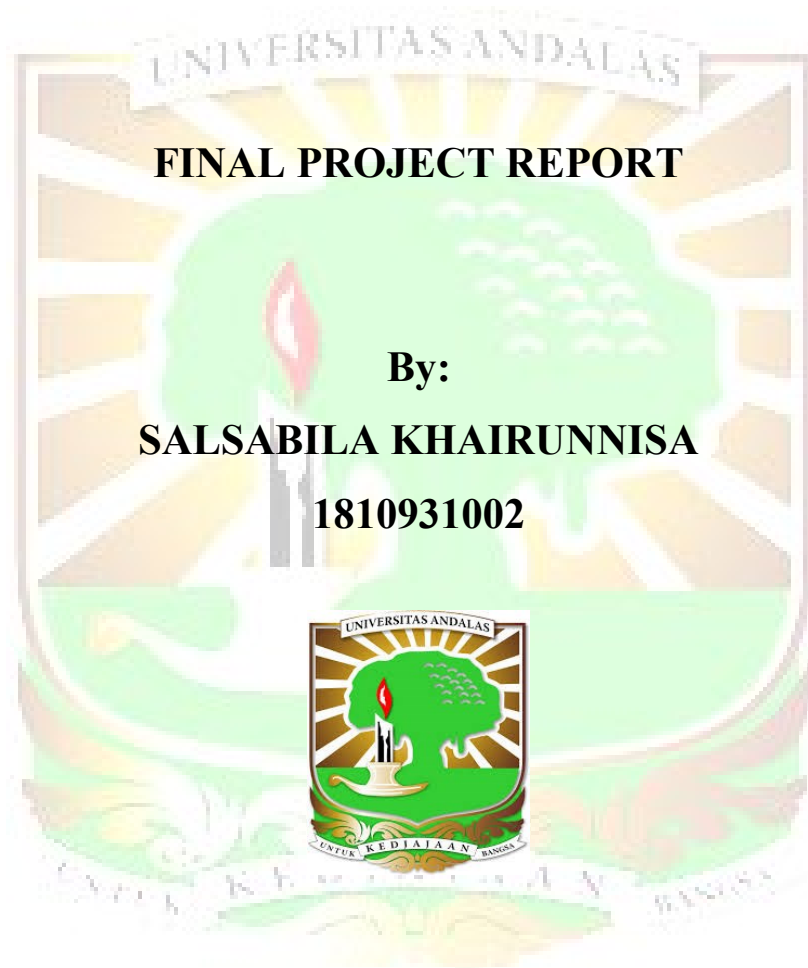


**OCCUPATIONAL HEALTH AND SAFETY (OHS)  
PLANNING AT THE FACILITIES AND  
INFRASTRUCTURE USED BY STUDENTS OF THE  
FACULTY OF ENGINEERING, UNIVERSITAS  
ANDALAS**



**DEPARTMENT OF INDUSTRIAL ENGINEERING  
FACULTY OF ENGINEERING  
UNIVERSITAS ANDALAS  
PADANG  
2023**

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AT THE FACILITIES AND INFRASTRUCTURE USED BY  
STUDENTS OF THE FACULTY OF ENGINEERING,  
UNIVERSITAS ANDALAS**

**FINAL PROJECT REPORT**

*A report submitted in fulfillment of the requirements for the award of the degree  
of Bachelor in Department of Industrial Engineering, Faculty of Engineering,  
Universitas Andalas*

**By:**

**SALSABILA KHAIRUNNISA**

**1810931002**

**Supervisor:**

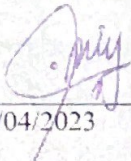
**Prof. Ir. Nilda Tri Putri, Ph.D., IPU**



**DEPARTMENT OF INDUSTRIAL ENGINEERING  
FACULTY OF ENGINEERING  
UNIVERSITAS ANDALAS  
PADANG  
2023**

## APPROVAL PAGE

The final project entitled “Occupational Health and Safety (OHS) Planning at the Facilities and Infrastructure Used by Students of the Faculty of Engineering, Universitas Andalas” prepared and submitted by Salsabila Khairunnisa is a mandatory requirement for fulfilling the degree of Bachelor of Engineering (Major in Industrial Engineering), has been examined and hereby recommended for approval and acceptance.

