

## **ABSTRAK**

### **PENGEMBANGAN FITUR MANAJEMEN LABORATORIUM PADA PORTAL PRODI JURUSAN TEKNIK ELEKTRO MENGGUNAKAN METODE EXTREME PROGRAMMING UNTUK Mendukung REGULASI LABORATORIUM UNIVERSITAS LAMPUNG**

**Oleh**

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Penelitian ini bertujuan mengembangkan fitur manajemen laboratorium pada Portal Program Studi Jurusan Teknik Elektro Universitas Lampung untuk mendukung implementasi regulasi laboratorium secara efisien dan terintegrasi. Metode yang digunakan adalah Extreme Programming (XP). Sebanyak 17 kebutuhan fungsional dan 7 kebutuhan non-fungsional diidentifikasi melalui kuesioner terhadap 123 responden dari lima peran pengguna, yaitu mahasiswa, asisten laboratorium, kepala laboratorium, Pranata Laboratorium Pendidikan (PLP), dan dosen. Seluruh kebutuhan diimplementasikan dalam 12 iterasi pengembangan yang menghasilkan modul inventaris alat, peminjaman dan pengembalian alat, penjadwalan praktikum, pengajuan bebas laboratorium, pengelolaan dokumen dan SOP, pengaduan laboratorium, serta pelaporan aktivitas. Pengujian dilakukan melalui unit testing dengan seluruh skenario uji dinyatakan lulus, User Acceptance Testing (UAT) terhadap 72 responden dengan 663 skenario uji dan tingkat keberhasilan 98,19%, serta evaluasi System Usability Scale (SUS) dengan skor rata-rata 88,08 berkategori Good dan Acceptable dengan nilai Cronbach's Alpha 0,886. Sistem telah berhasil diimplementasikan pada server Universitas Lampung dan telah melalui serangkaian pengujian yang menunjukkan tingkat penerimaan pengguna yang baik.

Kata kunci: *Extreme Programming, Sistem Informasi, Manajemen Laboratorium, Usability Testing, User Acceptance Testing, Universitas Lampung*

## **ABSTRACT**

### **DEVELOPMENT OF LABORATORY MANAGEMENT FEATURES ON THE ELECTRICAL ENGINEERING DEPARTMENT STUDY PROGRAM PORTAL USING EXTREME PROGRAMMING METHOD TO SUPPORT LABORATORY REGULATIONS AT THE UNIVERSITY OF LAMPUNG**

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*This study aims to develop laboratory management features on the Study Program Portal of the Electrical Engineering Department at the University of Lampung to support the implementation of laboratory regulations efficiently and in an integrated manner. The method used is Extreme Programming (XP). A total of 17 functional requirements and 7 non-functional requirements were identified through a questionnaire distributed to 123 respondents from five user roles, namely students, laboratory assistants, laboratory heads, Laboratory Education Technicians (PLP), and lecturers. All requirements were implemented across 12 development iterations, resulting in modules for equipment inventory, equipment borrowing and return, practicum scheduling, laboratory clearance submission, document and SOP management, laboratory complaints, and activity reporting. Testing was conducted through unit testing with all test scenarios passing, User Acceptance Testing (UAT) involving 72 respondents with 663 test scenarios achieving a success rate of 98,19%, and a System Usability Scale (SUS) evaluation with an average score of 88.08 categorized as Good and Acceptable with a Cronbach's Alpha value of 0.886. The system has been successfully deployed on the Universitas Lampung server and has undergone a series of tests demonstrating a good level of user acceptance.*

*Keywords: Extreme Programming, Information System, Laboratory Management, Usability Testing, User Acceptance Testing, University of Lampung*