BRIEF DESCRIPTION OF THE SURVEY

(Evaluation of the current training program – For graduate students)

1. Objectives

The objectives of this survey is to take feedback of graduate students who graduated since 2014 about the two major training programs offered by SEE: The Electrical Engineering Program and the Control and Automation Engineering program. The surveys serve as input for SEE and HUST to improve the program curriculum, quality of service, etc.

This survey is performed by the SEE. Similar surveys are carried out by the Office of Students Affairs for all graduate students, with a broader range of questions.

2. Respondents

Graduate students from promotion 54 to promotion 58. 190 students answered this survey.

3. Methodology

The survey was created using Google form. It was broadcast to students via SEE website, Facebook fanpage, and email addresses of graduate students.

4. Key findings

- The program provide students with good knowledge and skills to fulfill their workplace job.
- Most students find job which closely relate to their program. Half of respondents find no difficulty applying for job.
- The assistance from University and SEE in student study and career orientation receives good feedback
- Most students think that the program should impove the balance between theory and practice. More experimental activities are needed

QUESTIONAIRE SURVEY FOR NEW GRADUATES

Dear newly graduated students,

Congratulations on your completion of the University training program and officially receiving your Diploma Hanoi University of Technology!

School of Electrical Engineering, Hanoi University, Hanoi University of Technology is implementing a project to review, evaluate and take measures to improve the quality of training to meet the needs of technical human resources in the field of Control & Automation, Electrical Engineering in particular and Electricity industry in general.

We take your opinions very seriously, refer and consider them in improving training programs as well as quality of engineers and bachelors graduate in order to meet the increasing demand of the labor market.

Survey results will be presented in the form of statistical data. We would like to guarantee the information you provide will be completely confidential and used for the right purpose mentioned above.

Thank you for your cooperation.

A. Personal Information

1. Full Name

2. Class

3. Phone Number

4. Email

5. Course Code

6. Year of Graduation

7. Filed of Education

Control and Automation

Electrical Engineering

8. Specialized Education Area

Automatic Control

Industrial Automation

Instrumentation and Industrial Informatics

Electric Power System

Electrical and Electronics Equipment

9. Graduation Grade

Excellent

Very Good

Good

Average

10. CPA accumulation points upon graduation

11. Language Level at graduation. Please specify what certificate? (TOEIC, TOEFL,IELTS ...) and scores) (Eg: TOEIC: 450)

B. Information on Current Status

1. **Describe your current employment situation**
   - Job closely match the program of study
   - Job does not match the program of study
   - Studying a different field
   - Pursuing graduate study
   - Job quite matches the program, actually studying new field
   - Working and studying at the same time
   - Unemployed
2. **2. Your employment potential/career potential in the near future**
   - Good
   - Fair
   - Very good
   - Bad
3. **What difficulty you have had applying for jobs**
   - Professional knowledge and skill not adequate
   - Don’t have information about employers
   - Foreign language skill not adequate
   - No difficulty at all
   - Lack of practicall skill
4. **What advantages you had when applying**
   - The HUST brand name
   - Good skills
   - Training program adequately provide skills and knowledge
5. **General knowledge and skills in the program**
   - Good
   - Fair
   - Very good

- Bad

6. **The laboratory facilities and duration of experimental activities**
   - Good
   - Fair
   - Very good
   - Bad
7. **How the program helps you develop soft skills**
   - Good
   - Fair
   - Very good
   - Bad
8. **How the program helps you with analytical thinking and critical thinking**
   - Good
   - Fair
   - Very good
   - Bad
9. **How is the ability to apply theory into practice**
   - Good
   - Fair
   - Very good
   - Bad
10. **How the program helps you in doing independent research**
    - Good
    - Fair
    - Very good
    - Bad
11. **The program curriculum is suitable for students**
    - Good
    - Fair
    - Very good
    - Bad
    - Very bad
12. **The program has a balance between theory and practice**
    - Good
    - Fair
    - Very good
    - Bad
    - Very bad
13. **Laboratory and experimental activities are adequate**
    - Good

- Fair
- Very good
- Bad
- Very bad

14. Students receive support for course materials, scientific research

- Good
- Fair
- Very good
- Bad
- Very bad

15. Students are assissted with career orientation

- Good
- Fair
- Very good
- Bad
- Very bad

16. Students acquired skills and knowledge in the future workplace during their study

- Good
- Fair
- Very good
- Bad
- Very bad

17. Students receive orientation and guides about personal values, career orientation and personal growth

- **Good**
- **Fair**
- **Very good**
- **Bad**
- **Very bad**

18. Which software do you find neccessar for your current employment

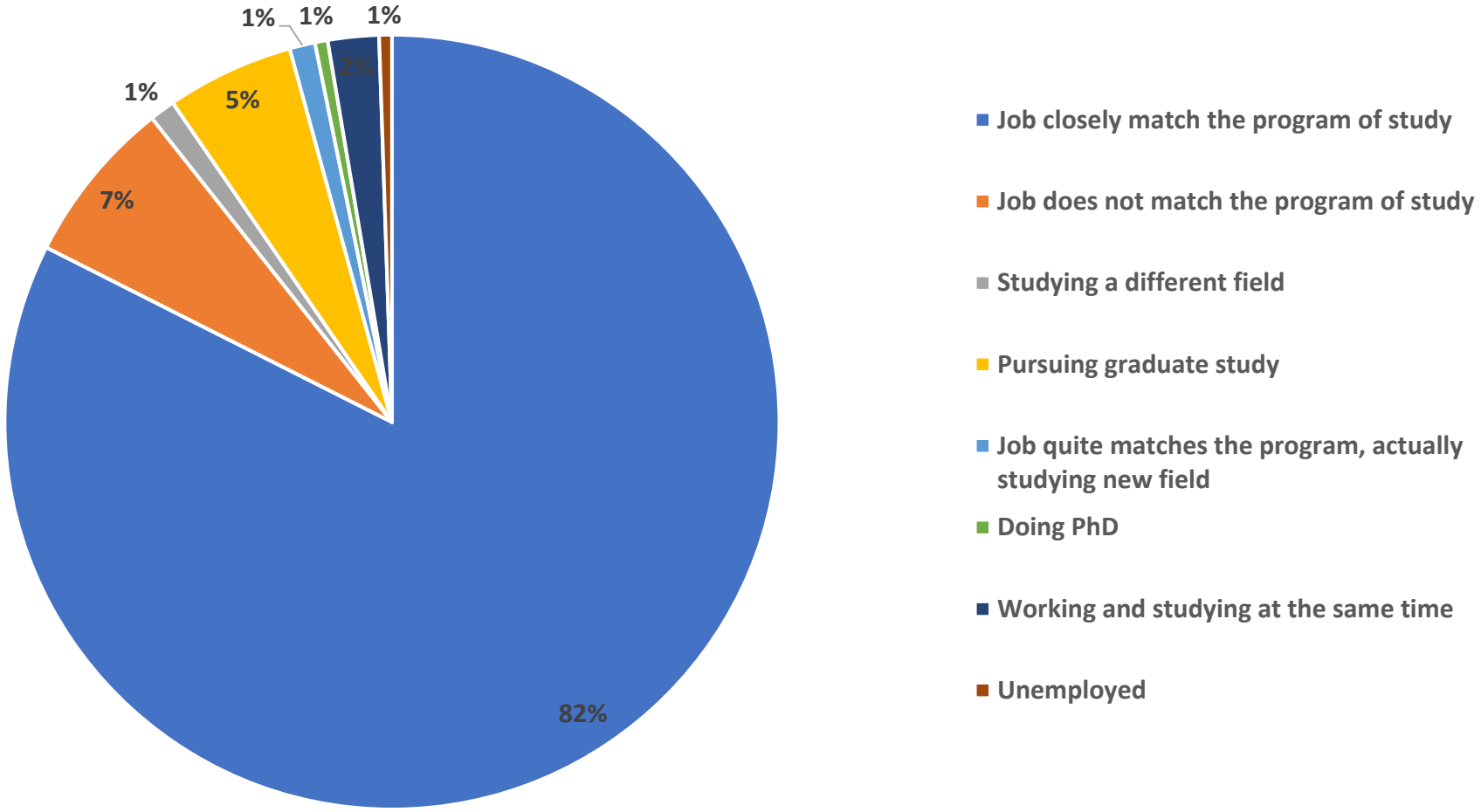
- Matlab & Simulink, NX, CATIA, phần mềm thiết kế 3D, 2D
- Autocad, Matlab & Simulink
- Autocad, Matlab & Simulink, PLC (Siemens, Mitsubishi, Omron, Rockwell Automation,....)
- Autocad, PLC (Siemens, Mitsubishi, Omron, Rockwell Automation,....)
- Autocad, Pss/E, microsoft office, balmorel

