

| 5260- ANIMAL PRODUCTS TECHNOLOGY |           |         |                        |    |                              |      |               |       |          |
|----------------------------------|-----------|---------|------------------------|----|------------------------------|------|---------------|-------|----------|
| Teaching Schedule Per Week       |           |         | Progressive Assessment |    | Examination Schedule (Marks) |      |               |       |          |
| Lectures                         | Practical | Credits |                        |    | Theory                       |      | Practical Ex. | Total |          |
| 3                                | 2         | 5       | 25                     | 25 | 3 Hrs                        | 100  | -             | 150   |          |
| Pre-requisite                    |           | Source  | Semester               |    | Theory                       | Test | Total         | TW    | PR       |
| Nil                              |           | FOD     |                        |    | 75                           | 25   | 100           | 50    | -        |
|                                  |           |         |                        |    |                              |      |               |       | Gr Total |
|                                  |           |         |                        |    |                              |      |               |       | 150      |

Rationale- Meat and poultry is a rapidly growing industry in India, with a vast scope for internal and external export market expansion. This course is designed to impart to the technician to acquire sufficient knowledge in the fields of meat, poultry and egg technology to enable him to supervise a meat processing / slaughtering plant and egg processing industry. The theory knowledge is suitably supplemented with practical to provide proper skills at shop floor level.

| COURSE CONTENTS                                                                                                                                                                                                                                                                                                                                                                                                             | Hrs | Mks |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|
| <b>1. INTRODUCTION</b>                                                                                                                                                                                                                                                                                                                                                                                                      |     |     |
| Meat animals and meat production, potential of meat and meat products in the Indian context.                                                                                                                                                                                                                                                                                                                                | 1   | -   |
| <b>2. EXAMINATION &amp; SLAUGHTERING OF ANIMALS</b>                                                                                                                                                                                                                                                                                                                                                                         |     |     |
| Ante-mortem and post-mortem examination of animals.                                                                                                                                                                                                                                                                                                                                                                         | 2   | 3   |
| Slaughter house practices, slaughtering methods, dressing and packaging                                                                                                                                                                                                                                                                                                                                                     | 3   | 6   |
| <b>3. COMPOSITION, STRUCTURE OF MEAT</b>                                                                                                                                                                                                                                                                                                                                                                                    |     |     |
| Composition of meat and nutritive value, mutton, pork, beef, poultry.                                                                                                                                                                                                                                                                                                                                                       | 3   | 6   |
| Structure of meat muscle                                                                                                                                                                                                                                                                                                                                                                                                    | 3   | 4   |
| Chemical and bio-chemical changes in meat colour, on set of rigor mortis.                                                                                                                                                                                                                                                                                                                                                   | 4   | 6   |
| Factors of spoilage, chemical and microbial spoilage.                                                                                                                                                                                                                                                                                                                                                                       | 4   | 6   |
| Grading of meat and meat cuts. (whole-sale, retail cuts)                                                                                                                                                                                                                                                                                                                                                                    | 2   | 4   |
| <b>4. PRESERVATION OF MEAT</b>                                                                                                                                                                                                                                                                                                                                                                                              |     |     |
| Methods of preservation- Thermal- Pasteurisation, sterilisation. Low temperature storage- Artificial tenderisation and ageing, storage of meat above freezing point, storage of meat below freezing point, changes in frozen storage. Preservation by lowering moisture- Drying and de-hydration, freeze-drying. Preservation by direct microbial inhibition- Irradiation, antibiotics. Preservation by curing and smoking. | 10  | 20  |
| Packaging of meat and meat products.                                                                                                                                                                                                                                                                                                                                                                                        | 2   | 6   |
| Beef- Corned beef. Pork- Sausages, frankfurters, salami, ham bacon, luncheon meat. Chicken-barbeque.                                                                                                                                                                                                                                                                                                                        | 5   | 10  |
| <b>5. EGG AND POULTRY</b>                                                                                                                                                                                                                                                                                                                                                                                                   |     |     |
| Introduction & production in India                                                                                                                                                                                                                                                                                                                                                                                          | 1   | 0   |
| Egg: Structure, composition and nutritive value of egg.                                                                                                                                                                                                                                                                                                                                                                     | 2   | 6   |
| Transportation of egg: Transportation and grading of egg.                                                                                                                                                                                                                                                                                                                                                                   | 1   | 4   |
| Increase in shelf life: Increase in shelf life of shell egg by physical and chemical method                                                                                                                                                                                                                                                                                                                                 | 1   | 4   |
| Freezing of Albumin and yolk: Changes due to freezing of albumin and yolk.                                                                                                                                                                                                                                                                                                                                                  | 1   | 3   |
| Egg products: Dehydrated egg powder, frozen egg.                                                                                                                                                                                                                                                                                                                                                                            | 1   | 4   |

**6. POULTRY PROCESSING & OTHER PRODUCTS**

|                                                                                                    |           |            |
|----------------------------------------------------------------------------------------------------|-----------|------------|
| Slaughtering and bleeding, scalding, de-feathering, evisceration, chilling, packaging and storage. | 1         | 4          |
| Sources and uses of bone meal, gelatine, casing, plasma and lard.                                  | 1         | 4          |
| <b>Total</b>                                                                                       | <b>48</b> | <b>100</b> |

**PRACTICALS:**

- 1). Dressing of Chicken (broiler).
- 2). Canned meat products.
- 3). Curing and Smoking of meat.
- 4). Freezing storage of chicken, meat and storage life study under various package materials.
- 5). Preparation of Sausages.
- 6). Preparation of Chicken barbeque.
- 7). Grading of market egg (shape, size, weight, visual examination of shell, egg contents).
- 8). Quality evaluation of egg (appearance, weight, Haugh unit of yolk and albumin, porosity and thickness of egg shell)
- 9). Preparation of meat pickles.
- 10). Preparation of corned mutton/beef/meat loaf.
- 11). Preparation of pre-cooked frozen hamburgers.
- 12). Visit to slaughterhouses.
- 13). Visit to model Poultry farm.
- 14). Visit to model Piggery.

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