaging, storage and distribution of fluid milk, Ultrahigh temperature processed milk.
<b>Module 2</b>
Preparation of various types of milks: Toned, homogenized, fortified, reconstituted and flavored milk. Technology of fermented milk products: Principles and practices of manufacture, packaging, storage and marketing of Dahi, cultured butter milk, acidophilus milk etc.
<b>Module 3</b>
Cheese: Manufacture of hard, semi hard, soft and processed cheeses. Storage, grading and marketing of cheese, cheese defects and their control. Butter: Manufacture, packaging, storage and marketing of butter; butter defects and their control, margarine.
<b>Module 4</b>
Technology of frozen milk products: Classification, manufacture, packaging, storage and marketing of ice cream, ices, sherbets etc. defects of frozen products and their control. Technology of evaporated and dried milk: Manufacture of evaporated milks and milk powders. Packaging storage defects and their control. Technology of condensed milk: Manufacture of condensed milks, Packaging storage defects and their control
<b>Module 5</b>
Technology of dairy by products: Utilization of skim milk, buttermilk and whey for the manufacture of casein, lactose etc. Technology of indigenous milk products: Principles and practices of manufacture, packaging, storage and marketing of ghee, Khoa, Chenna, shrikhand, paneer, rasogulla, gulab jamun and Milk based foods Preparation of soft curd milk, vitaminized milk, standardized milk, filled milk and imitation milk. Sanitary aspects: of dairy plant building, equipment and their maintenance. Disposal of dairy plant waste. Application of membrane technology in dairy industry.

<b>Text books and Reference books:</b>
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| <ol style="list-style-type: none"><li>1. Considine, D.M. Ed. 1982. Foods and Food Production Encyclopaedia, VNR, New York.</li><li>2. Dey, Sukumar. 1994. Outlines of Dairy Technology. Oxford Univ. Press, New Delhi.</li><li>3. Robinson, R.K. (2 vol. set). 1986. Modern Dairy Technology Elsevier Applied Science, UK.</li><li>4. Rosenthal, I. 1991. Milk and Milk Products. VCH, New York.</li><li>5. Warner, J.M. 1976. Principles of Dairy Processing. Wiley Eastern Ltd. New Delhi.</li><li>6. Yarpar, WJ. and Hall, C.W. 1975. Dairy Technology and Engineering AVI, Westport.</li></ol> |
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### **COURSE OUTCOMES**

Students shall acquire knowledge about
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1. Composition of milk and milk products.
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2. Processing of milk and milk products.
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3. Different milk product development.
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4. Organization and operations involved in milk processing unit.
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5. To understand legislation for the quality control of milk and milk products
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<b>MFT 303 Quality Control Food Standards and Food Laws</b>	
<b>Teaching Scheme</b> Lectures: 3 hr./ week Tutorials: 1 Credits: 4	<b>Examination Scheme</b> Class Test: 12Marks Teachers Assessment: 6 Marks Attendance: 12 marks End Semester Exam: 70 Marks

### **Course Objective**

To create understanding of quality control and assurance, risk assessments, GMPs, and regulations in the food sector.

### **Detailed Syllabus**

<b>Module 1</b>
Quality Assurance: Introduction, Importance and Difference, Food Quality and Food Safety: Scope and difference. Raw materials & Finished product quality: Quality parameters and evaluation procedures: Appearance, color, texture, viscosity, consistency, flavor. Sensory evaluation: Selection of panel of judges, sensory characteristics of foods, types of tests.
<b>Module 2</b>
Food standards and laws: International – Concept of Codex alimentarius, HACCP, GMP, GHP, USFDA, ISO 9000, ISO 22000, ISO 14000. National – Introduction of BIS/IS, Food Safety and standards – 2006, Food Safety and standard regulation 2010, FPO, MPO, MMPO, Agmark.
<b>Module 3</b>
Quality Certification & Accrediation: Introduction and procedure. Prevention of food adulteration Act: Food Adulteration: definition, common adulterants in different foods, contamination, method of detection
<b>Module 4</b>
Food additives and legislation; coloring mater, preservatives, poisonous metals, antioxidants and emulsifying and stabilizing agents, insecticides and pesticides. PFA specification for food products, Nutritional labeling
<b>Module 5</b>
Water Quality: Water standards and Analysis physical, chemical and microbiological characteristics of water analysis. Waste treatment: Fundamentals of Physical, Biological & Chemical waste treatments