19. Other Opinions

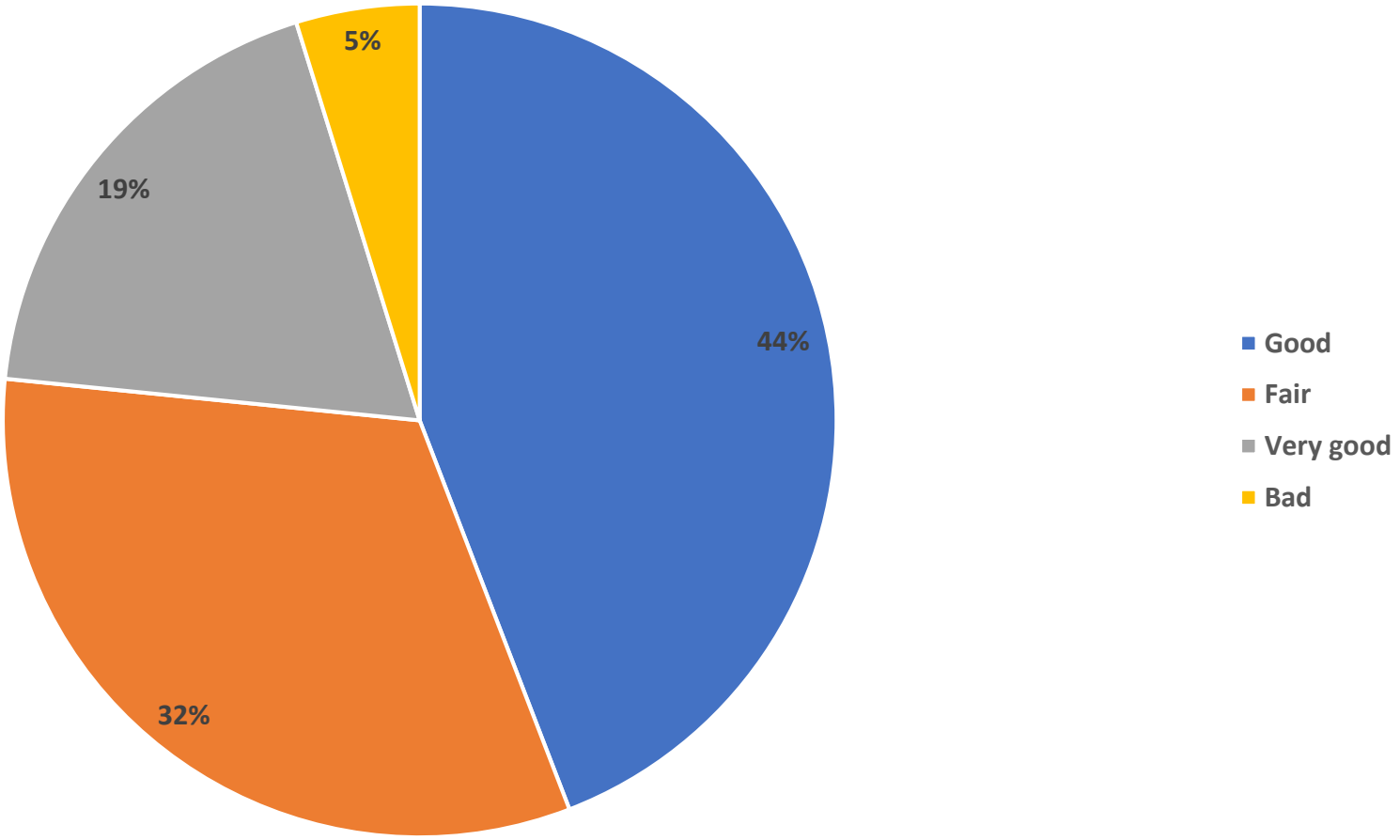
Please click the Submit button to finish the Survey Form.

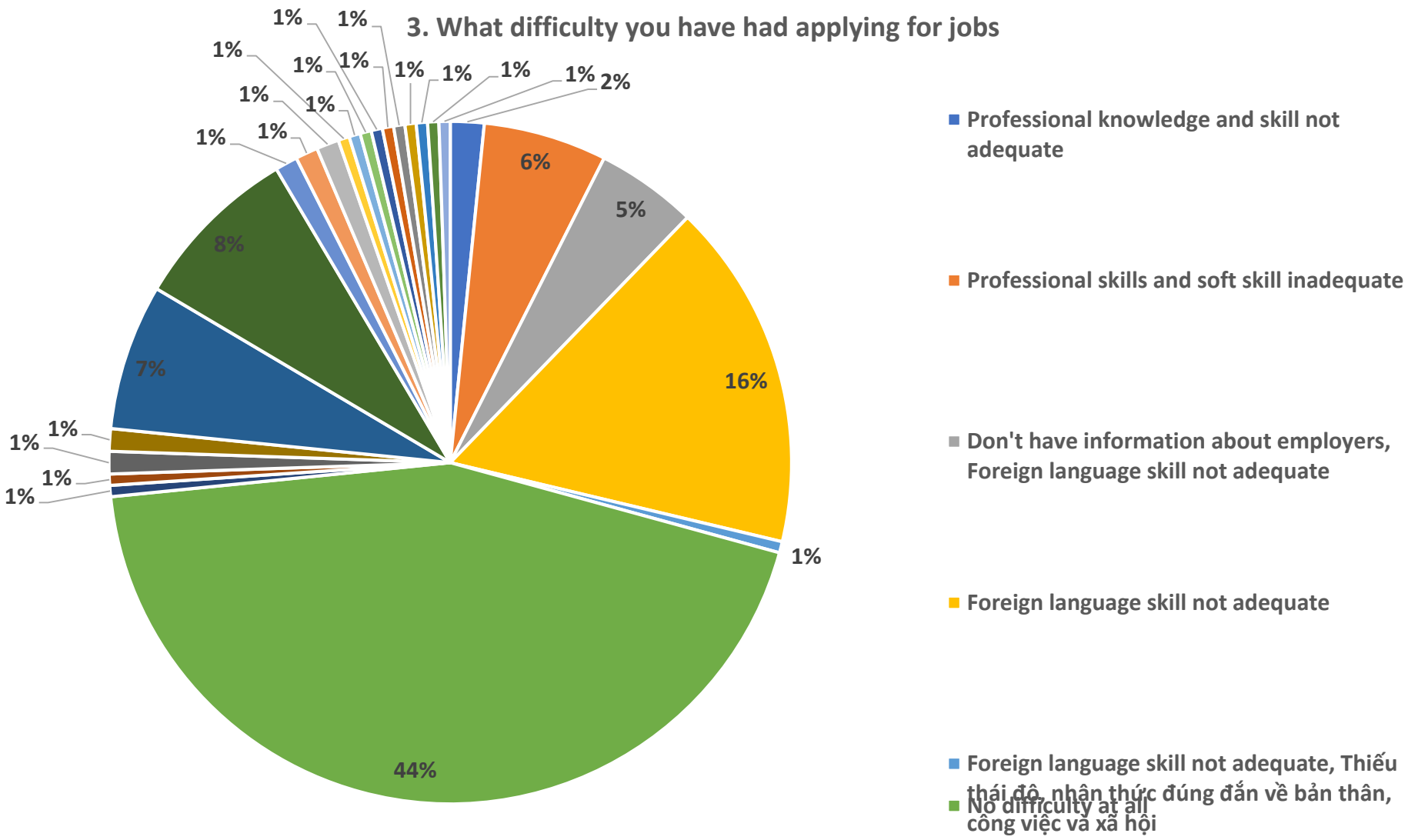
Thank you for your cooperation!

