THE STRATEGIC PLAN
AND
OPERATING PLAN

FACULTY OF ENGINEERING
SAM RATULANGI UNIVERSITY, MANADO
YEAR 2022-2026

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CHAPTER VII CLOSING

PIG PRELIMINARY

The Faculty of Engineering at Sam Ratulangi University has spent 54 years of service, becoming one of the leading Engineering Faculties in the Eastern Indonesia Region and even the Pacific lip region; has contributed significantly to the provision of manpower in the field of engineering. Derivatively, the involvement of the Faculty of Engineering is also quite intensive in jobs; planning, consulting, infrastructure construction, which in this aspect is the third dharma function of the Tri Dharma of higher education; namely community service. This reality is something that encourages (faculty) so that institutionally, quality improvement efforts must be the main concern, so that the resulting Technical Education products (graduates) have a high level of competence so that they are able to compete in the job market.

On the basis of this thought, the implementation of education through an effective and efficient learning process must be maintained and even improved by continuously developing existing resources.

1.1 Position of the Faculty of Engineering Unsrat

The existence of the Faculty of Engineering as a higher education institution in North Sulawesi began with the issuance of the Decree of the Minister of PTIP No. 132 dated October 22, 1964, which stated that starting September 1, 1964 the Faculty of Engineering was established within the UNSULTTENG environment (later known as Sam Ratulangi University) with one major/study program, namely Civil Engineering S1.

With the increasing number of people's interest in entering the Faculty of Engineering, starting from the 1968 academic year, various shortcomings in terms of service to students, especially in the academic field, could be felt.

Through collaboration with the Civil Department of the Bandung Institute of Technology (ITB), the problems faced can be resolved through the AFFILIATE PROGRAM by sending students to continue their studies at ITB according to the available places. This program has been running for quite a long time, until one day it has fulfilled various requirements and conditions for the implementation of a higher education, so since 1982, the Faculty of Engineering Unsrat has started running its own graduate program.

In line with the development of national development, in 1976 there was a strong need for middle staff to be able to bridge the role of undergraduates with high school graduates as building implementers, especially in North Sulawesi.

Through feasibility studies and seminars with several agencies including the North Sulawesi P & K Regional Office, PLN and the Public Works Office, and through the Unsrat Rector's Decree No. 873/UM/thn 1977 March 7, 1977, opened the Diploma Program in Engineering Expert Education (PAT) with the Department of Civil and Architectural Engineering. A year later, in 1978, the Department of Mechanical Engineering and Electrical Engineering was opened. In 1982, the Technical Expert Education Program was approved by the Ministry of Education and Culture through the Decree of the Director General of Higher Education No. 052/Dj/Kep./1982 dated 17 November 1982.

Through the Master Plan for Development of the University of Sam Ratulangi in 1980, it is planned to add an Architectural Engineering S-1 Education program within the Faculty of Engineering. This plan was implemented in 1983 where new student admissions were carried out through the Pioneer Project III, East Indonesia.

Based on the Decree of the Director General of Higher Education No. 048/Dikti/Kep/1984, dated July 18, 1984, the Study Programs at the Faculty of Engineering Unsrat became:

1. Civil Engineering S-1 Study Program
2. Architectural Engineering S-1 Study Program
3. D-3 Civil Engineering Study Program
4. D-3 Architectural Engineering Study Program
5. D-3 Mechanical Engineering Study Program
6. D-3 Electrical Engineering Study Program

The six study programs at the Faculty of Engineering lasted until the 1988/1989 college year. In accordance with the recommendation from the Ministry of Education and Culture (in connection with the opening of the Polytechnic Program), at the Faculty Senate Meeting it was determined that starting from the 1989/1990 academic year, there would be no new admissions for the D-3 study program.

Through various efforts to develop the Faculty of Engineering, in 1993 the S-1 Electrical Engineering and S-1 Mechanical Engineering Study Programs were opened based on the Decree of the Director General of Higher Education, Ministry of Education and Culture No. 511/DIKTI/Kep/1992 and No. 512/DIKTI/Kep/1992 dated December 18, 1992.

In 1994, the Faculty of Engineering Unsrat received a request from several government technical agencies related to engineering and construction work in order to accept its employees with Diploma III Engineering certificates to continue their studies to the S-1 Engineering level. Through the decision of the Senate of the Faculty of Engineering in 1994, an advanced study program for S-1 Engineering was opened which was called the Cross Path Program. Those who can be accepted as undergraduate Engineering students through this program are those who have a D-3 Engineering certificate, have had a minimum of 2 (two) years of work experience at the diploma level, and have passed the filter/entry exam.

In 1998, efforts to develop the institutional quality of the Faculty of Engineering experienced an encouraging improvement with the government's approval of the establishment of 3 (three) new departments, namely; (*I*) Department of Mechanical Engineering (Decree of the Director General of Higher Education No. 212/DIKTI/Kep/1998 dated 3 July 1998) , (*II*) Department of Architecture and (*III*) Department of Electrical Engineering (Decree of the Director General of Higher Education No. 457/DIKTI/Kep/1988 dated December 18, 1998), so that the Faculty of Engineering Unsrat has 4 (four) majors.

In 1999, the Faculty of Engineering Unsrat made an adjustment step to the new paradigm of implementing higher education, namely a step in the form of optimizing the widest possible use of its resources. This step reactivates the D-3 Engineering Program. Rector's Decree No.145/J-12/KP/1999, dated June 30, 1999 regarding the appointment of a D-3 management team at the Faculty of Engineering, Unsrat, has indirectly shown the existence of the D-3 Program.

In 1999 the pioneering opening of the Master's level Education Program in the field of Civil Engineering received advice from the Directorate of Higher Education to establish a collaboration with the Bandung Institute of Technology (ITB) to be implemented. The team from the Faculty of Engineering, Unsrat Slim held an exploration of cooperation with parties from ITB. The exploration of this collaboration was successful so that starting the 2000 academic year, the Faculty of Engineering Unsrat began to carry out the Engineering Masters Program. Thus, starting from the 2000/2001 academic year, the high implementation units at the Faculty of Engineering Unsrat consist of:

Civil Engineering, with:

- Civil Engineering Undergraduate Study Program
- DIII Civil Engineering Study Program
- Civil Engineering Master's Degree Study Program (collaboration of ITB and Unsrat)

Department of Architecture, with:

- Architectural Engineering S1 Study Program
- DIII Architectural Engineering Study Program

Electrical Department, with:

- Electrical Engineering S1 Study Program
- DIII Electrical Engineering Study Program

Mechanical Engineering, with:

- Mechanical Engineering S1 Study Program
- DIII Mechanical Engineering Study Program

After the opening of the Manado State Polytechnic Program, after the opening of the Manado State Polytechnic, starting from the 2004/2005 academic year, it did not accept new students and only completed students who were still registered.

To participate in supporting national programs in the field of higher education, namely supporting the improvement of the nation's competitiveness and expanding public access to

higher education programs, the Faculty of Engineering has opened and implemented 2 new study programs, namely:

- City Area Design S1 Study Program (PWK).
  This study program is managed under the Department of Architecture, most of the teaching staff are permanent lecturers in the Department of Architecture and has been running for three academic years.
- Informatics Engineering S1 Study Program.
  This study program is managed under the Department of Electrical Engineering, most of the teaching staff are permanent lecturers in the Department of Electrical Engineering.

As of August 1, 2010 the Faculty of Engineering has 6 (six) undergraduate study programs, namely:

1. Civil Engineering Undergraduate Study Program
2. Architectural Engineering S1 Study Program
3. S1 T. Electrical Study Program
4. S1 T. Mechanical Study Program
5. S1 T. Urban Regional Planning Study Program
6. S1 T. Informatics Study Program

Furthermore, in 2010 Architecture developed itself by opening the Master of Architecture Study Program. The opening of this study program, in collaboration with the University of Indonesia. Similar to the Master's Degree in Civil Engineering, the Master's Degree in Architecture is then managed at the Postgraduate Program at Sam Ratulangi University. Based on the new rules of the Ministry of Research and Higher Education Technology, all study programs categorized as mono-disciplines can be managed at the Faculty of Engineering, Sam Ratulangi University, while the Master's Degree Program in Civil Engineering and Master's Degree Program in Architecture are managed at the Faculty of Engineering Unsrat.

