

ABSTRAK

Cahyono Putro, M. R. B. 2025. Sistem Informasi Penjadwalan Matakuliah Menggunakan Metode *Constraint Satisfaction Problem* (CSP) Berbasis *Website* (Studi Kasus: Program Studi Teknik Informatika Universitas PGRI Madiun). Skripsi. Program Studi Teknik Informatika, FT, Universitas PGRI Madiun. Pembimbing (I) Saifulloh, S.Kom., M.Kom. (II) Yessi Yunitasari, S.Kom., M.Cs.

Penjadwalan mata kuliah merupakan elemen krusial dalam menjamin kelancaran proses perkuliahan di perguruan tinggi. Di Program Studi Teknik Informatika Universitas PGRI Madiun, penjadwalan masih dilakukan secara manual menggunakan *Microsoft Excel*, sehingga sering menimbulkan konflik jadwal antar dosen maupun ruangan. Penelitian ini bertujuan untuk membangun sistem informasi penjadwalan berbasis web yang dapat mengotomatisasi pembagian jadwal dengan menggunakan metode *Constraint Satisfaction Problem* (CSP). Sistem dikembangkan menggunakan metodologi *Extreme Programming* dan dibangun dengan *framework Laravel* serta basis data *MySQL*. Penjadwalan mempertimbangkan variabel seperti dosen, ruangan, waktu, dan jenis mata kuliah, dengan penerapan constraint tertentu. Pengujian sistem dilakukan melalui metode black-box yang menunjukkan 100% validitas terhadap 7 skenario uji, serta evaluasi kualitas sistem menggunakan *Matriks McCall* pada aspek product operation. Hasil penilaian menunjukkan nilai total aspek *correctness* sebesar 30,2% (1,51), *reliability* 26,6% (1,33), *efficiency* 29,2% (1,46), *integrity* 33,2% (1,66), dan *usability* 30% (1,50), dengan total keseluruhan skor sebesar 2,984 atau 59,68%. Berdasarkan skala kelayakan, sistem ini berada pada kategori “cukup baik” dan dinyatakan layak digunakan sebagai media bantu dalam proses pengelolaan jadwal perkuliahan yang lebih efisien dan terstruktur.

Kata Kunci: Penjadwalan Mata Kuliah, *CSP*, *Laravel*, Sistem Informasi, *Extreme Programming*

ABSTRACT

Cahyono Putro, M. R. B. 2025. Course Scheduling Information System Using Website-Based Constraint Satisfaction Problem (CSP) Method (Case Study: Informatics Engineering Study Program, Universitas PGRI Madiun). Thesis. Informatics Engineering Study Program, FT, Universitas PGRI Madiun. Supervisors (I) Saifulloh, S.Kom., M.Kom. (II) Yessi Yunitasari, S.Kom., M.Cs.

Course scheduling is a crucial element in ensuring the smooth running of academic activities in higher education. At the Informatics Engineering Study Program of Universitas PGRI Madiun, scheduling is still carried out manually using Microsoft Excel, which often leads to conflicts involving lecturers and classrooms. This study aims to develop a web-based course scheduling information system that automates the scheduling process using the Constraint Satisfaction Problem (CSP) method. The system was developed using the Extreme Programming methodology and implemented using the Laravel framework and MySQL database. Scheduling decisions are based on variables such as lecturers, classrooms, time slots, and course types, with predefined constraints. System testing was conducted using black-box testing, which showed 100% validity across 7 test scenarios, and quality evaluation was carried out using the McCall Matrix on the product operation aspect. The evaluation results showed a correctness score of 30.2% (1.51), reliability 26.6% (1.33), efficiency 29.2% (1.46), integrity 33.2% (1.66), and usability 30% (1.50), with a total score of 2.984 or 59.68%. Based on the assessment scale, the system falls within the “fairly good” category and is considered feasible to be used as a tool to assist in managing course schedules more efficiently and systematically.

Keywords: *Course Scheduling, CSP, Laravel, Information Systems, Extreme Programming*