1. Describe your current employment situation

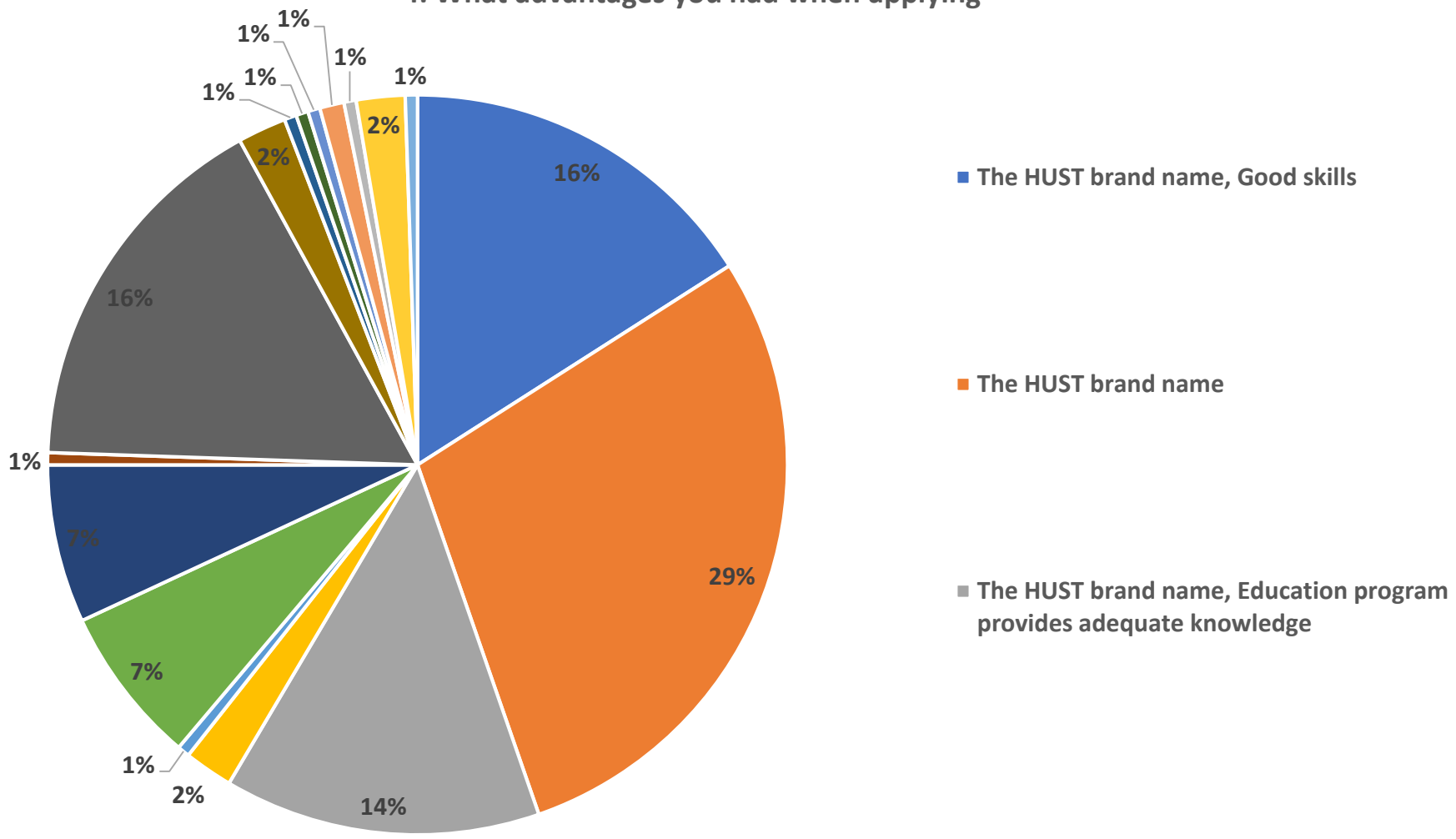


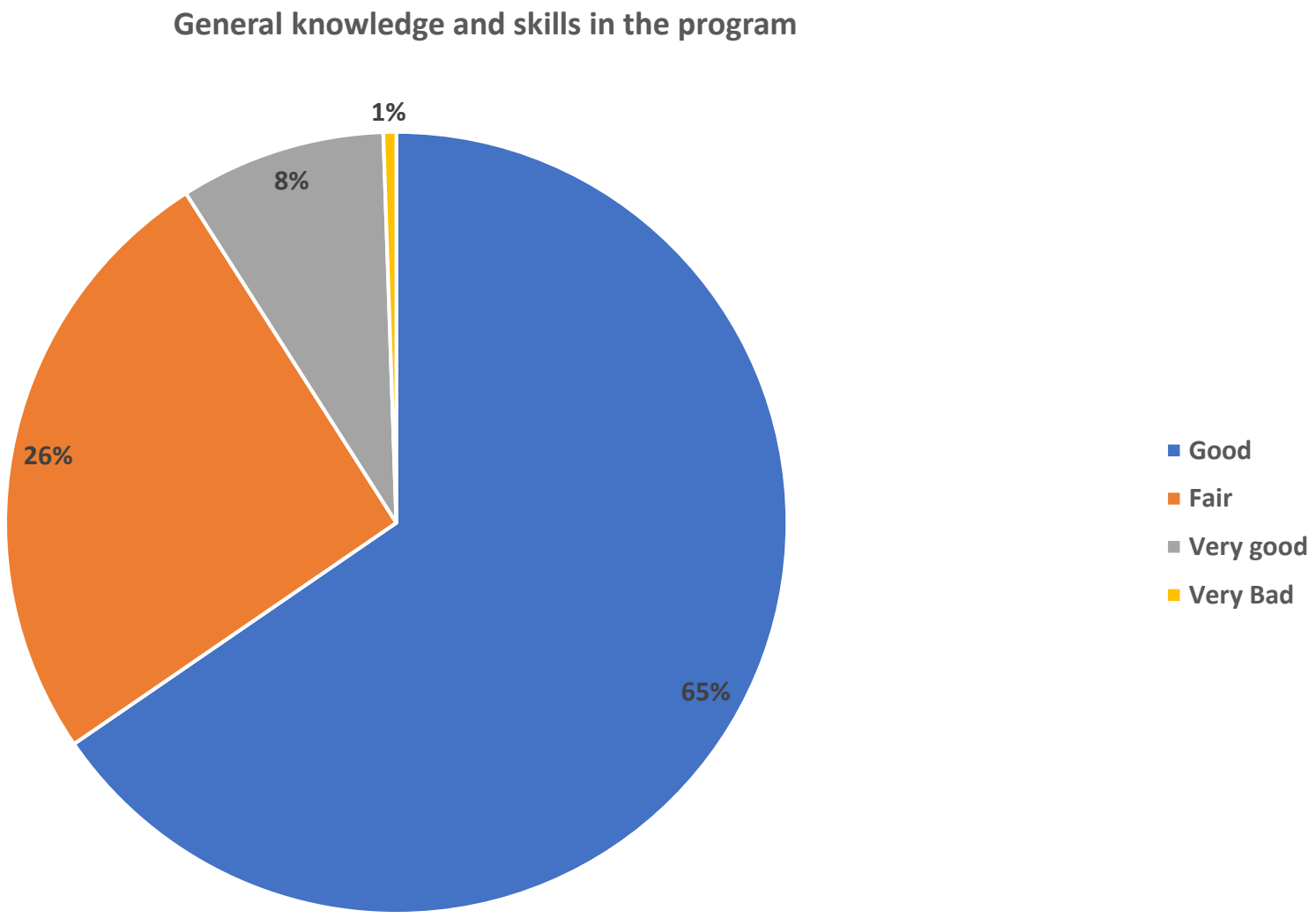
2. Your employment potential/career potential in the near fugyre