<b>Text books and Reference books:</b>
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| <ol style="list-style-type: none"><li>1. Amerine, M.A. Pangborn, R.M., and Rosseler, E.B. 1965. Principles of Sensory Evaluation of Food. Academic Press, New York.</li><li>2. Birk, G.G., Herman, J.G. and Parker, K.J. Ed. -1977. Sensory Properties of Foods. Applied Science, London.</li><li>3. Charalambous, G. and Inglett, G. 1981. The Quality of Foods and Beverages. (2 vol. set). Academic Press, New York.</li><li>4. Furia, T.E. Ed. 1980. Regulatory Status of Direct Food Additives. CRC Press, Florida.</li><li>5. Krammer, A. and Twigg, B.A. 1970. Quality Control for the Food Industry. 3rd Edn. AVI, Westport.</li><li>6. Pattee, H.E. Ed. 1985. Evaluation of Quality of Fruits and Vegetables. AVI, Westport.</li><li>7. Ranganna, S. 1986. Handbook of Analysis and Quality Control for Fruits and Vegetable Products. Tata McGraw Hill, New Delhi.</li><li>8. Tannenbaum, S.R. Ed. 1979. Nutritional and Safety Aspects of Food Processing, Marcel Dekker, New York.</li></ol> |
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<b>Course Outcomes</b>
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| 1. To create understanding of quality control and assurance system in food industry. |
| 2. To understand the risk assessments procedure for food sector.                     |
| 3. GMPs and GHP regulations in the food sector.                                      |
| 4. To understand the different food safety management used worldwide.                |
| 5. To understand the sensory evaluation methodology used in food industry.           |



<b>MFT 304 Entrepreneurship in Food Processing</b>	
<b>Teaching Scheme</b> Lectures: 3 hr./ week Tutorials: 1 Credits: 4	<b>Examination Scheme</b> Class Test: 12Marks Teachers Assessment: 6 Marks Attendance: 12 marks End Semester Exam: 70 Marks

### **Course Objective**

To impart knowledge related to market types, the procurement, marketing and management of raw and processed agricultural produce meant for human consumption.

### **Detailed Syllabus**

<b>Module I</b>
<b>Accounting and Finance</b> Taking decision on starting a venture; Assessment of feasibility of a given venture/new venture; Approach a bank for a loan; Sources of financial assistance; Making a business proposal/Plan for seeking loans from financial institution and Banks; Funds from bank for capital expenditure and for working; Statutory and legal requirements for starting a company/venture; Budget planning and cash flow management; Basics in accounting practices: concepts of balance sheet, P&L account, and double entry bookkeeping; Estimation of income, expenditure, profit, income tax etc.
<b>Module 2</b>
<b>Negotiations/Strategy</b> With financiers, bankers etc.; With government/law enforcement authorities; With companies/Institutions for technology transfer; Dispute resolution skills; External environment/changes; Crisis/ Avoiding/Managing; Broader vision–Global thinking.
<b>Module 3</b>
Leadership skills; Managerial skills; Organization structure, pros & cons of different structures; Team building, teamwork; Appraisal; Rewards in small scale set up. Human resource planning: Planning and design of marketing system, worker’s safety and plant hygiene
<b>Module 4</b>
Assessment of market demand for potential product(s) of interest; Market conditions, segments; Prediction of market changes; Identifying needs of customers including gaps in the market, packaging the product; Market linkages, branding issues; Developing distribution channels; Pricing/Policies/Competition; Promotion/ Advertising; Services Marketing
<b>Module 5</b>
Introduction to Operations Research: Definition, applications. Inventory control, Linear Programming. Queuing Theory, Transportation and Assignment Forecasting

**Text books and Reference books:**

1. Elementary Economics by Dewetl and Verma S Chand & company
2. Production (operations) Management by L.C. Jhamb
3. Entrepreneurship and Management inputs for entrepreneurs in food processing sector by Dinesh Awasthi and Rama Jaggi
4. Principles of Management by Ramaswamy (Himalaya Publication)
5. Industrial Engineering and Production Management by M. Telsang
6. Production and Operation Management by R. Panneerselvam (Prentice- Hall of India Pvt. Ltd.)

