

## ABSTRAK

**Theodora Calista Larasati. 2024. Implementasi Teori Jaringan Kerja Metode PERT Terhadap Pengajuan Proposal Organisasi Badan Eksekutif Mahasiswa Universitas Sanata Dharma Periode 2022/2023 Berbantuan Python. Skripsi. Program Studi Pendidikan Matematika, Jurusan Pendidikan Matematika dan Ilmu Pengetahuan Alam, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Sanata Dharma, Yogyakarta.**

Program kerja tidak dapat dilaksanakan jika tidak ada pengajuan proposal. Perlu adanya penjadwalan dalam pengajuan proposal agar seluruh program kerja dapat terlaksana. PERT dapat diterapkan dalam menjadwalkan setiap aktivitas dari pengajuan proposal. Penelitian ini bertujuan untuk (1) mengetahui 3 perkiraan waktu yang terjadi dalam setiap aktivitas pengajuan proposal BEM USD, (2) mengetahui model jaringan kerja serta jalur kritis dari pengajuan proposal BEM USD, (3) mengetahui penggunaan program Python dalam membantu mencari teori jaringan kerja metode PERT untuk pengajuan proposal program kerja BEM USD, (4) mengetahui probabilitas(dalam persen) waktu pengajuan proposal BEM USD 2022/2023 berdasarkan SOP BEM USD dan DPM USD. Metode penelitian terapan digunakan dengan subjek badan pengurus harian dan menteri kesekretariatan BEM USD serta kemungkinan waktu setiap aktivitas pengajuan proposal sebagai objeknya. Data penelitian diperoleh dengan metode studi pustaka serta menyebarkan kuesioner kepada subjek menggunakan *google form*. Dari penelitian ini didapatkan (1) 8 aktivitas didapatkan waktu tercepatnya 1 hari, 4 aktivitas waktu normalnya 4 hari, 3 aktivitas waktu normalnya 5 hari, 1 aktivitas waktu normalnya 6 hari, 2 aktivitas waktu terlamanya 7 hari, 1 aktivitas waktu terlamanya 8 hari, 3 aktivitas waktu terlamanya 10, dan 2 aktivitas waktu terlamanya 14 hari, (2) model diagram jaringan kerja terdiri dari 10 node yang terdiri dari 8 aktivitas serta *start* dan *finish* kemudian menghasilkan jalur kritisnya yakni A-C-D-E-F-G-H, (3) Program python digunakan mulai dari mencari ekspektasi waktu, jalur kritis, hingga probabilitas, (4) Probabilitas pengajuan proposal dapat selesai sesuai dengan SOP dalam waktu kurang dari sama dengan 21 hari didapatkan sebesar 0%.

**Kata kunci :** PERT, probabilitas, proposal, python

**ABSTRACT**

***Theodora Calista Larasati. 2024. Implementation of Network Theory Using The PERT Method for The Student Executive Board (BEM) 2022/2023 Organization Proposal Submission at Sanata Dharma University, With Python Assistance. Mathematics Education Study Program, Mathematics and Sciences Education Department, Faculty of Teacher Training and Education, Sanata Dharma University, Yogyakarta.***

*The work program cannot be implemented if there is no proposal submission. There needs to be scheduling in submitting proposals so that all work programs can be carried out. PERT can be applied in scheduling each activity of the proposal submission. This study aims to (1) find out 3 estimates of the time that occurs in each activity of the BEM USD proposal submission, (2) find out the work network model and critical path of the BEM USD proposal submission, (3) find out the use of the Python program in helping to find the PERT method work network theory for the submission of BEM USD work program proposals, (4) find out the probability (in percent) of BEM USD 2022/2023 proposal submission time based on BEM USD and DPM USD SOPs. The applied research method is used with the subject of the daily management body and secretariat minister of BEM USD and the time probability of each proposal submission activity as the object. The research data was obtained using the literature study method and distributing questionnaires to subjects using google form. From this research obtained (1) 8 activities obtained the fastest time 1 day, 4 activities the normal time 4 days, 3 activities the normal time 5 days, 1 activity the normal time 6 days, 2 activities the longest time 7 days, 1 activity the longest time 8 days, 3 activities the longest time 10, and 2 activities the longest time 14 days, (2) the work network diagram model consists of 10 nodes consisting of 8 activities and start and finish then produce the critical path, namely A-C-D-E-F-G-H, (3) The python program is used starting from finding time expectations, critical paths, to probabilities, (4) The probability of submitting a proposal can be completed in accordance with the SOP in less than equal to 21 days is obtained at 0%.*

***Keywords : PERT, probability, proposal, python***