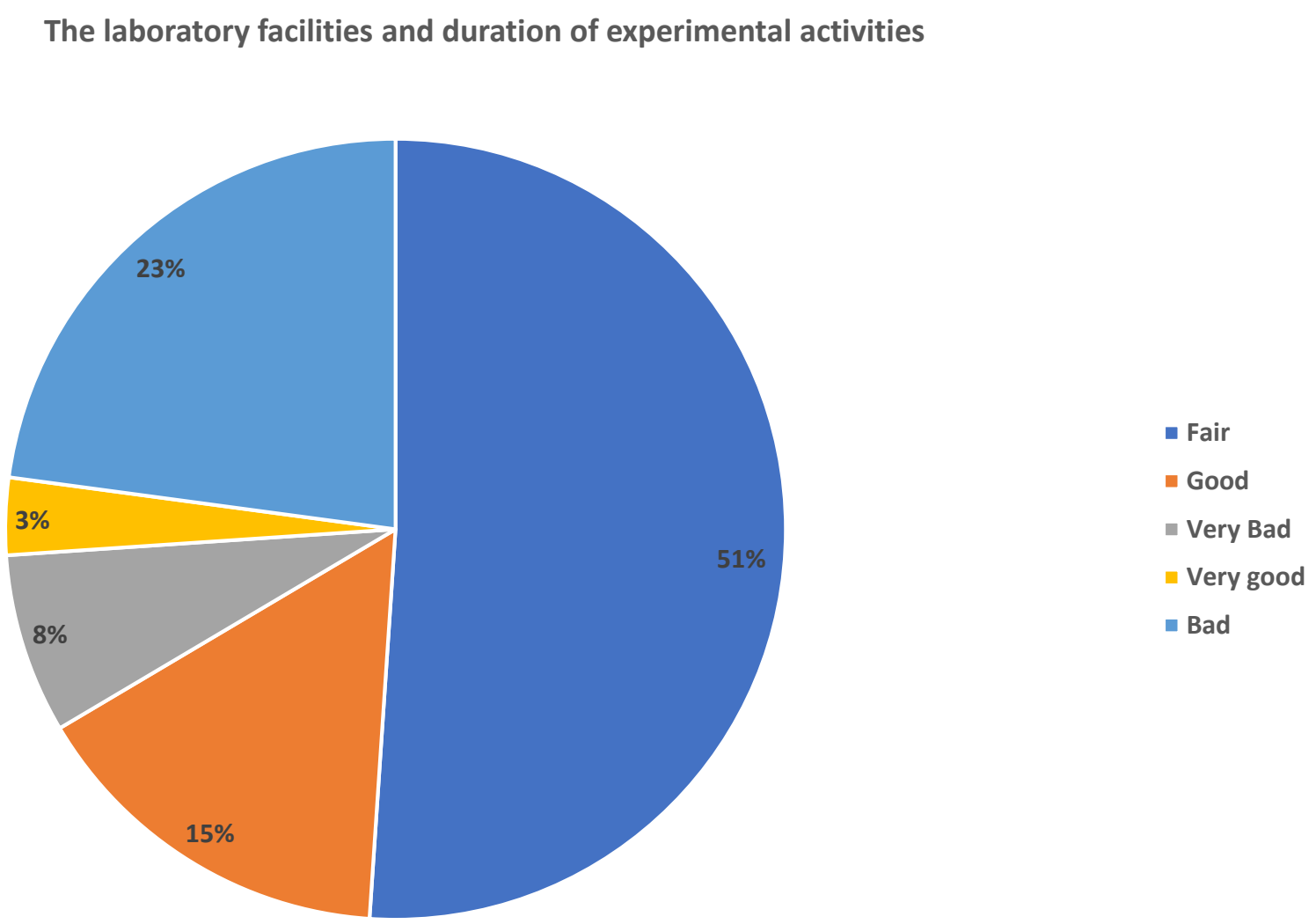


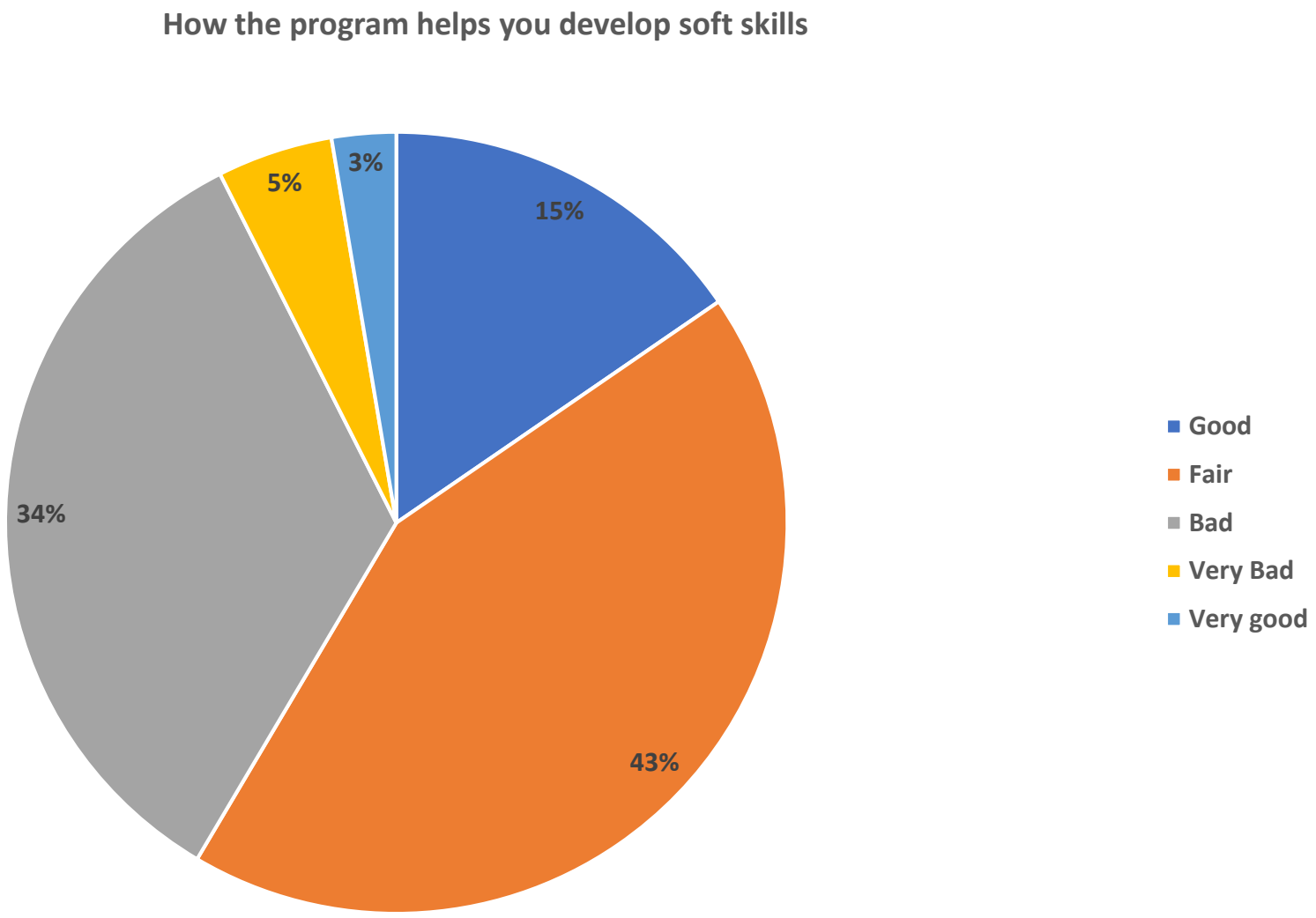

3. What difficulty you have had applying for jobs
1%
1%
1%
1%
1%
1%
1%
1%
1%
1%
1%
1%
2%
6%
5%
8%
16%
7%
1%
1%
1%
1%
1%
44%
Professional knowledge and skill not adequate
Professional skills and soft skill inadequate
Don't have information about employers, Foreign language skill not adequate
Foreign language skill not adequate
Foreign language skill not adequate, Thiếu thái độ, nhận thức đúng đắn về bản thân, công việc và xã hội
No difficulty at all

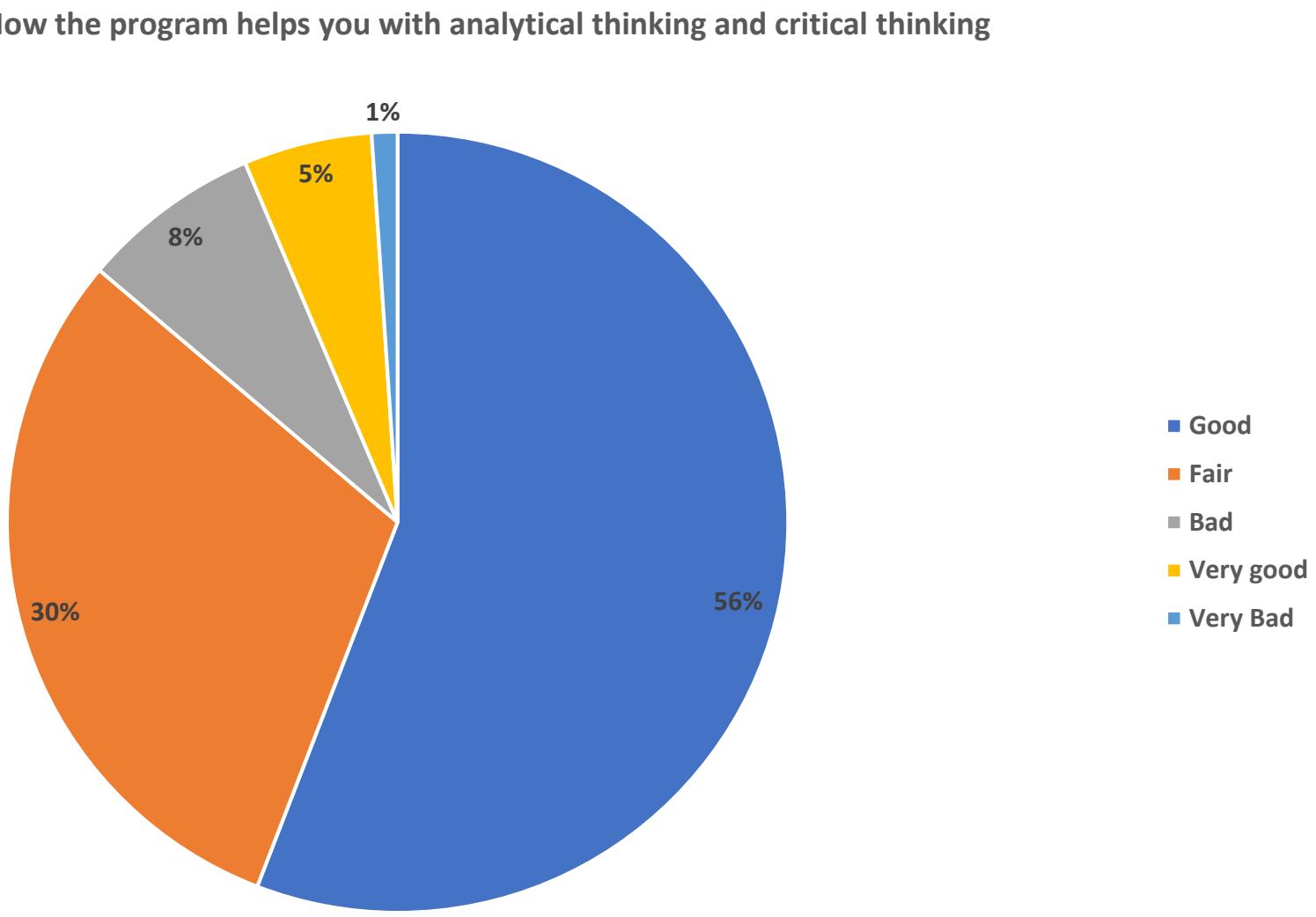
4. What advantages you had when applying

