- **1. Literature Search** (p. 1)
- Abstracts and Indexes (p. 1)
- Journals (p. 1)
- Advances and Reviews (p. 1)
- General (p. 2)
- Internet Sources of Information (p. 2)
- 2. Evaluation of Foods (p. 5)
- **Color** (p. 5)
- **Texture** (p. 6)
- **Flavor** (p. 6)
- 3. Objective Methods (p. 9)
- 4. Sensory Methods (p. 11)
- Developing Forms for Sensory Tests (p. 12)
- 5. Laboratory Notebook (p. 15)
- Sample Tables as Reported in the Journal of Food Science (p. 16)
- Graphs from the Journal of Food Science (p. 18)
- 6. Style Guide for Research Papers (p. 21)
- Reference Format (p. 26)
- Format (p. 15)
- Mission of IFT Scientific Journals (p. 21)
- General Editorial Policies (p. 21)
- Journal Sections (p. 23)
- Manuscript Requirements (p. 24)
- Editorial Review and Processing (p. 27)
- Instructions for Submitting a Manuscript (p. 28)
- Presubmission Checklist (p. 29)
- 7. Individual Project (p. 31)
- Research Proposal (p. 31)
- **Oral Presentation** (p. 31)
- Written Presentation (p. 32)
- Scorecard for Grade (p. 34)
- 8. Laboratory: Sensory Evaluation of Foods (p. 35)
- Experiment 1 Threshold Concentrations of the Primary Tastes (p. 35)
- Experiment 2 Effect of Temperature on Taste (p. 35)
- Experiment 3 Perception of Phenylthiocarbamide (PTC) (p. 36)
- Experiment 4 Comparison of Sweetness of Sugars (p. 36)
- Experiment 5 Identification of Samples (p. 37)
- Experiment 6A Difference Testing (p. 38)
- Experiment 6B Descriptive Tests (p. 39)
- Experiment 6C Affective Tests (p. 39)
- Experiment 7 Adaptation of Receptors (p. 40)
- 9. Laboratory: Objective Evaluation of Foods (p. 41)
- **Texture** (p. 41)
- 10. Laboratory: Physical Properties of Foods (p. 43)
- Water Activity (p. 43)
- Viscosity (p. 43)

- **Specific Gravity** (p. 44)
- Experiment 1 Water Activity (p. 44)
- Experiment 2 Viscosity (p. 46)
- Experiment 3 Specific Gravity and Refractive Index (p. 46)
- 11. Laboratory: Dispersion of Matter (p. 49)
- Experiment 1 Solutions (p. 49)
- Experiment 2 Emulsions (p. 51)
- Experiment 3 Foaming Properties of Proteins (p. 53)
- 12. Laboratory: Lipids (p. 55)
- Experiment 4 Plasticity of Fats (p. 57)
- Experiment 1 Odors and Physical State of Lipids and Fatty Acids (p. 55)
- Experiment 2 Solubility, Specific Gravity, and Refractive Index (p. 56)
- Experiment 3 Water-Absorbing Capacity (p. 57)
- Experiment 5 Fat Bloom in Chocolate (p. 58)
- Experiment 6 Oxidative Rancidity (p. 59)
- 13. Laboratory: Amino Acids, Proteins, and Maillard Browning (p. 61)
- Experiment 1 Maillard Reaction (p. 61)
- Experiment 2 Qualitative Test for Protein (p. 62)
- Experiment 3 Quantitative Determination of Protein in Foods by the Biuret Method (p. 64)
- Experiment 4 Effect of Heat on Proteins (p. 65)
- Experiment 5 Coagulation of Proteins (p. 66)
- Experiment 6 Effect of pH on Hydration of Meat Proteins (p. 67)
- Experiment 7 Spun Fiber Production (p. 68)
- Experiment 8 Effects of the Enzyme Rennin on Milk Protein (p. 68)
- 14. Laboratory: Gelatin (p. 71)
- Experiment 1 Effects of Variations in Gelatin Concentration, pH, Sucrose Concentration, and Presence of a Proteolytic Enzyme on Gelatin Gel Strength (p. 71)
- Experiment 2 Effect of In Situ Enzymes on Gelatin Gel Strength (p. 73)
- **15. Laboratory: Carbohydrates** (p. 75)
- Experiment 1 Fehling's Test for Reducing Sugars (p. 75)
- Experiment 2 Microscopic Appearance of Starch (p. 76)
- Experiment 3 Starch Gels (p. 77)
- Experiment 4 Viscosity Curves of Starch Pastes (p. 78)
- 16. Laboratory: Flour Mixtures (p. 81)
- Experiment 1 Gluten Balls (p. 81)
- Experiment 2 Sugar Cookies (p. 82)
- Experiment 3 Chocolate Cakes (p. 84)
- 17. Laboratory: Pigments (p. 87)
- Experiment 1 Color Reactions of Myoglobin (p. 87)
- Experiment 2 The Effects of Heat and pH on Plant Pigments (p. 88)
- Experiment 6 Measurement of Color of Oranges (p. 94)
- Experiment 3 Separation of Pigments in a Green, Leafy Vegetable (p. 90)
- Experiment 4 Enzymatic Browning (p. 92)
- Experiment 5 Peroxidase Assay to Determine Adequacy of Blanching (p. 93)

- 18. Laboratory: Pectin (p. 97)
- Experiment 1 Histochemical Localization of Pectic Substances (p. 97)
- Experiment 2 Pectin Gels (p. 98)
- 19. Laboratory: Synthesized Carbohydrate Food Gums (p. 103)
- Experiment 1 Dispersibility and Thermogelation of Cellulose Gums (p. 103)
- Experiment 2 Alginate Gels (p. 105)
- **20. Equipment Guide** (p. 107)
- Brookfield Viscometer (Analog and Digital) (p. 107)
- Compensating Polar Planimeter (p. 109)
- **Consistometer (Bostwick)** (p. 110)
- Hunter Colorimeter (p. 111)
- Hydrometer (p. 112)
- Instron Materials Tester (p. 114)
- **Jelmeter** (p. 115)
- Reflectance Meter (Photovolt) (p. 120)
- Linespread Apparatus (p. 116)
- **Penetrometer or Compressometer** (p. 117)
- pH Meter (p. 118)
- **Refractometer** (Abbe) (p. 121)
- Seed Volume Apparatus (p. 123)
- Shear Press (p. 124)
- Shortometer (p. 125)
- Specific Gravity of Solids (p. 126)
- **Spectrophotometer** (p. 126)
- Stable Micro Systems Texture Analyzer (p. 127)
- Vernier Caliper (p. 129)
- Visco/Amylo/GRAPH (p. 130)
- Water Activity System (p. 131)
- Appendix (p. 133)
- **Index** (p. 135)