Based on the needs of the community, in 2016 the Faculty of Engineering established the Environmental Engineering Undergraduate Study Program. This study program is administered by the Department of Civil Engineering. Furthermore, in its management, it is under the

Department of Civil Engineering. Furthermore, in 2018, the Faculty of Engineering began to open up to the Engineer Professional Program (PPI). Because the PPI is categorized as a multi-disciplinary program, the PPI Study Program in management is at the Postgraduate Program at Sam Ratulangi University.

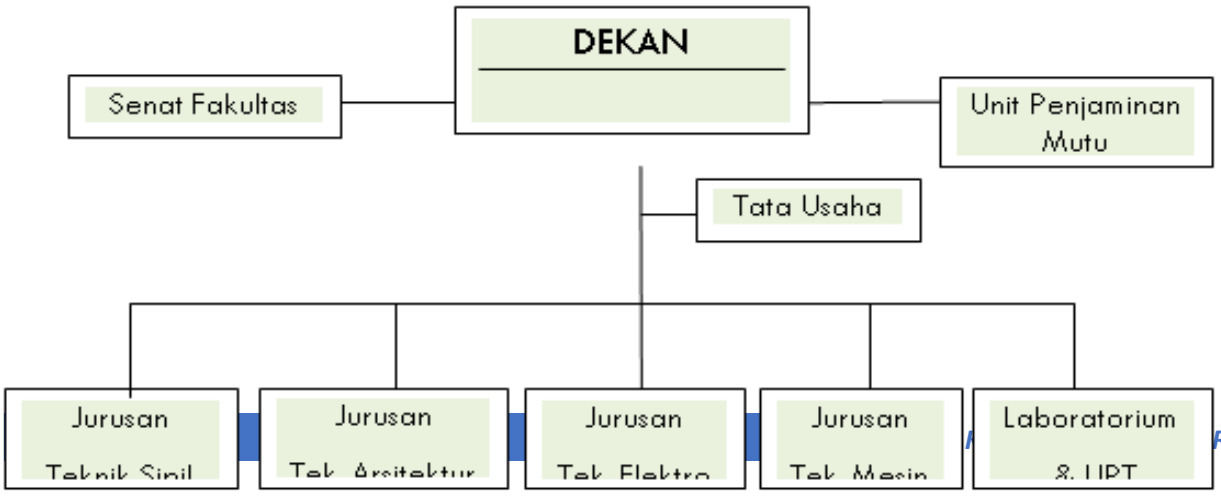
1.2 Actual Conditions of the Faculty of Engineering Unsrat

Since its establishment until 2019, the Faculty of Engineering has shown its progress and with a myriad of plans. As of 2019, the Faculty of Engineering, Sam Ratulangi University Manages 7 (seven) undergraduate study programs, namely,

1. Civil Engineering Undergraduate Study Program
2. Architectural Engineering S1 Study Program
3. Electrical Engineering S1 Study Program
4. Mechanical Engineering S1 Study Program
5. Undergraduate Urban Planning Engineering Study Program
6. Informatics Engineering S1 Study Program
7. Environmental Engineering S1 Study Program.

It is planned that in the future, the Faculty of Engineering will establish a new study program for undergraduate, postgraduate and doctoral degrees as well as the Architectural Profession Program. In its management later, it is hoped that all new study programs including Masters and Doctoral Degrees will be managed by the Faculty of Engineering, University of Samratulangi Manado.

The organizational structure of the Faculty of Engineering Unsrat is presented in Figure 1.



1.3 Vision, Mission and Goals

Vision of the Faculty of Engineering

The vision formulation of the Faculty of Engineering cannot be separated from the Vision of Sam Ratulangi University Manado. The existence of this relationship, the formulation has been determined :

Towards an International Class Engineering Faculty with Local Character

Furthermore, an explanation of the scope of this vision is directed at the challenges and opportunities in the Pacific Region at the present and future levels on an ongoing basis. For this reason, it is necessary to optimize internal and internal factors as components that are used as support.

The vision of the Faculty of Engineering at Sam Ratulangi University is a simple formulation and emphasizes the words international quality and local character. These two words are closely related to the vision of Sam Ratulangi University. The word international quality is derived from the word superior and the word local character is derived from the word cultured from the unsrat vision. So the Faculty of Engineering as an integral part of UNSRAT translates the vision

of UNSRAT into the Vision of the Faculty of Engineering so that it can be operationalized into something that can be operationalized in the engineering field.

International class quality standards in the vision of the Engineering faculty are oriented towards international accreditation. Thus, efforts to improve the quality of the Faculty of Engineering in the future aspire that all processes and products have quality that can be accepted and recognized internationally. However, this target will not make the Faculty of Engineering forget the local characteristics that become its identity. Characteristics of a faculty that works in the field of engineering higher education in North Sulawesi Province are maintained and developed.

Aware of its existence, the Faculty of Engineering in its development cannot be separated from the Southwest Pacific Region as a territory. This means that the development scenario of the Faculty of Engineering cannot be separated from this area. The potential of the West Pacific Territory will be used as an arena for achievement development so that the orientation of higher education products can meet their needs.

Figure 1.2 Southwest Pacific Region

To achieve the vision of the Faculty of Engineering, historically, it has been developed since its establishment in 1964. The stages of development are divided into several stages known as *Milestones* . Since its establishment, the development direction and policy has been more focused on *Inward Looking* with emphasis on consolidating resources and organization. Furthermore, development is carried out in line with the change in the paradigm of higher education which is no longer oriented to meeting minimum standards. The paradigm shift from meeting minimum standards to efforts to go beyond artificial boundaries makes the development of the Faculty of Engineering oriented towards *outward looking* while still relying on existing capabilities.

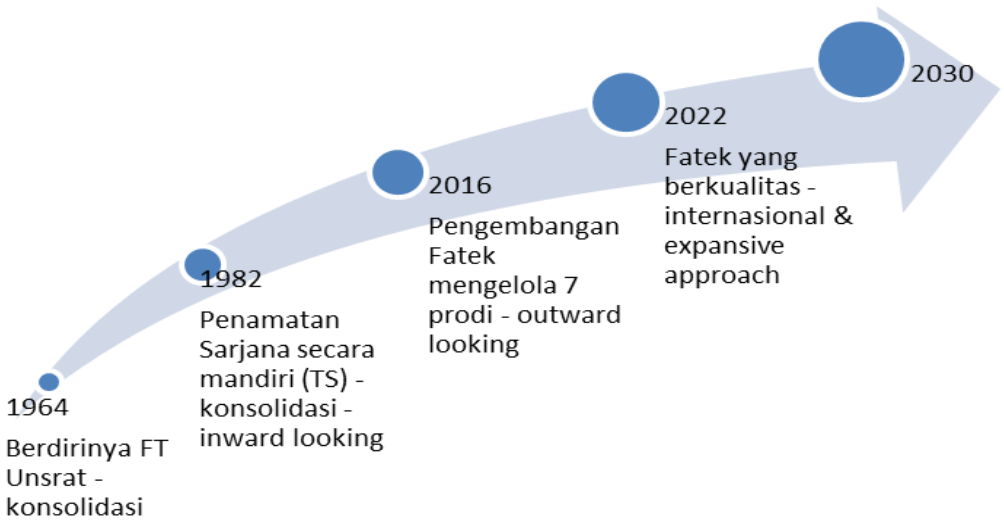


Figure 3. Milestones for the Development of the Faculty of Engineering Unsrat

To achieve the vision of the Faculty of Engineering, the mission has been formulated

Mission of the Faculty of Engineering

Mission is a guide used in the formulation of the program that will be developed by the Faculty of Engineering, Sam Ratulangi University. With the formulation of the mission, the stakeholders of the Faculty of Engineering, both internal and external, can contribute and express opinions and even possible program assistance. The internal party is Leaders, teaching staff, education staff and students are expected to actively participate in creating the right programs/activities as needed. External parties such as industry partners, local governments or professional organizations can play a role by providing information input and even resource assistance in the implementation of the Faculty of Engineering program.

