REFERENCES:

1 Peavy, H.S., Rowe, D.R. and Tchobanoglous, G.C. (1986). *Environmental Engineering.* Mc Graw Hill Book Co., New York.

2. Rangwala, S.C. (1992). *Water Supply and Sanitary Engineering.* Charotar Publishing House, Anand.

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AG412 Biomass Management for Fodder and Energy

Course Description & Objectives:

To impart the fundamental knowledge on the importance of Bio resources, Bio energy and reactors.

Course Outcomes:

At the completion of the course the student will have:

1. *knowledge and skills on bio energy source technology*
2. *understanding of important of biomass in agriculture fields.*
3. *knowledge on alcohol and ethanol production and energy and environment management.*
4. *skill about residue manage*ment in agriculture fields.

Unit 1: Introduction to Biomass:

Introduction to biomass management, biomass resource assessment management techniques/supply chains,

Unit II: Production of Biomass:

Processing of paddy straw, densification- Extrusion process, pellets, mills and cubers, Bailing-classification, uses;

Unit III: Residue Management for Soil Conservation:

Residue management for surface mulch and soil incorporation, Paddy Straw choppers and spreaders as an attachment to combine Harvester, Mulch seeder,

Unit IV: Fodder Management:

Paddy Straw Chopper-cum-Loader, Balar for collection of straw; Processing of straw/ fodder for animal use;

Unit V: Use of Biomass in other Production:

Agricultural and horticultural use, cushioning material for fruits and vegetables, Mulching and Composting, Paper and cardboard manufacturing, Straw as a fuel.

TEXT BOOKS:

1. Chahal, D.S. (1985). Food, Feed and Fuel from Bio mass . IBH Publishing . Pvt. Ltd. NewDelhi.
2. Chakravarty, A. (1989). Bio Technology and other Alternative Technologies for Utilisation of Bio mass/Agrl.Wastes. Oxford & IBH Pub.Co.Pvt Ltd.

REFERENCES:

1. Alba S. A.E. Humphery and N.E. Milles. (1973). Bio Chemical Engineering (2 ed.).
2. Baily, J.E and D.F. Ollies. (1986). Bi Chemical Engineering Fundamentals (2 ed.). Prescott and Dunn Industrial Micro Biology.