**Course Outcomes**

1. Ability to understand the basic concepts of marketing of food items.
2. Ability to understand market types, the procurement, marketing and management of raw and processed agricultural produce meant for human consumption.
3. Acquire knowledge of the legal and ethical environment impacting agriculture organizations and effectively evaluate the impact of trade policy.
4. Understand the need for careful management of business human resources.
5. Understand the impact of planning, decision making and risk taking on an agri-business.

<b>MFT 305 Fermentation Technology</b>	
<b>Teaching Scheme</b> Lectures: 3 hr./ week Tutorials: 1 Credits: 4	<b>Examination Scheme</b> Class Test: 12Marks Teachers Assessment: 6 Marks Attendance: 12 marks End Semester Exam: 70 Marks

### Course Objective

Acquaintance with importance of food fermentation and its application in food sector.

### Detailed Syllabus

<b>Module 1</b> Fermentation, types of fermentation, Fermentation Pathways for Industrial Products: Biochemical pathways of metabolic reactions for utilization of carbon sources and formation of different metabolites by micro organisms; Strain Development -Various techniques of modifying the strains for increased production of industrial products. Use of chemicals, UV rays, genetic engineering to produce newer strains.
<b>Module 2</b> Typical media, Media formulation: Carbon Source, Nitrogen source, Minerals, Growth Factors, Buffers, Precursors and Inhibitors, O <sub>2</sub> requirement and antifoams.
<b>Module 3</b> Fermentor design, Instrumentation and control, Types of fermentors (Shake flask, Batch/stir tank, Continuous, Bubble column, airlift and Tower fermenter), Types of fermentation processes, aeration and agitation (The oxygen requirement for industrial fermentation, Determination of KLa values).
<b>Module 4</b> Downstream Processing: Various equipment for product recovery; micro-filters and Ultrafiltration systems for separation of cells and fermentation medium and for concentration of medium containing product; chromatographic systems of separation; extraction of product with solvent; evaporation and crystallization; centrifugation, different types of centrifuges; drying techniques; instrumentation and controls.
<b>Module 5</b> Fermentative Production: a) Foods: Processes for preparing fermented products including Yogurt (curd) and other Traditional Indian Products like idli, dosa, dhokla, shrikhand, etc.,Soya based products like soya sauce, natto, etc., Cocoa, Cheese etc.; Alcoholic Beverages based on fruit juices (wines), cereals (whisky, beer, vodka etc.), sugar cane (rum) etc. Process description, quality of raw materials, fermentation process controls etc.) Industrial chemicals: Fermentative Production of Organic acids like (Citric Acid, Lactic Acid), Amino Acids (Glutamic acid, Lysine), Antibiotics (Erythromycin, Penicillin), Polysaccharides (Dextran, Xanthan) etc.; steroids transformation; process descriptions and key controls for optimal production.

**Text books and Reference books:**

1. Vogel, H.C. and C.L. Todaro, 2005 Fermentation and Biochemical Engineering Handbook: Principles, Process Design and Equipment, 2nd Edition, Standard Publishers.
2. El-Mansi, E.M.T, 2007, Fermentation Microbiology and Biotechnology 2nd Edition, CRC / Taylor & Francis.
3. Joshi, V.K. and Ashok Pandey, 1999, Biotechnology: Food Fermentation, Microbiology, Biochemistry and Technology, Vol. I & vol. II Educational Publisher.
4. Peppler, H.J. and D. Perlman, 2004, Microbial Technology: Fermentation Technology, 2<sup>nd</sup> Edition, Vol. II Academic Press / Elsevier.
5. Stanbury, P.F., A. Whitaker and S.J. Hall, 2005 Principles of Fermentation Technology, 2<sup>nd</sup> Edition Aditya Books (P) Ltd.