The mission formulation of the Faculty of Engineering Unsrat is as follows:

1. Providing tertiary education services that are globally competitive by paying attention to local wisdom

2. Educate skilled human resources based on technology and pacific-oriented culture
3. Empowering collective strength in the implementation of *income generating activities* to improve welfare
4. Develop manpower resources, infrastructure, management systems and cooperation to ensure the sustainability of the faculty's operations

Destination

A goal or objective is a more specific description of the mission being set. The objectives of the Faculty of Engineering, SamRatulangi University:

a. Improving the quality of Tridama Higher Education services that are globally competitive by paying attention to local wisdom
b. Increasing access and skilled human resources based on technology and culture, oriented to the Pacific Region
c. Increasing the empowerment of collective strength in the implementation of *income generating activities* for welfare
d. Improving the development of the quality of management systems, infrastructure and cooperation to ensure sustainability.

CHAPTER II

BASE

DEVELOPMENT STRATEGY

2.1. Key Performance Indicators (KPI)

A. Background: Urgency of KPI Change

The Main Performance Indicators issued by the Minister of Education and Culture through the Decree of the Minister of Education and Culture Number 754/P/2020 are performance measures

new for universities to realize adaptive higher education based on

more concrete output .

Indonesia's 2045 vision to become a developed country with the fifth largest GDP in the world, needs to be supported by human resources who have the knowledge and abilities who are ready to compete at the international level. The nation's problems, as well as future job opportunities will no longer rely on natural resources, but rather on the human ability to work. Universities as institutions of science, knowledge, research, and community service, are required to be more focused in realizing their performance targets. One of the keys in regulating the performance of higher education institutions is through the Main Performance Indicators of State Higher Education (IKU-PTN) which are stipulated through the Decree of the Minister of Education and Culture. The development of higher education itself has been mandated through the Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 22 of 2020 concerning the Strategic Plan of the Ministry of Education and Culture for the Year 2020-2024. There are three development targets, namely: 1) Increasing the quality of learning and the relevance of higher education; 2) Improving the quality of lecturers and education staff; and 3) The realization of quality management of the Directorate General of Higher Education. Universities are expected to be able to manifest these three goals through increasing the capacity and quality of the education process and management that they are responsible for. The KPI-PTN determined must be able to focus on the three development mandates. Apart from being based on the mandate of developing higher education, the IKU-PTN must be able to become a measuring tool as well as an accelerator for the development of

the Independent Learning policy: Independent Campus which has been stipulated through the Regulation of the Minister of Education and Culture Number 3, 4, 5, 6, and 7 of 2020. Through the policy In this regard, the Ministry of Higher Education seeks to ensure that higher education institutions have high adaptability to changing times, have a more direct impact on society, and are able to achieve international higher education standards. Guarantees of convenience and sharper targets are also given to lecturers as the main resources in higher education. A magnificent building will feel empty without being filled by qualified lecturers. Lecturers are encouraged to be able to carry out problem-based, collaborative learning, and not only rely on learning in the classroom. As a final result, the Merdeka Campus policy is expected to provide a favorable climate for the development of student interests and talents. Students can hone their skills in innovative, flexible learning situations, based on student curiosity and interest, and according to problems in society and/or industry needs. So that when students graduate, they are able to become human resources who are ready to learn for life, are adaptive, and have high competitiveness. In order to realize the ideals of higher education, changes must be made in the performance assessment of PTN which will be assessed based on the KPI which is a performance contract between the PTN and the Ministry of Education and Culture. The latest KPI stipulated in the Decree of the Minister of Education and Culture Number 754/P/2020 has three main indicators. First, the quality of graduates as measured by graduates getting decent jobs, and students getting off-campus experience. Second, the quality of lecturers and lecturers is measured by Lecturers who are active outside the campus, Practitioners teach on campus, and the results of lecturers' work are used by the community and get international recognition. Third, the quality of the curriculum that has sub-indicators include study programs in collaboration with world-class partners, collaborative and participatory classes, as well as the existence of international standard study programs. In addition to binding to the performance contract, a good public policy must also regulate the funding scheme so that it is more in line with the indicators that have been set. Therefore, the amount of funding for the following year will be determined based on the level of achievement of the KPI target compared between PTNs with the same type of law. Changes in funding also have at least three main policies. Performance Contract-based funding between the Ministry of Education and Culture and PTN,

secondly there is a "Matching Fund" for the additional income that has been successfully generated by PTN, and finally there is a "Competitive Fund" or funds for aspiration projects that are planned by PTN.

B. Purpose: New KPI Basic Principles

The purpose of the establishment of the Main Performance Indicators of Higher Education established through the Decree of the Minister of Education and Culture Number 754/P/2020 is the achievement of rapid progress as the strategic plan of the Ministry of Education and Culture has been mandated by the Regulation of the Minister of Education and Culture Number 22 of 2020, as well as Campus policies. Independent. Every State Universities and Higher Education Service Institutions within the Ministry of Education and Culture must be guided by the main performance indicators in:

a . set KPI targets;

b . prepare contract documents or performance agreements;

c . implement KPI;

d . perform KPI monitoring;

e . perform KPI evaluation;

f . carry out continuous improvement of KPIs; and

g . report the results of the achievement of KPI

For the expected rapid progress, the new Higher Education Key Performance Indicators have been designed based on the following principles:

1. Increasing the relevance of higher education to the needs of industry, the business world, and the world of work. For example, the new Key Performance Indicators invite Practitioners to become Lecturers and encourage study programs to involve partners from industry, business, or the world of work in development and implementation.

2. Give freedom to universities to choose the advantages they want to develop.

New Key Performance Indicators, but freed up to focus on performance achievements on self-selected indicators. The new points system assesses universities based on overall achievement, but recognizes universities with excellence in certain indicators.

3. Prioritizing targets so that universities can focus on pursuing the changes that matter most. KPI 4: On-Campus Teaching Practitioners are important. Eight Key Performance Indicators have been selected as indicators of change that will have the most impact on the quality of graduates, the quality of lecturers, and the quality of the curriculum.

A more technical explanation of the KPI in accordance with the Decree of the Minister of Education and Culture of the Republic of Indonesia Number 754/P/2-2020 concerning Key Performance Indicators of State Universities and Higher Education Service Institutions within the Ministry of Education and Culture in 2020

- IKU-1 Graduates Get Decent Jobs
- IKU 2 Students Get Off-Campus Experience
- IKU 3: Lecturer Activities Outside Campus
- KPI 4: Practitioners Teach On-Campus
- IKU 5: Lecturer's Work Is Used By The Community Or Gets International Recognition
- IKU 6: Study Program in Collaboration with World Class Partners
- KPI 7: Collaborative and Participatory Class
- IKU 8: International Standard Study Program

2.2 Additional Performance Indicators

2.3. Engineering Faculty Work Contract

In an effort to achieve the target in the implementation of the KPI, a strategy is needed in the form of a performance contract. This is carried out by the Faculty of Engineering by preparing a performance contract that has been made in January 2021. The form of the contract is as follows:

No	Indicator Name	Unit	Volume

1.	Number of students who obtained KIP-Kuliah	Person	40
2.	Number of Entrepreneurial Students	Person	10
3.	Number of Study Programs that apply Independent Campus learning	Study Program	7
4.	Number of students participating in independent learning activities	Person	200
5.	Number of foreign students	Person	2
6.	The average cumulative achievement index of undergraduate students	GPA	3.38
7.	Percentage of study programs that collaborate with partners	Percent	57
8.	Number of study programs that have international accreditation or certification recognized by the government	Study Program	3
9.	Number of research titles and community service that study/apply local wisdom	Title	10
10.	Number of students with national/international achievements	Person	13
11.	Number of PKM Team students who became finalists in PIMNAS	Person	1
12.	Percentage of college graduates who work immediately within 1 year after graduation	Percent	60
13.	Percentage of permanent doctoral qualified educators who have competency/professional certificates that are recognized by industry and the world of work or come from professional practitioners, industry, the world of work	Percent	18
14.	Percentage of educators who engage in tridharma activities in other campuses, in QS 100 by field of science (QS 100 by subject), work as practitioners in the industrial world, or foster students who have achieved the lowest achievement at the national level in the last 5 years	Percent	19
15.	Percentage of educators with the position of head lector	Percent	12
16.	Percentage of educators with professorship positions	Percent	4.50
17.	Number of publications in accredited national journals (SINTA)	Title	
18	Number of publications in international journals	Title	

