**ABSTRAK**

Penjadwalan mata kuliah merupakan proses penting yang mendukung kelancaran kegiatan akademik di Program Studi Matematika Universitas Sanata Dharma. Selama ini, proses penjadwalan masih dilakukan secara manual sehingga rentan terjadi bentrok dan memerlukan waktu yang cukup lama. Untuk mengatasi hal tersebut, penelitian ini menerapkan Algoritma Genetika sebagai solusi dalam menyusun jadwal secara otomatis dan optimal. Proses algoritma meliputi inisialisasi populasi, perhitungan nilai fitness, seleksi dengan *rank selection*, *one-point crossover*, *swap mutation*, dan evaluasi. Pengujian dilakukan dengan maksimal 100 iterasi dan variasi ukuran populasi. Hasil menunjukkan bahwa konfigurasi terbaik terdapat pada populasi 40, rasio mutasi:crossover 1:45, dan 50 iterasi, dengan nilai fitness tertinggi 0,333 dan hanya 2 pelanggaran. Konfigurasi ini juga mencapai konvergensi lebih cepat, yaitu pada iterasi ke-28. Dengan demikian, Algoritma Genetika terbukti efektif dalam menghasilkan jadwal kuliah yang optimal dan efisien.

Kata kunci: *Penjadwalan Mata Kuliah, Algoritma Genetika, Seleksi Peringkat (Rank Selection), One-Point Crossover, Swap Mutation, Evaluasi Jadwal, Nilai Fitness, Konvergensi, Otomatisasi Jadwal, Program Studi Matematika.*

**ABSTRACT**

*Course scheduling is a crucial process that supports the smooth operation of academic activities in the Mathematics Study Program at Sanata Dharma University. Currently, the scheduling process is still done manually, making it prone to conflicts and time-consuming. To address this issue, this study applies a Genetic Algorithm as a solution to generate course schedules automatically and optimally. The algorithm process includes population initialization, fitness calculation, selection using rank selection, one-point crossover, swap mutation, and evaluation. Testing was conducted with a maximum of 100 iterations and variations in population size. The results show that the best configuration is found at a population size of 40, mutation-to-crossover ratio of 1:45, and 50 iterations, achieving the highest fitness value of 0.333 with only 2 violations. This configuration also reached convergence earlier, at the 28th iteration. Thus, the Genetic Algorithm is proven effective in producing optimal and efficient course schedules.*

*Keywords: Course Scheduling, Genetic Algorithm, Rank Selection, One-Point Crossover, Swap Mutation, Schedule Evaluation, Fitness Value, Convergence, Scheduling Automation, Mathematics Study Program.*