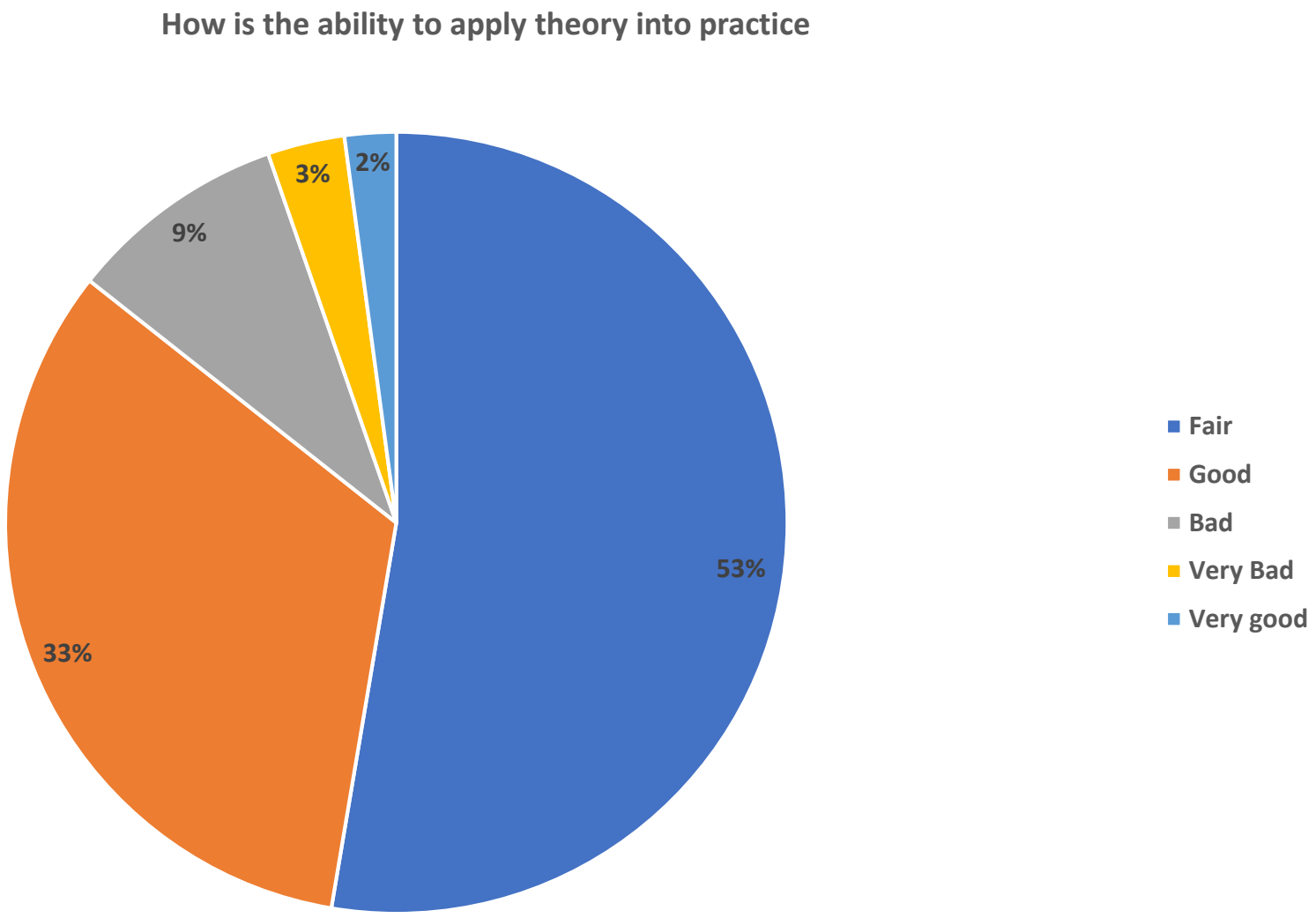


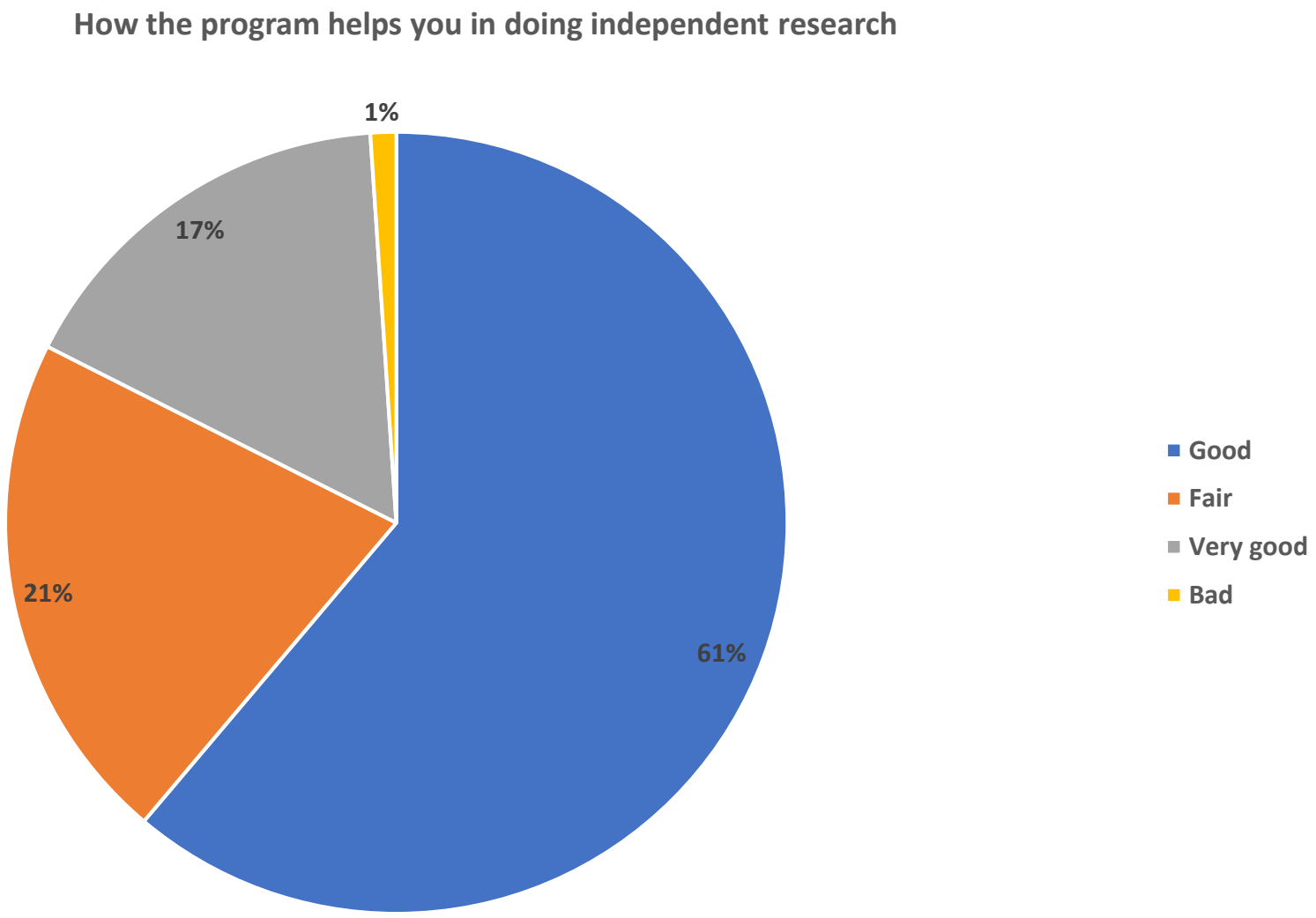

General knowledge and skills in the program
1%
8%
26%
65%
Good
Fair
Very good
Very Bad


The laboratory facilities and duration of experimental activities
23%
3%
8%
15%
51%
Fair
Good
Very Bad
Very good
Bad