19	Number of publications in reputable international journals	Title	
20	Total intellectual property (KI) (Registered & Granted	Title	
21	Number of citations of scientific works	Title	
22	Number of R & D prototype titles	Title	
23	Number of patents issued to industry / used in society	Title	
24	Number of industrial prototypes	Title	
25	Number of innovation products	Title	
26	Number of research results of educators	Title	
27	Number of research results of educators to the community	Title	
28	Number of Research Outputs and PPM that are successfully International Recognition or Implemented by the community per number of educators	Title	
29	Budget Performance on the Implementation of RKA-K/L (minimum absorption percentage)	Percent	

2. 4. Values and Territorial Insights

The Faculty of Engineering, Sam Ratulangi University is located in Manado City, which is the city center for the first-level regional government of North Sulawesi Province (SULUT). Based on its geographical location, the province of North Sulawesi is locally bordered by the provinces of Gorontalo, Central Sulawesi, and North Maluku. With these geographical conditions, the existence of the Faculty of Engineering becomes strategic. The city of Manado with its complete infrastructure and complete facilities and infrastructure makes the Faculty of Engineering complement the power of the people of the city of Manado and its surroundings. This provides an external force in its development. The strategic location attracts the public to continue their education at the Faculty of Engineering. This is evidenced by the increasing public desire to study at the Faculty of Engineering Unsrat every year.

The Faculty of Engineering, which is one of the eleven faculties within Unsrat, has been established since 1960-1965. This shows that the Faculty of Engineering has grown and developed rapidly for 50 years in the eastern part of Indonesia. Over time, the Faculty of Engineering has four majors , namely:

- Civil Engineering
- Architecture
- Electrical Engineering
- Mechanical Engineering

The Civil Engineering Department has two study programs covering Civil Engineering and Environmental Engineering. The Department of Architecture has two study programs in Architecture and Urban and Regional Planning. Likewise, the Department of Electrical Engineering has two study programs, namely Electrical Engineering and Informatics Engineering. The Mechanical Engineering Department has one mechanical engineering study program. Thus, the Faculty of Engineering has seven study programs.

No.	Major	Study program	Since
1.	Civil Engineering	1. S1 Civil Engineering	1964
		2. S1 Environmental Engineering	2016
2.	Architecture	3. S1 Architecture	1984
		4. S1 PWK	2008
3.	Electrical Engineering	5. S1 Electrical Engineering	1992
		6. S1 Informatics Engineering	2009
4.	Mechanical Engineering	7. S1 Mechanical Engineering	1998

Table 2.1 Departments and study programs within the Faculty of Engineering

Students studying at the Faculty of Engineering, Sam Ratulangi University come from all levels of the first level (Province) in Indonesia. However, the existence of students is still dominated by students from the province of North Sulawesi.

New student admissions until the 2018/2019 academic year are carried out with three selection patterns. The selection pattern for student admissions is 1) National Selection for State Universities (SNMPTN). 2) Joint Selection for State University Entrance (SBMPTN), 3) Independent Selection called Tumou Tou (T2). For about a decade, most of the new students recruited were accepted through the SNMPTN pathway, followed by the T2 pathway and finally

the SBMPTN pathway. The two main admission pathways (T@ and SNMPTN) are carried out through a written test selection, while for SNMPTN, the invitation route is also selected based on achievement scores since high school (SMA).

Starting in 2019, Sam Ratulangi University has changed the method of admitting new students. This change follows the provisions set by the government through the Ministry of Research, Technology and Higher Education using the Higher Education Entrance Test Institute (LTMPT). Furthermore, for the SBMPTN path, the university entrance quota is a minimum of 20% of the capacity of each study program at PTN. Through the SNMPTN route, the minimum quota is 40% of the study program's capacity. As for the Independent Selection, a maximum of 30% of the study program's capacity quota.

The population development of the total number of students of the Faculty of Engineering Unsrat for the last four years from 2015 to 2018 has increased even though the number of new students entering has decreased. This condition occurs due to several things: First, it is caused by the number of incoming students is not the same as the number of outgoing students so that there is an increase in the total number of students. Second, the decrease in the number of new students decreased due to the fact that the number of lecturers who retired was not the same as the number of lecturers who entered. So the study program tends to reduce the quota of the number of students to maintain ideal conditions between the number of students and the number of lecturers. Third, the increase in the total number of students in the last three years, can also be caused by the large number of students who are registered but not active so that this is related to the condition of the first problem. Student inactivity is suspected to have something to do with the ability to pay in the Single Tuition Fee (UKT) system to replace the SPP system in higher education. The increase in UKT every year is a burden for the community. This condition is very vulnerable to *drop out* (DO) for the student concerned.

Table 2. Number of students for the 2015/2016 academic year.

No.	Major	Study program	Number of New Students	Total Number of

			(person)	Students (person)
1	Civil Engineering	S1 Civil Engineering	226	773
		S1 Environmental Engineering	-	-
2	Architecture	S1 Architecture	121	510
		S1 PWK	65	361
3	Electrical Engineering	S1 Electrical Engineering	62	216
		S1 Informatics Engineering	199	741
4	Mechanical Engineering	S1 Mechanical Engineering	51	211
Total Number of Students			724	2812

Table 2. Number of students for the 2016/2017 academic year.

No.	Major	Study program	Number of New Students (person)	Total Number of Students (person)
1	Civil Engineering	S1 Civil Engineering	166	908
		S1 Environmental Engineering	-	-
2	Architecture	S1 Architecture	102	588
		S1 PWK	95	424
3	Electrical Engineering	S1 Electrical Engineering	80	295
		S1 Informatics Engineering	143	850
4	Mechanical Engineering	S1 Mechanical Engineering	60	265
Total Number of Students			724	2812

Table 2.1 Number of students for the 2017/2018 academic year.

No.	Major	Study program	Number of New Students (person)	Total Number of Students (person)
1	Civil Engineering	S1 Civil Engineering	146	976
		S1 Environmental Engineering	32	32
2	Architecture	S1 Architecture	90	596
		S1 PWK	91	489
3	Electrical Engineering	S1 Electrical Engineering	80	346

		S1 Informatics Engineering	114	895
4	Mechanical Engineering	S1 Mechanical Engineering	56	304
Total Number of Students			646	3330

Table 2.2 Number of academic students 2018/2019

Table 2.1 Number of students for the 2018/2019 academic year.

No.	Major	Study program	Number of New Students (person)	Total Number of Students (person)
1	Civil Engineering	S1 Civil Engineering	168	1144
		S1 Environmental Engineering	27	59
2	Architecture	S1 Architecture	102	698
		S1 PWK	79	568
3	Electrical Engineering	S1 Electrical Engineering	83	429
		S1 Informatics Engineering	124	1019
4	Mechanical Engineering	S1 Mechanical Engineering	71	375
Total Number of Students			577	3907

The implementation of the teaching and learning system at the Faculty of Engineering, Sam Ratulangi University is cared for by teaching staff with S2 and S3 education. Most of these teaching staff completed their undergraduate education at the engineering faculty of Unsrat, while masters and doctoral degrees were completed both at Unsrat, domestic state universities and overseas universities. The distribution of teaching staff by department and level of education is presented in Table 3.

*Table 3. Distribution of permanent lecturers by last education level.**

No	Major	Last education			Teacher Big	Amount
		S3	S2	S1		
(1)	(2)	(3)	(4)	(5)	(6)	(7=3+4+6)
1.	Civil Engineering	29	40	0	5	69
2.	Architecture	11	35	0	2	46
3.	Electrical	7	38	0	-	45

	Engineering					
4.	Mechanical Engineering	6	18	0	-	24
	Total	53	131	0	7	184
	Percentage (%)	28,80	71.20	0	3.80	

** Data until December 2018*

The implementation of educational and teaching activities is supported by 42 administrative staff, 1 librarian, 9 technicians/labs and 11 cleaning staff.

