



## COURSE SPECIFICATION 4<sup>th</sup> SEMESTER:

**Course Name** : Production and Formulation Technique of Biofarming  
**Code** : KP 242  
**Credit** : (2-2)

### Course Description:

This course study the application of biotechnology in industrial activities and agricultural business. This course studies various ways of formulating biological agents as biological fertilizers and commercial biopesticides, as well as producing biological fertilizers and biopesticides used in industry and agricultural business. To study this subject, students must have an understanding on the principles of microorganism management, isolation techniques and multiplication of biological agents, land and biological resources. This course is very important to introduce technology that is very useful for implementing and developing innovative business in crop cultivation technology in sustainable agriculture and agricultural product business.

### References:

Prescott et al. 2000. Microbiology  
Brock. 1988. Biology of Microorganism  
Ingold, C.T. & H.J. Hudson. 1993. The Biology of Fungi. Chapman & Hall.  
Ratna Siri dkk. 1982. Dasar Mikrobiologi  
Tortora et al. 2007. Microbiology an Introduction. Pearson Int'l Edition.  
Mantell, Mathews dan McHee. 1985. Principles of plant Biotechnology. London  
Sardjoko. 1991. Bioteknologi. Gramedia. Jakarta  
Yuwono, T. 2006. Bioteknologi Pertanian. Gadjah Mada University Press. Yogyakarta

### Topics:

1. Inoculum development; Carrier medium; Formula (liquid, pellet, granule, powder etc.); Product packaging
2. Production of activator & compost (POP), POC; Nitrogen Fixation Inoculum Production (Symbiotic and non-symbiotic); Phosphate solvent inoculum production; Production of rhizobacterial inoculum
3. Inoculum development (carrier medium, product formula and packaging)
4. Fungal biopesticide products; Bacterial biopesticide products; Vegetable biopesticide products for fungi, bacteria and insects
5. Crop transformation
6. Expression of resistance genes; GMO production and detection