**Course Outcomes**

1. Appreciate the positive role and benefits of microorganisms and enzymes in food production, processing, and preservation.
2. Understand basic biological and chemical processes of living cells, enzymes, and microbial nutrition in relation to fermentation processes.
3. Understand principles of inoculum /starter culture development for industrial fermentations and fermenter /reactor design, control and operation.
4. Understand both upstream and downstream unit operations and technologies used for substrate preparation and recovery and purification of fermentation products.
5. Discuss and evaluate the operational considerations and relative advantages relating to the choice of techniques used in downstream processing of food products.

<b>MFT-351 Cereals, Pulses and Oil Seeds Lab</b>	
<b>Teaching Scheme</b> Lectures: Nil Tutorials: Nil Practicals:4 Credits: 2	<b>Examination Scheme</b> Internal Assessment: 15 Marks Practical: 20 marks Viva:10 Record: 05 Marks End Semester Marks:35

### **Course Objective:**

1. To give practical knowledge of various physicochemical and rheological examination of wheat and rice
2. Provides practical knowledge of baking of various cereal products.
3. Gives knowledge about quality tests and texture profile analysis for cereal and baked products.

### **Detailed Syllabus**

<ol style="list-style-type: none"> <li>1. Physico-chemical and rheological examination of wheat and its products test weight, kernal hardness, gluten content, milling tests.</li> <li>2. Evaluation of rice amylose and amylopectin determination, gelatinization temperature, water absorption tests.</li> <li>3. Experimental parboiling and assessment of degree of polishing.</li> <li>4. Experimental baking of selected cereals products bread, biscuits.</li> <li>5. Preparation of protein concentrates and isolates and their evaluation for protein content and solubility.</li> <li>6. Determination of Yeast activity used in fermented cereal products.</li> <li>7. Quality test for wheat flour used in the baked products.               <ol style="list-style-type: none"> <li>a) Maltose Number</li> <li>b) Water Absorption</li> <li>c) Sedimentation value</li> <li>d) Alcohol Acidity</li> </ol> </li> <li>8. Texture profile analysis of baked cereal food products by texture analyzer.</li> </ol>
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### **Course Outcomes:**

After completing the course, students will be able to:

1. Understand the different physicochemical and rheological parameters for food analysis.
2. Understand the basics of baking and yeast activity in fermented products.
3. Understand various quality tests and texture profile analysis of cereal products.
4. Understand the parboiling, gelatinization and water absorption tests.

<b>MFT-352 Milk and milk products Lab</b>	
<b>Teaching Scheme</b> Lectures: Nil Tutorials: Nil Practicals:4 Credits: 2	<b>Examination Scheme</b> Internal Assessment: 15 Marks Practical: 20 marks Viva:10 Record: 05 Marks End Semester Marks:35

### **Course Objective:**

1. To give practical knowledge of various test for milk.
2. Provides practical knowledge of adulteration testing.
3. Gives knowledge about preparation of toned, homogenized, fortified, reconstituted,fermented and flavored milks, ice cream,butter,khoa,ghee,casein and chenna.

### **Detailed Syllabus**

<ol style="list-style-type: none"> <li>1. Platform test for raw milk</li> <li>2. Determination of moisture content in milk</li> <li>3. Determination of fat content in Milk powders and ice-cream products.</li> <li>4. Determination of Milk adulterants: Starch, Urea, Formaldehyde and Sugar, Hydrogen peroxide, salt and detergent.</li> <li>5. Operation, cleaning and sterilization of dairy plant machinery involved in fluid milk processing</li> <li>6. Preparation of toned, homogenized, fortified, reconstituted and flavored milks</li> <li>7. Manufacture of fermented milks.</li> <li>8. To study the kinetics of enzymes and manufacture of cheeses.</li> <li>9. Manufacture of butter</li> <li>10. Manufacture of ice- cream, ices, sherbats.</li> <li>11. Manufacture of casein, ghee, khoa, chhena.</li> </ol>
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### **Course Outcomes:**

After completing the course, students will be able to:

1.Understand the various platform and adulteration tests for milk.
2. Preparation of toned, homogenized, fortified, reconstituted,fermented and flavored milks, ice cream,butter,khoa,ghee,casein and chenna.
3. Students will know about operation, cleaning and sterilization of dairy plant machinery involved in fluid milk processing.