To meet a standardization of the implementation of a study program required by the government, until 2019 all existing undergraduate study programs have followed the accreditation program except for the Environmental Engineering Study Program as a new study program that was established in 2016. The results of study program accreditation are presented in Table 4 as following:

Table 4. Accreditation results per study program within the Faculty of Engineering, Sam Ratulangi University

No.	Program name	Results Accreditation	Decree
1	Civil Engineering Undergraduate Study Program	A	2074/SK/BAN-PT/Akred/S/IX/2016
2	Environmental Engineering S1 Study Program		
3	S1 Architecture Study Program	A	1500/SK/BAN-PT/Akred/S/VIII/2016
4	Planning S1 Study Program Region and City	A	
5	Electrical Engineering S1 Study Program	B	021/BAN-PT/Ak-XIV/S1/VIII/2011
6	Informatics Engineering S1 Study Program	B	176/SK/BAN-PT/Akred/S/VI/2014
7	Mechanical Engineering S1 Study	B	359/SK/BAN-

	Program		PT/Akred/S/IX/2014

The results and accreditation ratings that have been obtained are valid for 5 (five) years from the date of issuance of the BAN-PT Decree.

Although when viewed from the value of accreditation, it shows that several study programs that have produced graduates can be said to be mature and good, but honestly the implementation of teaching and learning programs that produce engineering graduates in the Faculty of Engineering, Sam Ratulangi University still faces some crucial problems. For example, the average GPA data for faculty graduates from 2016 to 2018 has increased and is above three (> 3) but the average length of study for the same three years is still above five years (> 5). From the indicators of length of study and IP, the Faculty of Engineering has tried to make improvements to a better direction due to an increase in IP and a decrease in the length of study.

Another problem also concerns the indicator of the number of graduates. Although from the last three years starting from 2016 to 2018 there has been an increase in the number of graduates, it is still not balanced with the number of graduates. The unbalanced number of inputs and outputs indicates that the quality of teaching and learning still needs improvement and attention from the Faculty of Engineering Unsrat. The improvement is also related to the applied curriculum that must be reviewed after being implemented since 2015. The 2015 curriculum review must be carried out especially with the inclusion of the concept in the world of work and education, namely the Industrial Revolution 4.0 in Indonesia.

Table 5. GPA and average length of study for Bachelor of Engineering Graduates in 2016.

No		Study program	Amount Graduate of	Average GPA (Scale 1-4)	Average Study Length (Year; Month))
1.	S1	Civil Engineering	93	3.05	6 ; 3
2.	S1	Architecture	46	3.02	7 ; 3

3.	S1	Electrical Engineering	51	3.11	7 ; 0
4.	S1	Mechanical Engineering	14	2.99	6 ; 6
5.	S1	PWK	57	3.27	5 ; 9
6.	S1	T. Informatics	55	3.37	5 ; 2
7.	S1	Q. Environment	-	-	-
	Faculty		316	3.19	5 ; 9

Table 5a. GPA and average length of study for Bachelor of Engineering graduates in 2017.

No	Study program	Amount Graduate of	Average GPA (Scale 1-4)	Average Study Length (Year; Month))
1.	S1 Civil Engineering	78	3.26	5 ; 3
2.	S1 Architecture	126	3.32	5 ; 10
3.	S1 Electrical Engineering	20	3.28	5 ; 9
4.	S1 Mechanical Engineering	21	3.24	5 ; 6
5.	S1 PWK	54	3.46	5 ; 4
6.	S1 T. Informatics	100	3.36	5 ; 7
7.	S1 Q. Environment	-	-	-
	Faculty	399	3.32	5 ; 5

Table 5b. GPA and the average length of study for Bachelor of Engineering graduates in 2018 .

No	Study program	Amount Graduate of	Average GPA (Scale 1-4)	Average Study Length (Year; Month))
1.	S1 Civil Engineering	136	3.25	5 ; 5
2.	S1 Architecture	88	3.22	5 ; 7
3.	S1 Electrical Engineering	43	3.36	6 ; 0
4.	S1 Mechanical Engineering	14	3.30	5 ; 6
5.	S1 PWK	50	3.54	5 ; 3
6.	S1 T. Informatics	120	3.37	5 ; 4
7.	S1 Q. Environment	-	-	-
	Faculty	451	3.33	5 ; 3

CHAPTER III

EXTERNAL FACTOR DESCRIPTION AND INTERNAL

3.1 External Factors

Understanding of external factors is appointed according to the understanding in the SWOT analysis method as external factors that affect the existence of the Faculty of Engineering. External factors include elements of Opportunities and Threats. The elements of opportunity in question are all those that provide opportunities for the Faculty of Engineering to develop themselves according to the Key Performance Indicators (IKU). Likewise, the Threat element is all that poses a threat to the Faculty of Engineering in developing itself according to the Key Performance Indicators (KPI). So, in developing the Faculty of Engineering, it is based on the KPI by examining external factors which include Opportunities and Threats.

In developing the Faculty of Engineering, external factors that influence it have been formulated. These external factors include:

A. Opportunities

   Facts and data show that the elements of opportunity in developing the Faculty of Engineering are:

- The wider community is quite familiar with the Faculty of Engineering
- There are students who take part in PKM activities
- Some lecturers are continuing their doctoral studies
- Several educators are in the process of applying for a head lector
- Some of the educators in the proposal for Professorship
- Educators take part in the mutual shop program
- Educators participate in research with innovative titles

B. Threats

The threats in the development of the Faculty of Engineering are:

- The quality and competence of lecturers who are still not well known to the public,

- Students who excel in high school tend not to give priority to study at FT-UNSRAT.

- The lack of educators conducting research with industrial outputs that are used by the community

- The lack of international recognition research outputs.

3.2 Internal Factors

What is meant by internal factors are all factors that exist in the Faculty of Engineering in the form of strengths and weaknesses.

C. Strength

- The Pacific Court which introduced local wisdom.

- Cooperation with government agencies in terms of research to address endemic problems and/or assist in regional development.

- There are already students who do internships in institutions that partner with the faculty.

- There is an internal quality assurance mechanism.

- There are students who are involved in the lecturer's research.

- Many lecturers already have Intellectual Property Rights (HaKI)
- There are quite a number of lecturers with a history of publications indexed by SCOPUS, and some indexed by WOS Clarivate
- The existence of professional educators, as evidenced by a lecturer's professional certificate. (English is one of the assessment parameters).
- There is a guarantee for students who take KM that their learning outcomes can be recognized.
- Temporary study programs are prepared to follow the AUN-QA international certification
- FT-UNSRAT has an Entrepreneurial Court
- There are students who excel in Architectural Works , Robots , Choirs
- Waiting time for students to work under 1 year
- Several educators are in the process of submitting national journals
- Several educators are in the process of submitting international journals
- Several educators are in the process of submitting reputable international journals
- Many educators are in the RTUU-PNBP research process
- The number of research educators is increasing every year
- The number of teaching staff is increasing every year

D. Weakness (weakness)

- Discussions in the Pacific Constitutional Court are often not directly connected to the engineering world.
- Internships in agencies are not evenly distributed in all study programs.
- There are no lecturers who have produced internationally valid patents.
- The minimum number of lecturers who have produced patents

- The frequency of publication in international reputable journals is still not regular every year.

- There is no study program that works with world-class partners with criteria according to the guidelines

- There is no training program to improve English language skills for lecturers.

- Lecturers with professional skills (certification of competence from industry/BNSP) are not properly recorded.

- There are no practitioners who have become lecturers with NIDK.

- Methods in teaching and learning have not been included in quality control so it is difficult to know how many use case-based learning.

- There is no internationally accredited study program

- Tracer study is still lacking in detail

13. Lack of interest of lecturers and students to participate in PKM

14. Educators lack a relationship with the Q100 Campus

15. Limited funding for scientific citation support

16. Lack of industrial type proto research titles

17. Budget absorption has not reached 80%

CHAPTER IV
DEVELOPMENT STRATEGY ANALYSIS

4.1 Internal-External Factor Weighting and Rating

As a first step in analyzing the development strategy of the Faculty of Engineering using the SWOT method, the weighting and ranking of external and internal factors of the Faculty of Engineering has been carried out. This is illustrated as in table 4.1. From the table, it can be obtained scores of internal factors expressed by the number of strengths and weaknesses. From the tabulation results, it can be seen that the score obtained from Strength is positive at 2,3377 . The weakness also has a positive value of 1.5166 so that if you subtract the strength and weakness it produces a positive value of 0.8212. So, based on these results, the IFAS value is positive, namely 0.8212. This value indicates that the potential internal factors in the development of the Faculty of Engineering.

