Studying course: Master studies in Forestry and Natural Resources Management

Subject: Wood-Based Composite Panels

Professor/professors: Mladjan Popović

Status of the subject: electoral

ECTS number: 5

Condition: -

Goal of the subject:
To acquire the knowledge of particleboards, fibreboards, wood-cement boards and wood-plastic masses, concerning their manufacturing, technological process and applications. To master the characteristics of these materials in accordance with their unique properties and purpose.

Result of the subject:
The student becomes familiar with the composition of particleboards, fibreboards and wood-cement boards and understands the basic technological procedures, processes and equipment used in their production. The student is familiar with the properties and testing methods used to evaluate the quality these materials. The student is qualified to work in real processing conditions.

Content of the subject
Theoretical part:
Terms and definitions of wood-based composites, their classification and the general flow-charts of technological processes. Preparation of wood raw materials (wood particles and fibres). Transport and storage. Preparation of adhesives and blending operations for various types of raw material and different production processes. Mat formation, pre-pressing, pre-heating and moisture treatment of mat. Hot-pressing, extruding and moulding operations in the production of wood-based composite materials. Final processing, conditioning, formatting, sanding, coating. Standard requirements for the quality of produced wood-based composites. Factory control and standard test methods.
Practical part:
Materials balances and capacity calculations for processing operations. Laboratory work: characterisation and preparation of wood raw materials (particles and fibres); Blending and hot pressing operations in controlled laboratory conditions. Laboratory testing of wood-based composites.

References:

1. Thoemen, H., Irle, M., Sernek, M. (2010). Wood-Based Panels - An Introduction for Specialists. London, England: Brunel University Press.
2. Malony, M.T. (1993). Modern Particleboard and Dry Process Fiberboard Manufacturing, Miller Freeman Publ. San Francisko.
3. Suchsland, O., Woodson, G.E., (1986). Fiberboard Manufacturing Practices in the United States. Agric. Handb. 640. Washington, DC: U.S. Department of Agriculture

Number of active teaching lessons:	**Theoretical part of teaching:**	**Practical part of teaching:**

Methods of giving lectures:
Lectures, laboratory work, project work.

Knowledge evaluation (max 100 points)

Before exam obligations:	поена	**Final exam:**	поена
Activity during lectures	5	Writing exam	
Activity during practicals	5	Oral exam	50
Writing test	20		
Seminary	20		