  
Date: 3/04/2023

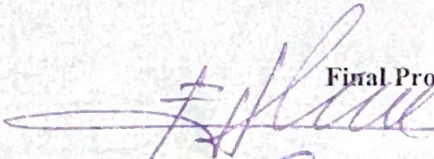
Prof. Ir. Nilda Tri Putri, Ph.D., IPU  
NIP. 197707162003122003  
Supervisor

### PANEL OF EXAMINER

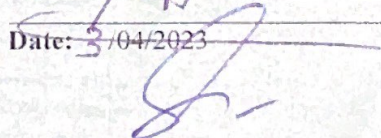
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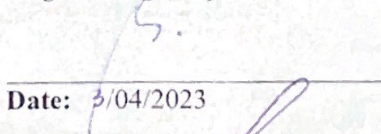
  
Date: 3/04/2023

Feri Afrinaldi, Ph.D.  
NIP. 198209202006041002  
Chair

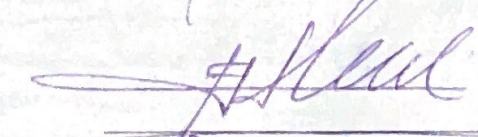
  
Date: 3/04/2023

Dr. Eng Lusi Susanti  
NIP. 197608152006042040  
Member

Accepted and approved in particular fulfilments for the degree of Bachelor of Engineering (Major in Industrial Engineering)

  
Date: 3/04/2023

Reinny Patrisina, Ph.D.  
NIP. 197610022002122002  
Chair of Industrial Engineering  
Undergraduate Program

  
Date: 3/04/2023

Feri Afrinaldi, Ph.D.  
NIP. 198209202006041002  
Chair of Industrial Engineering  
Department

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## ABSTRACT

*Learning and teaching activities, practicum activities, and other activities at the facilities and infrastructure used by students of the Faculty of Engineering, Universitas Andalas, have potential hazards that pose Occupational Health and Safety (OHS) risks. For example, a Miniature Circuit Breaker (MCB) that has no cover, branches and tree branches hitting power lines, dangerous use of electricity, broken ceilings, and so on. This happens because the facilities and infrastructure used by Engineering Faculty students have not implemented OHS properly. Therefore, research was carried out to determine OHS planning at the facilities and infrastructure used by students of the Faculty of Engineering, Universitas Andalas, based on sub-subclause 6.1.2 to 6.1.4 ISO 45001: 2018 with the Hazard Identification, Risk Assessment, and Risk Control (HIRARC) method. The OHS planning carried out in this research started with hazard identification, risk assessment, determining legal requirements and other requirements governing planning actions, determining planning actions, and verification. OHS experts are needed in the planning stage, especially at the risk assessment stage, determining planning actions, and verification. Based on the data processing and analysis that has been carried out, it is known that there are 119 hazards at the facilities and infrastructure used by students of the Faculty of Engineering, Universitas Andalas, with details of 12 hazards in the low-risk category, 100 hazards in the medium-risk category, and 7 hazards with high-risk category. Risk control from these hazards is determined based on a hierarchy of controls, namely elimination, substitution, engineering, administrative controls, and personal protective equipment (PPE) made in the HIRARC table. Examples of some of the controls made in the HIRARC table are installing MCB covers, pruning trees regularly, installing electrical hazard signs, repairing ceilings, and so on. In addition, there are several controls in the form of documents that support OHS at the facilities and infrastructure used by students of the Faculty of Engineering, Universitas Andalas, such as SOPs and work permits. The SOPs made in this research were in the form of SOPs for Laboratory Equipment and Room Maintenance and SOPs for Emergency Response, while the work permits made in this research were in the form of Permits for High-Risk Work.*