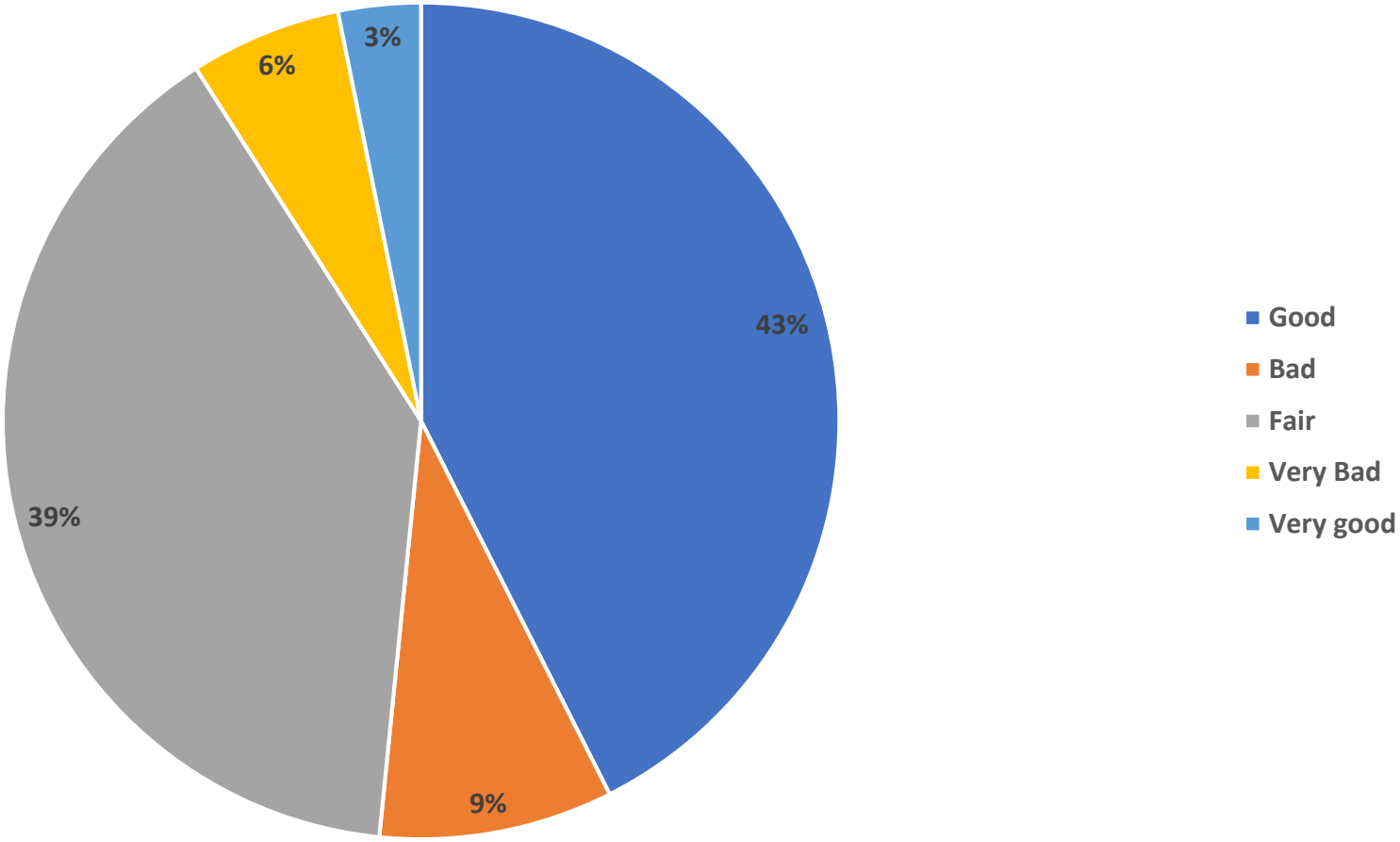

How the program helps you develop soft skills
15%
43%
34%
5%
3%
Good
Fair
Bad
Very Bad
Very good


How the program helps you with analytical thinking and critical thinking
1%
5%
8%
30%
56%
Good
Fair
Bad
Very good
Very Bad

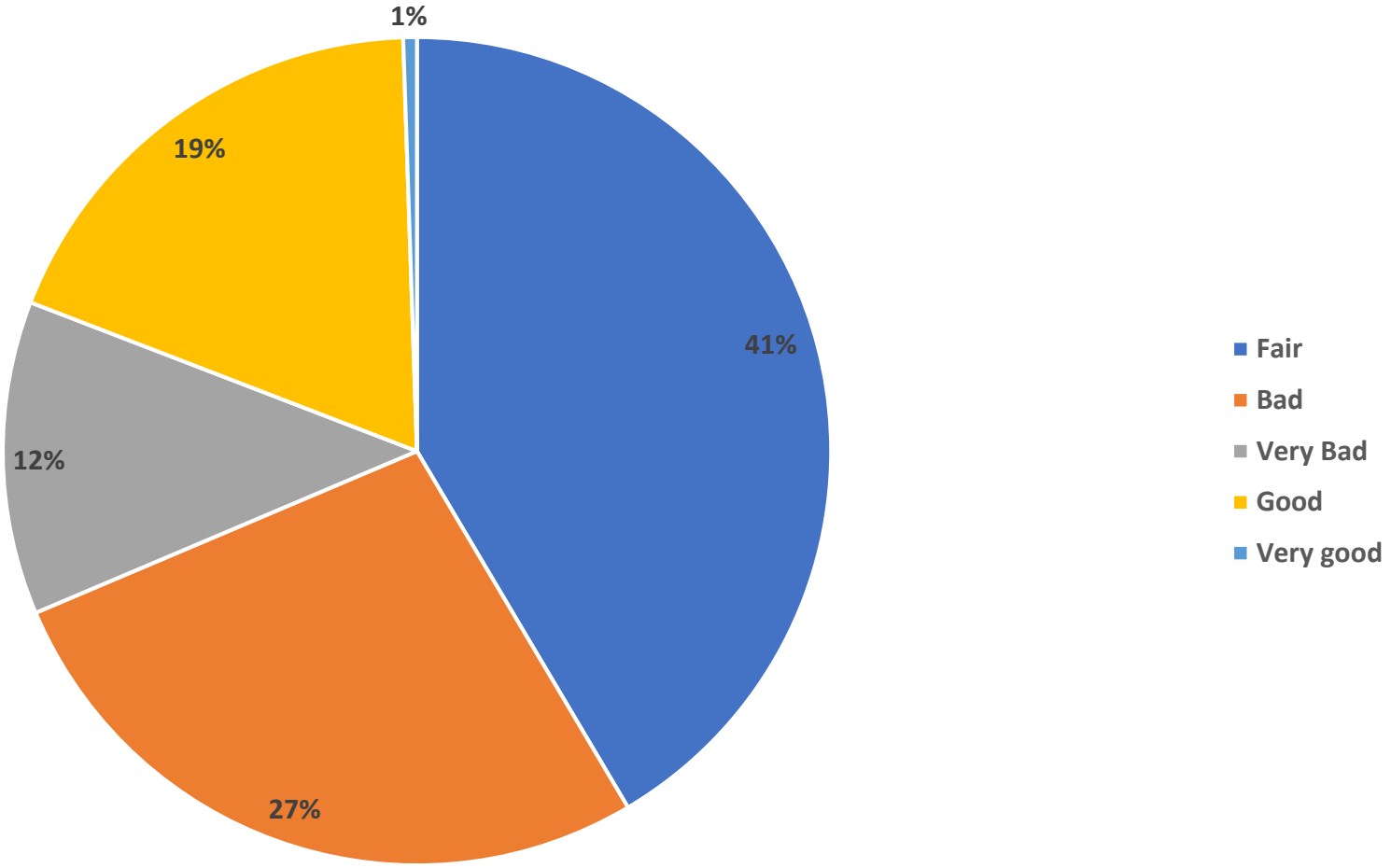

How is the ability to apply theory into practice
53%
33%
9%
3%
2%
Fair
Good
Bad
Very Bad
Very good


How the program helps you in doing independent research
1%
17%
21%
61%
Good
Fair
Very good
Bad