<b>MFT-353 Quality Control Lab</b>	
<b>Teaching Scheme</b> Lectures: Nil Tutorials: Nil Practicals:4 Credits: 2	<b>Examination Scheme</b> Internal Assessment: 15 Marks Practical: 20 marks Viva:10 Record: 05 Marks End Semester Marks:35

### **Course Objective:**

1. To give practical knowledge of various sensory tests for food products.
2. Provides practical knowledge about parameters of analysis of water.

### **Detailed Syllabus**

<ol style="list-style-type: none"> <li>1. Sensory analysis of food products:               <ol style="list-style-type: none"> <li>a) Paired comparison test</li> <li>b) Duo-trio test</li> <li>c) Hedonic test</li> <li>d) Triangle test</li> <li>e) Ranking test</li> <li>f) Single sample test</li> <li>g) Composite scoring test</li> </ol> </li> <li>2. Analysis of water used in food industries i.e. Alkalinity, Acidity, Hardness, pH, TPC and Coliform count</li> </ol>
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### **Course Outcomes:**

After completing the course, students will be able to:

Understand the various sensory tests used in food industry.
Understand the testing methods for alkalinity, acidity, hardness, pH, total plate count and coliform count

<b>MFT-355 Seminar-III</b>	
<b>Teaching Scheme</b> Credits: 24	<b>Examination Scheme</b> End Semester Exam: 300 Marks

Every student will be required to undertake a research project (**minimum tenure three months**) based on any of the areas of food technology, proteomics, genomics, animal, plant, microbial technology, and bioinformatics or preferably related to major food technology research. The project report will be submitted in the form of dissertation duly certified by the supervisor of the dissertation by any research organization, industry, national institutes and/or Universities in India, by seeking the placement. The student then shall have to appear for the viva voce examination.

### **GUIDELINES FOR DISSERTATIONS REPORT LAYOUT:**

The report should contain the following components:

- **Title or Cover Page:** The title page should contain the following information: Project Title; Student's Name; Course; Year; Supervisor's Name.
- **Acknowledgements** (optional): Acknowledgment to any advisory or financial assistance received in the course of work may be given.
- **Abstract:** It should be straight to the point; not too descriptive but fully informative. First paragraph should state what was accomplished with regard to objectives. The abstract have to be concise summary of the scope and results of the project.
- **Table of Contents:** Titles and subtitles are to correspond exactly with those in the text.
- **Introduction:** A brief introduction to the problem that is central to the project and it should aim to catch the imagination of the reader, so excessive details should be avoided.
- **Materials and Methods:** This section should aim at experimental designs, materials used. Methodology should be mentioned in details including modifications if any.
- **Results and Discussion:** Present results, discuss and compare these with those from other workers, etc. In writing these section, emphasis should be given on what has been performed and achieved in the course of the work, rather than discuss in detail what is readily available in text books. Avoid abrupt changes in contents from section to section and maintain a lucid flow throughout the thesis. An opening and closing paragraph in every chapter could be included to aid in smooth flow.
- **Note** during writing, all figures & tables should as far as possible be next to the associated text, in same orientation as main text, numbered, & given appropriate titles.
- **Conclusion:** This is the final section in which outcome of the work is mentioned briefly.
- **Future prospects** (if applicable)
- **References / Bibliography:** This should include papers and books referred to in the body of the report. These should be ordered alphabetically on the author's surname.
- **Appendices:** This contains material which is of interest to reader but not an integral part of the thesis and may be useful to document for future reference.

### **ASSESSMENT OF THE PROJECT FILE:**

Essentially, marking will be based on the following criteria: the quality of the report, the technical merit of the project and the project execution. Technical merit attempts to assess the quality and depth of the intellectual efforts put into the project.

#### **EXAMINATION SCHEME:**

Dissertation	100
Presentation	100
Viva Voce	100
<b>Total</b>	<b>300</b>