**Keywords:** hazard, risk, OHS

## ABSTRAK

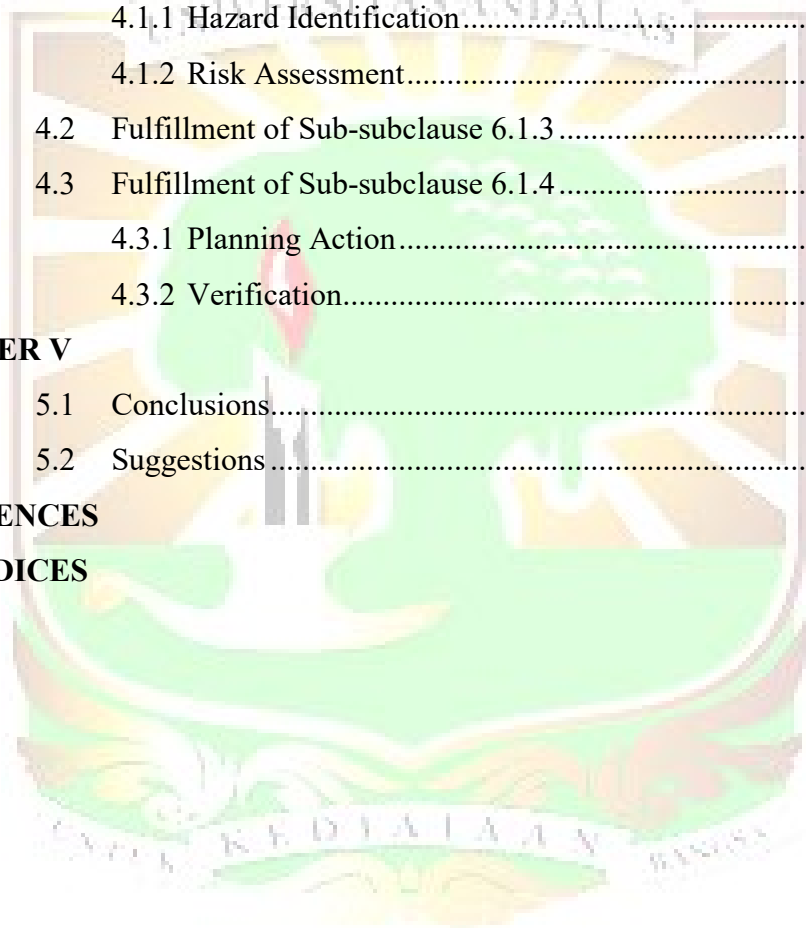
Kegiatan belajar dan mengajar, kegiatan praktikum, dan kegiatan lainnya pada sarana dan prasarana yang digunakan oleh mahasiswa Fakultas Teknik Universitas Andalas, memiliki potensi bahaya yang menimbulkan risiko Keselamatan dan Kesehatan Kerja (K3). Contohnya *Miniature Circuit Breaker* (MCB) yang tidak ada penutup, ranting dan dahan pohon yang mengenai kabel listrik, penggunaan listrik yang berbahaya, plafon rusak, dan sebagainya. Hal ini terjadi karena sarana dan prasarana yang digunakan oleh mahasiswa Fakultas Teknik belum menerapkan K3 dengan baik. Oleh karena itu, dilakukan penelitian untuk menentukan perencanaan K3 pada sarana dan prasarana yang digunakan oleh mahasiswa Fakultas Teknik Universitas Andalas berdasarkan sub-subklausul 6.1.2 sampai dengan 6.1.4 ISO 45001:2018 dengan metode *Hazard Identification, Risk Assessment, and Risk Control* (HIRARC). Perencanaan K3 yang dilakukan pada penelitian ini dimulai dari identifikasi bahaya, penilaian risiko, menentukan persyaratan hukum dan persyaratan lainnya yang mengatur tindakan perencanaan, menentukan tindakan perencanaan, dan verifikasi. Ahli K3 dibutuhkan dalam perencanaan tersebut, khususnya pada tahapan penilaian risiko, menentukan tindakan perencanaan, dan verifikasi. Berdasarkan pengolahan data dan analisis yang telah dilakukan, diketahui bahwa terdapat 119 bahaya pada sarana dan prasarana yang digunakan oleh mahasiswa Fakultas Teknik, Universitas Andalas, dengan rincian 12 bahaya dengan kategori risiko rendah, 100 bahaya dengan kategori risiko medium, dan 7 bahaya dengan kategori risiko tinggi. Pengendalian risiko dari bahaya tersebut ditentukan berdasarkan hirarki pengendalian, yaitu eliminasi, substitusi, rekayasa teknik, pengendalian administratif, dan alat pelindung diri (APD) yang dibuat pada tabel HIRARC. Contoh beberapa pengendalian yang dibuat pada tabel HIRARC adalah memasang penutup MCB, melakukan pemangkasan pohon secara berkala, pemasangan tanda bahaya listrik, memperbaiki plafon, dan sebagainya. Selain itu, terdapat beberapa pengendalian yang berbentuk dokumen yang menunjang perencanaan K3 pada sarana dan prasarana yang digunakan oleh mahasiswa Fakultas Teknik, Universitas Andalas, seperti SOP dan surat izin kerja. SOP yang dibuat pada penelitian ini berupa SOP Tanggap Darurat dan SOP Pemeliharaan Peralatan dan Ruang Laboratorium, sedangkan surat izin kerja yang dibuat pada penelitian ini berupa Surat Izin Kerja Berisiko Tinggi.

**Kata Kunci:** bahaya, risiko, K3

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