As for obtaining the value of external factors, it is very dependent on the scores obtained by Opportunities and Threats. These two factors are external factors that affect the development of the Engineering Faculty. From the results of the weighting and ranking shows that the scores obtained by the two external factors are positive. The total score of opportunities is 2.6739 .

Meanwhile, the number of threats was 1.7174. Thus the number of EFAS is 0.9565. Thus, it is a potential external factor in developing the Faculty of Engineering.

From the results of the weighting and ranking study above, we can find out the IFAS score stated by Strength and Weakness. Likewise with EFAS as indicated by the Opportunities and Threats scores. Both show that IFAS and EFAS have a positive value. This gives an indication that the development of the Engineering Faculty is supported by internal and external elements.

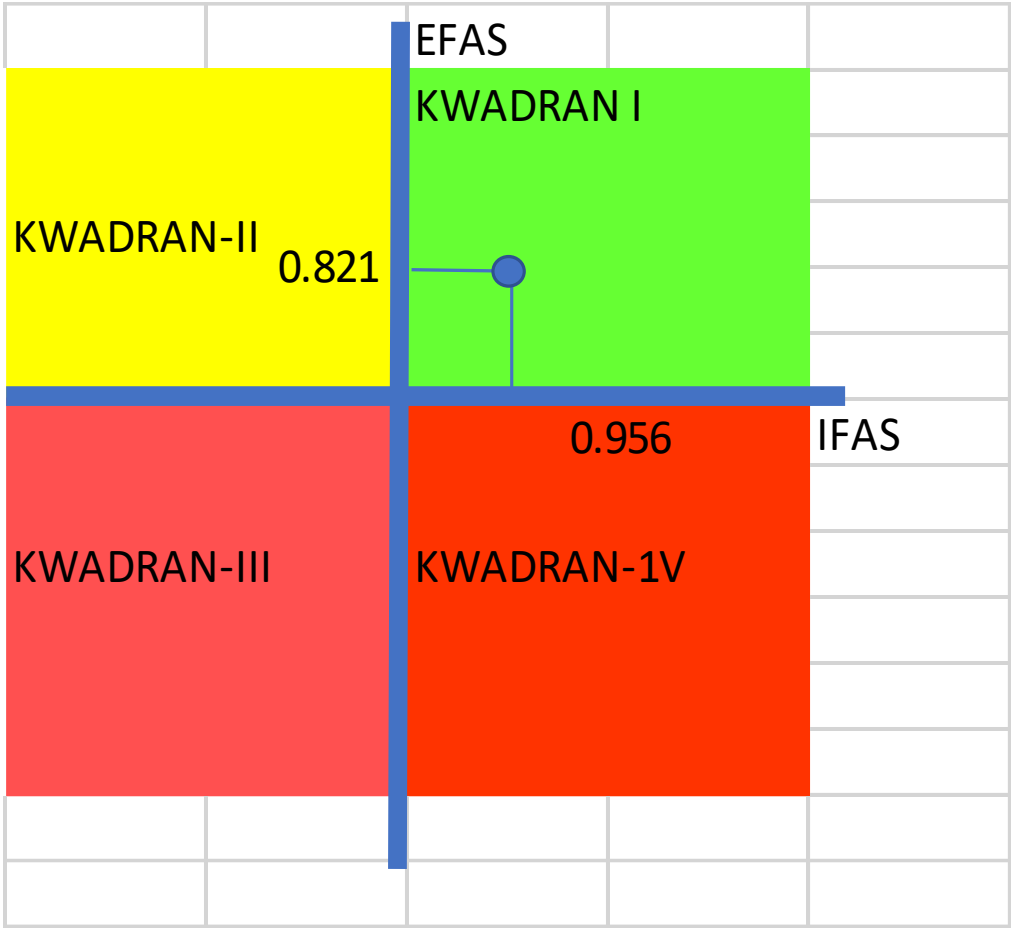
The description of the results of the weighting and ranking is stated as follows,

Table 4.1 Weighting and Rating

STRENGTH	Angka(i)	Bobot(ii)	Peringka	Skor(ii)x(iii)	
1. MK Kepasifikan yang memperkenalkan tentang kearifan lokal.	3	0.0199	5	0.099338	
2. Kerjasama dengan instansi-instansi pemerintah dalam hal riset untuk mengatasi masalah endemik dan/atau membantu dalam pembangunan daerah.	5	0.0331	5	0.165563	
3. Sudah ada mahasiswa yang melakukan magang di instansi-instansi yang bermitra dengan fakultas.	5	0.0331	5	0.165563	
4. Adanya mekanisme penjaminan mutu secara internal.	5	0.0331	4	0.13245	
5. Ada mahasiswa yang dilibatkan dalam penelitian dosen.	4	0.0265	4	0.10596	
6. Banyak dosen telah memiliki Hak atas Kekayaan Intelektual (HaKI)	3	0.0199	4	0.07947	
7. Ada cukup banyak dosen dengan riwayat publikasi terindeks SCOPUS, dan beberapa terindeks WOS Clarivate	4	0.0265	4	0.10596	
8. Adanya tenaga pendidik profesional, dibuktikan dengan sertifikat profesi dosen. (Bahasa Inggris merupakan sala	4	0.0265	4	0.10596	
9. Ada jaminan bagi mahasiswa yang mengikuti KM bahwa hasil belajarnya dapat diakui.	5	0.0331	3	0.099338	
10. 3 prodi sementara dipersiapkan mengikuti sertifikasi internasional AUN-QA	4	0.0265	4	0.10596	
11. FT-UNSRAT memililiki MK Kewirausahaan	3	0.0199	5	0.099338	
12. Adanya mahasiswa yang berprestasi dalam Karya Arsitektural,Robot,Paduan suara	5	0.0331	5	0.165563	
13. Waktu tunggu mahasiswa bekerja dibawah 1 tahun	5	0.0331	4	0.13245	
14. Beberapa tenaga pendidik dalam proses submit jurnal nasional	5	0.0331	5	0.165563	
15. Beberapa tenaga pendidik dalam proses submit jurnal internasional	5	0.0331	4	0.13245	
16. Beberapa tenaga pendidik dalam proses submit jurnal internasional bereputasi	5	0.0331	3	0.099338	
17. Banyak tenaga pendidik dalam proses penelitian RTUU-PNBP	5	0.0331	5	0.165563	
18. Jumlah penelitian tenaga pendidik meningkat per tahun	4	0.0265	4	0.10596	
19. Jumlah pengabdian tenaga pendidik meningkat per tahun	4	0.0265	4	0.10596	
					2.3377
WEAKNESESS					
1. Pembahasan dalam MK Kepasifikan sering kali belum terhubung langsung dengan dunia keteknikan.	5	0.0331	4	0.13245	
2. Magang di instansi tidak merata di semua prodi.	3	0.0199	3	0.059603	
3. Belum ada dosen yang menghasilkan paten yang berlaku secara internasional.	4	0.0265	3	0.07947	
4. Minimnya jumlah dosen yang sudah menghasilkan paten	4	0.0265	3	0.07947	
5. Frekuensi publikasi di jurnal bereputasi internasional masih belum reguler setiap tahunnya.	3	0.0199	3	0.059603	
6. Belum ada prodi yang bekerja sama dengan mitra kelas dunia dengan kriteria sesuai panduan	3	0.0199	3	0.059603	
7. Tidak adanya program pelatihan peningkatan kemampuan berbahasa Inggris untuk dosen.	3	0.0199	3	0.059603	
8. Dosen dengan keterampilan profesional (sertifikasi kompetensi dari industri/BNSP) tidak terdata dengan baik.	2	0.0132	2	0.02649	
9. Belum ada praktisi yang menjadi dosen ber-NIDK.	5	0.0331	3	0.099338	
10. Metode dalam belajar-mengajar belum masuk dalam pengendalian mutu sehingga sukar mengetahui berapa yang menggunakan pembelajaran berbasis kasus.	5	0.0331	3	0.099338	
11. Belum ada prodi yang terakreditasi secara internasional	5	0.0331	4	0.13245	
12. Tracer study masih kurang detil	3	0.0199	3	0.059603	
13. Kurangnya minat Dosen dan Mahasiswa untuk mengikuti PKM	5	0.0331	3	0.099338	
14. Tenaga pendidik kurang memiliki relasi dengan Kampus Q100	4	0.0265	5	0.13245	
15. Keterbatasan dana pendukung sitasi ilmiah	4	0.0265	4	0.10596	
16. Kurangnya judul penelitian proto tipe industri	5	0.0331	3	0.099338	
17. Serapan anggaran belum mencapai 80 %	5	0.0331	4	0.13245	
	151			3.854305	1.5166
					0.8212
PEMBOBOTAN dan PEMERINGKAAN EFAS			EFAS		
OPPORTUNITIES	Angka	Bobot	Peringka	Skor	
1. Masyarakat cukup mengenal FT-UNSRAT	3	0.0652	5	0.326087	
2. Adanya beberapa mahasiswa yang mengikuti Kegiatan PKM	4	0.087	5	0.434783	
3. Beberapa dosen sedang melanjutkan sudi S3	4	0.087	4	0.347826	
4. Beberapa tenaga pendidik dalam proses pengajuan lektor kepala	5	0.1087	4	0.434783	
5. Beberapa tenaga pendidik dalam rencana pengajuan Guru Besar	5	0.1087	4	0.434783	
6. Tenaga pendidik mengikuti program kedai reksa	3	0.0652	4	0.26087	
7. Tenaga pendidik mengikuti penelitian dgn judul inovatif	4	0.087	5	0.434783	
THREATS					2.6739
1. Kualitas dan kompetensi dosen yang masih kurang dikenal publik, sehingga belum banyak yang memilih mengikuti MK di FT-UNSRAT.	3	0.0652	3	0.195652	
2. Siswa yang berprestasi di SMA cenderung tidak memfavoritkan/memprioritaskan FT-UNSRAT untuk kuliah.	5	0.1087	4	0.434783	
3. Minimnya tenaga pendidik dgn luaran industri yg digunakan masyarakat	5	0.1087	5	0.543478	
4. Minimnya luaran penelitian recognisi internasional	5	0.1087	5	0.543478	
	46			4.391304	1.7174
					0.9565

