FAKULTI PENGURUSAN DAN INDUSTRI HALAL

PROGRAM	**Diploma in Halal Product Manufacturing**
COURSE NAME	**Halal Ingredients And Additives In Manufacturing**
COURSE CODE	**DHM 3043**
CREDIT HOUR	**3**
SYNOPSIS	This subject covers methods involved in Halal product processing from sources of the raw material to selection of the suitable material used in the Halal product industry will be explained and discussed.
COURSE STRUCTURE	
CHAPTER	**TOPICS**
1	**Introduction** 1.1 Definition 1.2 Sources 1.3 Category 1.4 Group type 1.5 Advantages and disadvantages
2	**Halal Raw Material** 2.1 Source 2.2 Selection, Sourcing and Importation 2.3 Raw Material Handling and Transportation
3	**Halal Food Ingredients** 3.1 Animal sources 3.2 Plant sources 3.3 Biotechnology sources 3.4 Intermediate products
4	**Natural food colouring and synthetic** 4.1 Definition, Additional factor and sub group 4.2 Type 4.3 Classification

5	**Preservatives** 5.1 Definition and sub groups 5.2 Sorbate, Benzoate, sulphites, Phenols and format, nitrate, acetate, lactate and Propionate
6	**Antioxidant and acidity regulator** 6.1 Definition and sub group 6.2 Ascorbate (Vitamin C), Tocopherol (Vitamin E), Galates and eritorbate, lactic, citric and tartaric acids, phosphates, malate and adipate, succinate and fumarate
7	**Thickener, stabilizer and emulsifier** 7.1. Definition and sub groups 7.2. Alginate, a natural gum, other natural agents, Polioxithane, natural emulsifier, phosphate, cellulose, fatty acids
8	**PH controller and anti-caking** 8.1. Definition and sub groups 8.2. Acid and base minerals, chloride and sulfate, alkali metals, silicates, stearic and gluconate
9	**Flavour enhancer** 9.1. Definition and sub groups 9.2. Glumatate and guanilate, inosinate
10	**Antibiotic** 10.1. Bacitracin, Tailokin
11	**Miscellaneous** 11.1 Wax, synthetic glazes, 11.2 Leavening agents (improving agent) 11.3 Packaging gas 11.4 Sweetener 11.5 Foaming agents
12	**Additional chemical** 12.1. New chemicals 12.2. Enzymes 12.3. Flavorings Solvents

13	**Recent developments on biotechnology and food ingredient production** 13.1. Biotechnology in the production of food ingredients 13.2. Expansion of the recent food ingredient 13.3. Utilization of molecular techniques such as DNA analysis for Halal Aunthentication
14	**Halal Issues and Fatwa on usage of food additive** 14.1 General E-numbers issues 14.2 Carmine / cochineal extract (E 120), Ponceau 4R or cochineal red A (E 124) 14.3 Ascorbyl palmitate and stearate (E 304), Galates (E 312), Lecytyne (E 322) 14.4 Glycerol (E 422), fatty acids (E 430-436)and others 14.5 Phosphates (E 542), fatty acids (E 570), stearic (E 572) 14.6 Glutamate (E 620-625), E-640 Glycine and salt (natural amino acid) **14.7** Shellac (E 904),L-cysteine hydrochloride (E 920), aspartame (E 951 and others
References:	1. DeMan, J. M., Finley, J. W., Hurst, W. J., & Lee, C. Y. (2018). Principles of food chemistry (Vol. 478, p. 446). Gaithersburg: Aspen Publishers. (ISBN: 978-3-319-63605-4). 2. Sikorski, Zdzislaw. (2018). Fennema's Food Chemistry (Fifth Edition) – Edited by Srinivasan Damodaran and Kirk L. Parkin. Journal of Food Biochemistry. 42. 10.1111/jfbc.12483. (ISBN-13 : 978-1482208122)