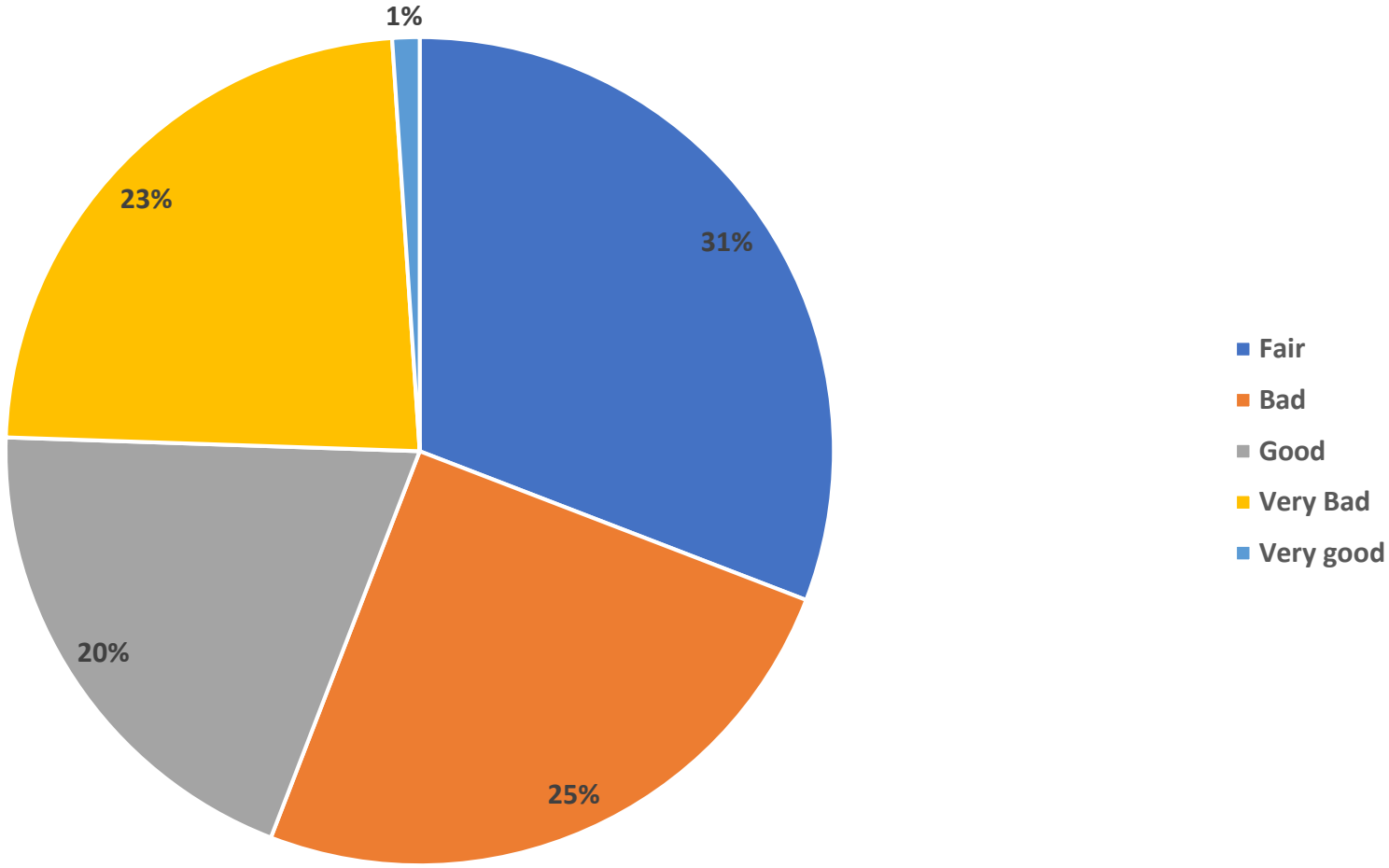
6.1. The program curriculum is suitable for students



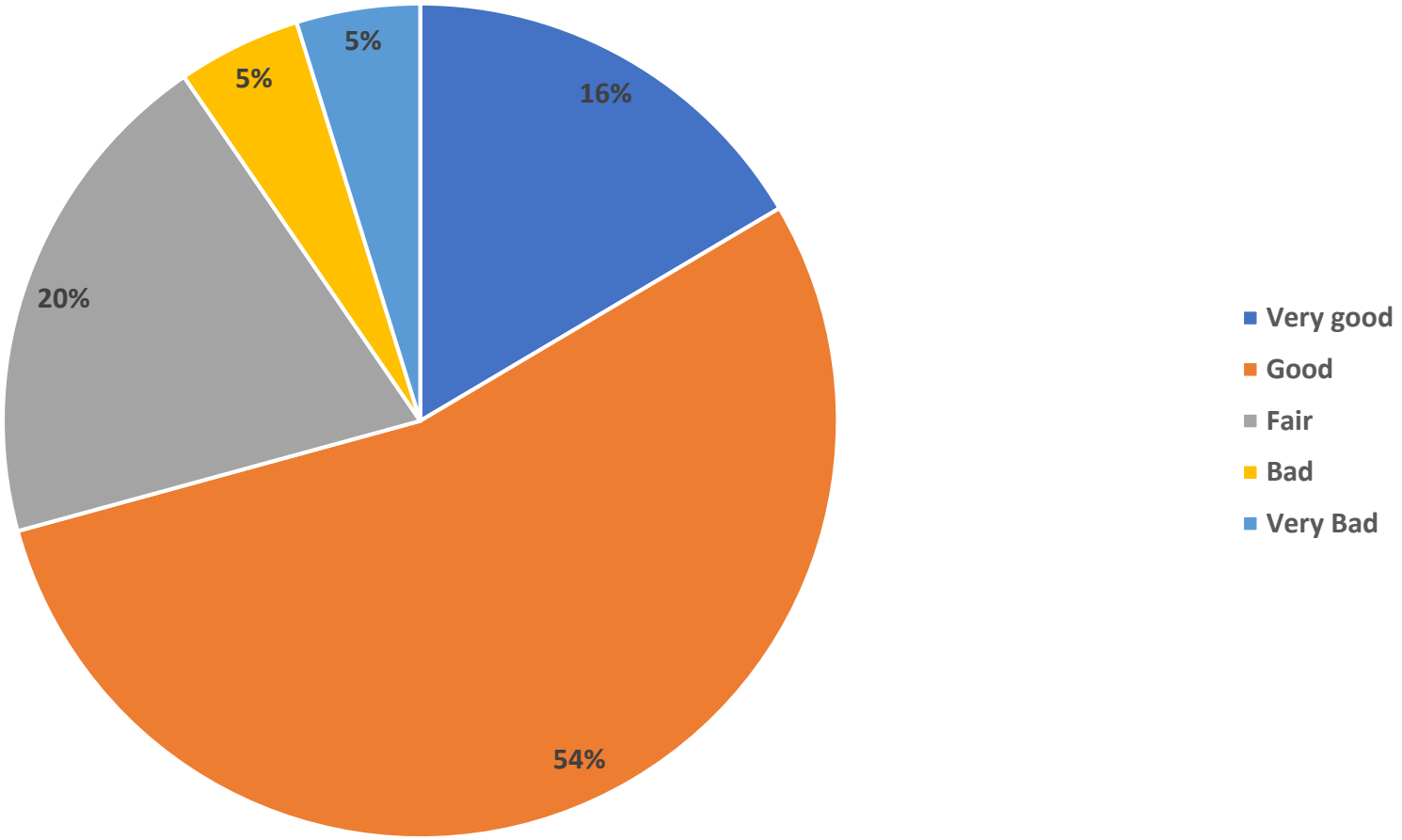
6.2. The program has a balance between theory and practice



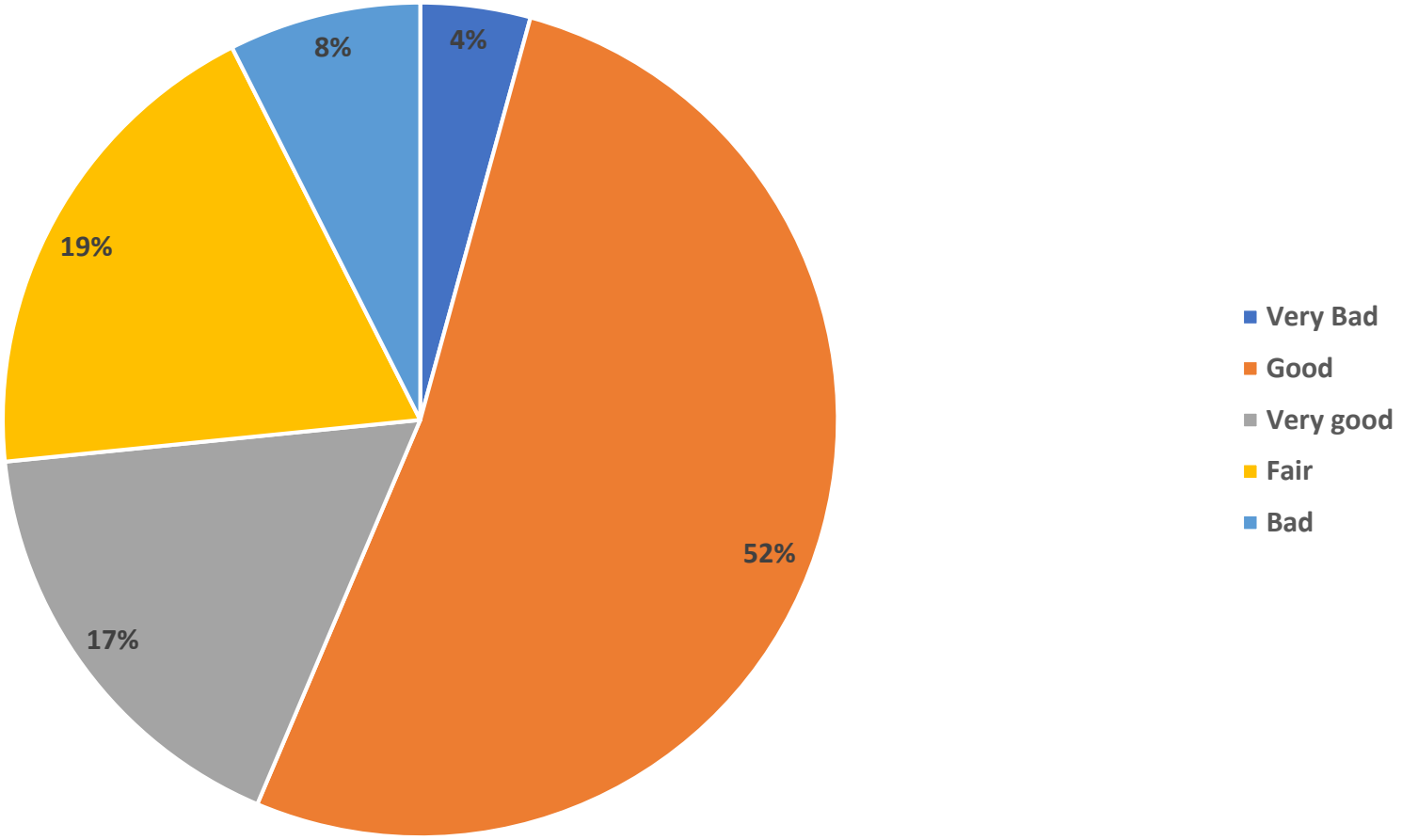
6.3. Laboratory and experimental activities are adequate