4.2 SWOT Chart

To provide an overview of the potential presence of internal and external factors, it is necessary to explain in the form of a SWOT diagram. This diagram provides an explanation of the results of the previous weighting and ranking where the internal factor/IFAS has a positive value of 0.8212 while the external factor/EFAS also has a value of 0.9565.



SWOT diagram

From the results of the depiction on the diagram, it shows that the abscissa and ordinate of IFAS and EFAS are positive so that they are located in quadrant-1. With these results, this shows that the existing resources in the Faculty of Engineering have enormous potential to be developed.

The strategic plans that need to be developed are followed up by conducting further analyzes in accordance with the SWOT analysis stages.

4.3 Strategic Linkage Matrix.

Stages to obtain a strategic plan for the development of the Faculty of Engineering by conducting a strategic linkage study on internal and external factors. This study is carried out by first creating a relationship matrix table. The contents of this matrix table show the relationships of the symbolized SWOT elements.

This symbolization can be explained as: Streangth (S), Weakness (W), Threats (T) Opportunities (O). While the numbers refer to each sequence of the factors in it.

Table 4.2 Strategic Linkage Matrix

UNSUR	STRENGTH/KEKUATAN (S)	WEAKNESS/KELEMAHAN
	STRATEGI S-O	STRATEGI W-O
OPPORTUNITY PELUANG	S11,S3,S19,O2,O6,S12	W3,W4,O6,07
	S4,S13,O1	W6,W11,O4,O5,O7
	S17,S18,S5,O7	W9,W10,W1,O3,O4,O5
	S10,S7,O3,O4,O5	W8,W9,W10,O3,O4,O5
	STRATEGI S-T	STRATEGI W-T
THREATS ANCAMAN	T1,T2,T3,T4,S8,S12,T5	W6,W14,W15,W17,T1,T4
		W15,W17,,W6,T1
	T2,T1,T5,S12,S8	W16,W10,W4,W3,T3,T4
		W7,W8,T1
		W12,W17,T1,T2

The results of this linkage matrix show that there is a relationship between each SWOT element. This relationship resulted in the formulation of a strategic plan for the development of the Faculty of Engineering which was stated in the TOWS matrix table.

	STRENGTS (KEKUATAN)-S	WEAKNESSES(KELEMAHAN)-W
MATRIKS TOWS	S11. FT-UNSRAT memililiki MK Kewirausahaan	W3. Belum ada dosen yang menghasilkan paten yang berlaku secara internasional.
	S3,Sudah ada mahasiswa yang melakukan magang di instansi-instansi yang bermitra dengan	W4. Minimnya jumlah dosen yang sudah menghasilkan paten
	S19. Jumlah pengabdian tenaga pendidik meningkat per tahun	W5. Frekuensi publikasi di jurnal bereputasi internasional masih belum reguler setiap tahunnya.
	S4. Adanya mekanisme penjaminan mutu secara internal.	W6. Belum ada prodi yang bekerja sama dengan mitra kelas dunia dengan kriteria sesuai panduan
	S13. Waktu tunggu mahasiswa bekerja dibawah 1 tahun	W11. Belum ada prodi yang terakreditasi secara internasional
	S17. Banyak tenaga pendidik dalam proses penelitian RTUU-PNBP	W9. Belum ada praktisi yang menjadi dosen ber-NIDK.
	S18. Jumlah penelitian tenaga pendidik meningkat per tahun	W10. Metode dalam belajar-mengajar belum masuk dalam pengendalian mutu sehingga sukar mengetahui berapa yang menggunakan pembelajaran berbasis kasus.
	S5. Ada mahasiswa yang dilibatkan dalam penelitian dosen.	W1. Pembahasan dalam MK Kepasifikan sering kali belum terhubung langsung dengan dunia keteknikan.
	S10. 3 prodi sementara dipersiapkan mengikuti sertifikasi internasional AUN-QA	
	S7. Ada cukup banyak dosen dengan riwayat publikasi terindeks SCOPUS, dan beberapa	
	S8. Adanya tenaga pendidik profesional, dibuktikan dengan sertifikat profesi dosen. (Bahasa Inggris merupakan salah satu parameter penilaian).	
	S12. Adanya mahasiswa yang berprestasi dalam Karya Arsitektural,Robot,Paduan suara	

OPPORTUNITY	UNSUR SWOT (PROGRAM S-O)	UNSUR SWOT (PROGRAM W-O)
(PELUANG)-O	MEMFASILITASI DAN MENGEMBANGKAN KETERLIBATAN MAHASISWA PADA PENELITIAN DA	MEMFASILITASI TENAGA PENDIDIK DALAM MEMPATENKAN DAN MEMPUBLIKASIKAN HASIL PENELITIAN
O2. Adanya beberapa mahasiswa yang mengikuti Kegiatan PKM	MEMPERKECIL WAKTU TUNGGU MAHASISWA BEKERJA	MENINGKATKAN AKREDITASI PRODI
O6. Tenaga pendidik mengikuti program kedai reka	MENDORONG DAN MEMFASILITASI TENAGA PENDIDIK DALAM MELAKUKAN PENELITIAN INOV	MENGEMBANGKAN METODE MENGAJAR BERBASIS E-LEARNING
O1. Masyarakat cukup mengenal FT-UNSRAT	MEMBUKA PROGRAM STUDI BARU MENURUT STRATA PENDIDIKAN	MENINGKATKAN IPK MAHASISWA
O7. Tenaga pendidik mengikuti penelitian dgn judul inovatif		
O3. Beberapa dosen sedang melanjutkan studi S3		
O4. Beberapa tenaga pendidik dalam proses pengajuan lektor kepala		
O5. Beberapa tenaga pendidik dalam rencana pengajuan Guru Besar		

