

# **MENTORING AND TRAINING IN PATTERN MAKING USING 3D PRINTING FOR FOUNDRY PRACTICE AT SMK MUHAMMADIYAH 1 BANTUL**

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## **ABSTRACT**

SMK Musaba had been has facilities for its students to do casting practice. However, the patterns used do not vary because the teachers are not able to develop patterns. Previous studies shown that patterns can be made using 3D printer. The aim of this PkM DLK program is to assist and train teachers able to make patterns using a 3D printer.

This PkM program is implemented using mentoring and training methods. The subjects are delivered through lectures and discussions and also mentoring and training. The stages are an explanation of patterns, casting design, operation and maintenance of 3D printer, practicing the Ultima Cura application, designing pattern with CAD, importing files and setting printing parameters, pattern printing, pattern assembly, pattern finishing, and casting using the resulting pattern.

The target that has been successfully achieved is that SMK Musaba teachers are able to operate and apply 3D printer to create patterns with following stages of design pattern, setting printing parameters on Ultima Cura psstern, printing the pattern using 3D printer, assembling pattern on wooden plates, and finishing plate patterns. The patterns made have been used in casting practice for students.

Kata Kunci: *Mentoring and training, pattern making, 3D printer, SMK*