THREATS(ANCAMAN)-T-	UNSUR SWOT (PROGRAM S-T)	UNSUR SWOT(PROGRAM W-T)
T2. Siswa yang berprestasi di SMA cenderung tidak memfavoritkan/mempric	MEMPRODUKSI PENELITIAN LUARAN INDUSTRI, MENGADAKAN PAMERAN DAN MEMPERKEN	MEMBANGUN RELASI DENGAN UNIVERSITAS BEREPUTASI INTERNASIONAL (Q-100)
T3. Minimnya tenaga pendidik dgn luaran industri yg digunakan masyarakat	MENGEMBANGKAN MINAT BAKAT DAN PRESTASI MAHASISWA	MEMFASILITASI SITASI KE UNIVERSITAS BEREPUTASI
T4. Minimnya luaran penelitian recognisi internasional		MENINGKATKAN FUNGSI LABORATORIUM DAN PERPUSTAKAAN
T1. Kualitas dan kompetensi dosen yang masih kurang dikenal publik, sehingga belum banyak yang memilih mengikuti MK di FT-UNSRAT.		MENGIKUTSERTAKAN TENAGA PENDIDIK pada PELATIHAN/KURSUS UNTUK PENGEMBANGAN KOMPETENS
		MENGEFEKTIFKAN TRACER STUDY SEBAGAI ALAT EVALUASI SISTEM

CHAPTER V

AND STRATEGIC PLAN

OPERATING PLAN

5.1 Strategic Plan

Based on the results of the analysis described in the TOWS table, the main points of the strategic plan of the Faculty of Engineering, Sam Ratulangi University from 2021 to 2024 can be described as follows:

a. Facilitate and develop student participation in research that produces products that can be utilized by the community
b. Minimize waiting time for alumni students to work
c. Encouraging and facilitating education personnel to conduct innovation research
d. Opening a new study program according to Educational strata
e. Improving Industrial Research and promoting for use by the Society
f. Develop student interests, talents and achievements
g. Facilitate educators in patenting research results
h. Improve study program accreditation
i. Developing e-learning-based teaching methods
j. Increase Cumulative Index and Reduce Study Time
k. Increasing cooperation with internationally reputed universities
l. Holding banch marking with nationally reputable universities
m. Improve the function of laboratories and libraries
n. Involving educators and education staff in courses and training as well as education levels
o. Carry out tracer studies and prepare an internal evaluation system

5.2 Operational Plan

No	Renc. Strategic	Renc. Operational	Destination	Person responsible	Executor	Implementation time and target				
						2021	2022	2023	2024	2025

1.	a. Facilitate and develop student participation in research that produces products that can be utilized by the community c. Encourage and facilitate educational staff to conduct innovative research e.Improve industrial research and promote it for public use g. Facilitating educators in patenting research results	1.Recommend educators in research involving students (RTUU) 2. Create a theme, title and research roadmap for lecturers in each KDK to produce new products or product development 3. Conduct periodic exhibitions on the production of research results to the public. 4. Cooperating with institutions/agencies for productive research activities 5. Cooperating with LP2M Unsrat in patenting research results	1. Increase the involvement of educators in research 2. Provide opportunities for students to be involved in research 3.Produce research products Which can be used by the community 4. Produce Research Road Map documents in each KDK 5. The public knows and believes in the quality of research products 6. The establishment of a wider network of cooperation 7. Has a patent that makes a positive contribution.	Faculty leaders, work teams and committees	Working team and committee	100 10 themes 50 jdl 1 x 10 MOA 20	150 15 themes 75jdl 1x 15 MOA 25	200 20 themes 100 jdl 1x 20 MOA 30	250 25 themes 150 1x 25 MOA 35	300 30 Theme 125 1x 30 MOA 40
2.	b. Minimize waiting time for alumni to work	2.1. Establish cooperation with government and private institutions in the recruitment of workers 2.2 Prepare job vacancy information media through electric media and bulletin boards	1. Minimize unemployment 2. Make it easier for students to access job vacancies	Faculty leaders, work teams and committees	Working team and committee	1.5 yrs	1yr	8 mths	7 months	6 months
3.	d. Opening a new study program	3.1 Opening of new strata-3 study programs 3.2 Opening of new strata-2 study programs 3.3 Opening of new strata-1 study programs 3.4 Opening of professional study programs	1. Provide opportunities for lecturers to improve educational status 2. Supporting the improvement of study program accreditation 3.Improve the quality of Teaching	Faculty leaders, work teams and committees	Working team and committee	Preparation	2S-3, 2S2 1Profession	2S-1	1S-1	
	Increasing Study Program Accreditation	4.1 Increasing Accreditation of Architecture Study Program 4.2 Increasing Accreditation of Civil Study Program 4.3Improvement of Accreditation of	1.Improving the quality standard of the education process 2. Placing the Faculty of Engineering as an International Educational Institution	Faculty leaders, work teams and committees	Working team and committee	3 AU	3 AU 2 excel	2 superior	2superior	1excellent

4.		Electrical Study Program 4.4Improvement of Accreditation of IT Study Program 4.5Machinery Study Program Improvement 4.6 Improvement of Environmental Engineering Study Program 4.7 Improving PWK Study Program 4.8 International Accreditation of Ars,Civil,IT Study Program	3. Completing educational strata to answer educational needs. 1. Placing FT as an educational institution that excels through student activities 2. Supporting the needs of athletes, artists and skilled workers for local and national needs 3. Support government programs in the field of SMEs, Sports and the Arts	Faculty leaders, work teams and committees	Working team and committee	3 groups of activities	2local 1national	3local 2national	4local 3national	1international 3national 4local
5.	f. Develop student interests, talents and achievements	5.1. Organizing groups of interest in Robotics/computers, arts and sports 5.2. to hold robotic/compuer, sports and arts events	1. Doing modernization in the field of teaching 2. Facilitate students to easily learn learning materials 3. Efficiency and Effectiveness of Knowledge Transfer to Students 4. Provide the widest possible access in obtaining references and research equipment for the completion of studies and scientific development	Faculty leaders, work teams and committees	Working team and committee	60 All MK Done Entire Lab and library Preparation	80 All MK adjustment adjustment 2 each Lab	100 All MK Adjustment Adjustment 4	120 All MK Adjustment Adjustment 8	140 All MK Adjustment Adjustment 16
6.	i.Developing e-learning-based teaching methods j. Increasing the Cumulative Index and reducing study time m.Improve the function of laboratories and libraries	6.1 . Development of e-learning teaching modules. 6.2.Make RPS and evaluation method for each MK 6.3.Developing SOP for Teaching System 6.4.Creating laboratory and library SOPs 6.5.Provide equipment, practicum modules and rules 6.6. Doing project collaboration	1. Increase the ability and skills of educators and education staff 2. Cooperating with other educational institutions to improve teaching materials and scientific insights 3. The publication of research works	Faculty leaders, work teams and committees	Working team and committee	According to the contract work	According to the work contract	According to the contract	According to the contract	According to the contract
	n. Involving educators and	7.1. Taking courses, training and coaching 7.2.Encouraging participation in doctoral studies								

7.	education staff in courses and training as well as education levels k.Improve cooperation with internationally reputed universities l. Holding banch marking with nationally reputable universities	7.3. Cooperation teaching / guest lecturer 7.4. Research collaboration 7.5 Community Service 7.6.Journal writing cooperation 8.1.Banch Marking at reputable universities	by lecturers and students. 1. Gain experience and knowledge on the success of other educational institutions 2.Get information on the development of FT 3. Able to carry out Tridharma activities of college by collaborating	Faculty leaders, work teams and committees	Working team and committe e	According to the contract According to the contract	According to the contract According to the contract	According to the contract According to the contract	According to the contract According to the contract	According to the contract According to the contract
8.	o. Implement study tracer and prepare internal evaluation system	8.2.Creating an evaluation system for teaching, research and service aspects				Every quarter	Every quarter	Every quarter	Every quarter	Every quarter

CHAPTER VI
CLOSING

We are grateful to the presence of God Almighty because it is with His wisdom and participation that the strategic and operational plans can be completed. We express our gratitude to all educators and education staff and even all parties for the completion of this document. We believe that the cooperation that has been given by all parties has helped us to complete this document. We hope that this document will provide direction so that the development of the Faculty of Engineering will be achieved in accordance with the targets that have been set. Hopefully this document will be useful for all of us.