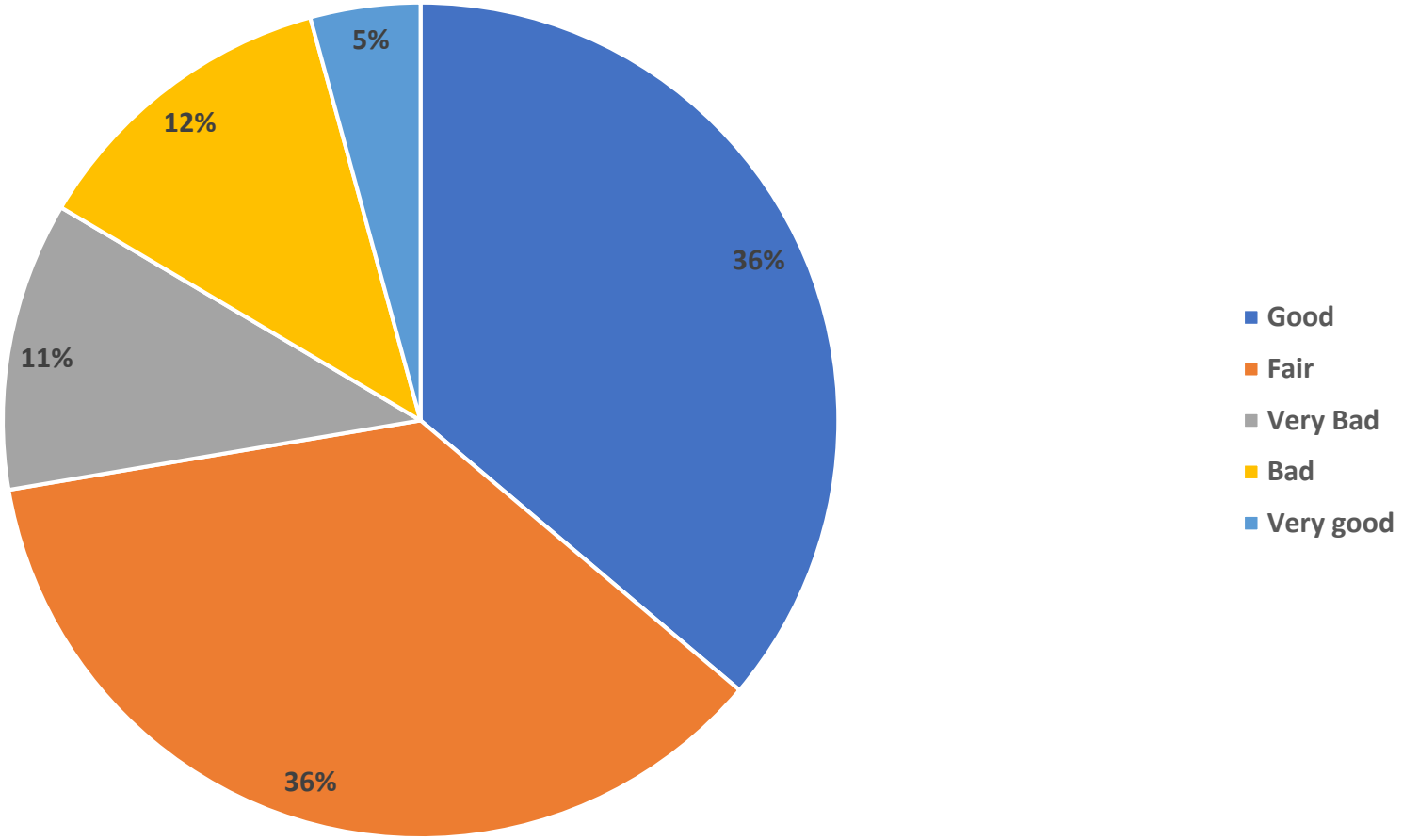
6.4. Students receive support for course materials, scientific research



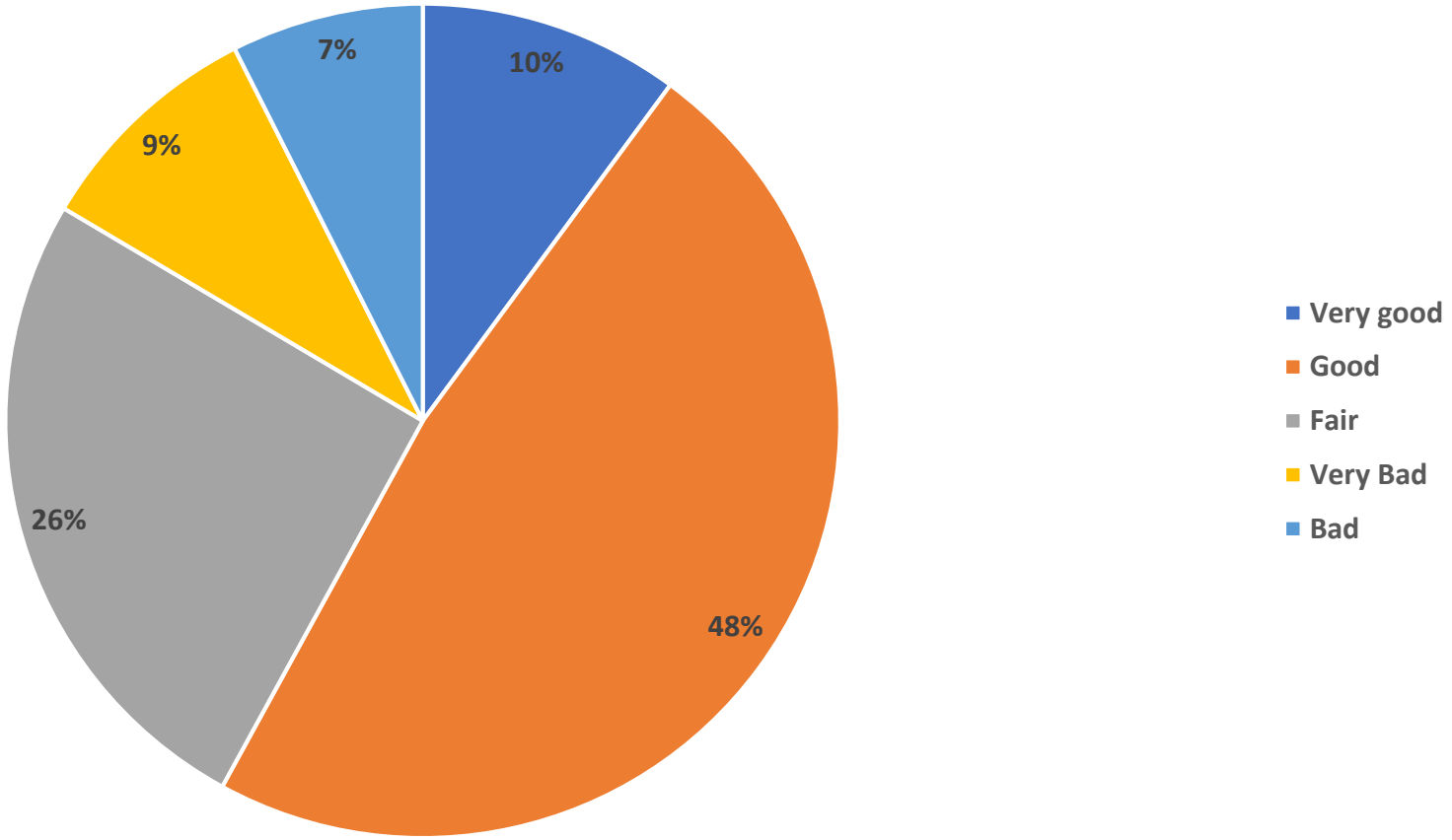
6.5. Students are assissted with career orientation

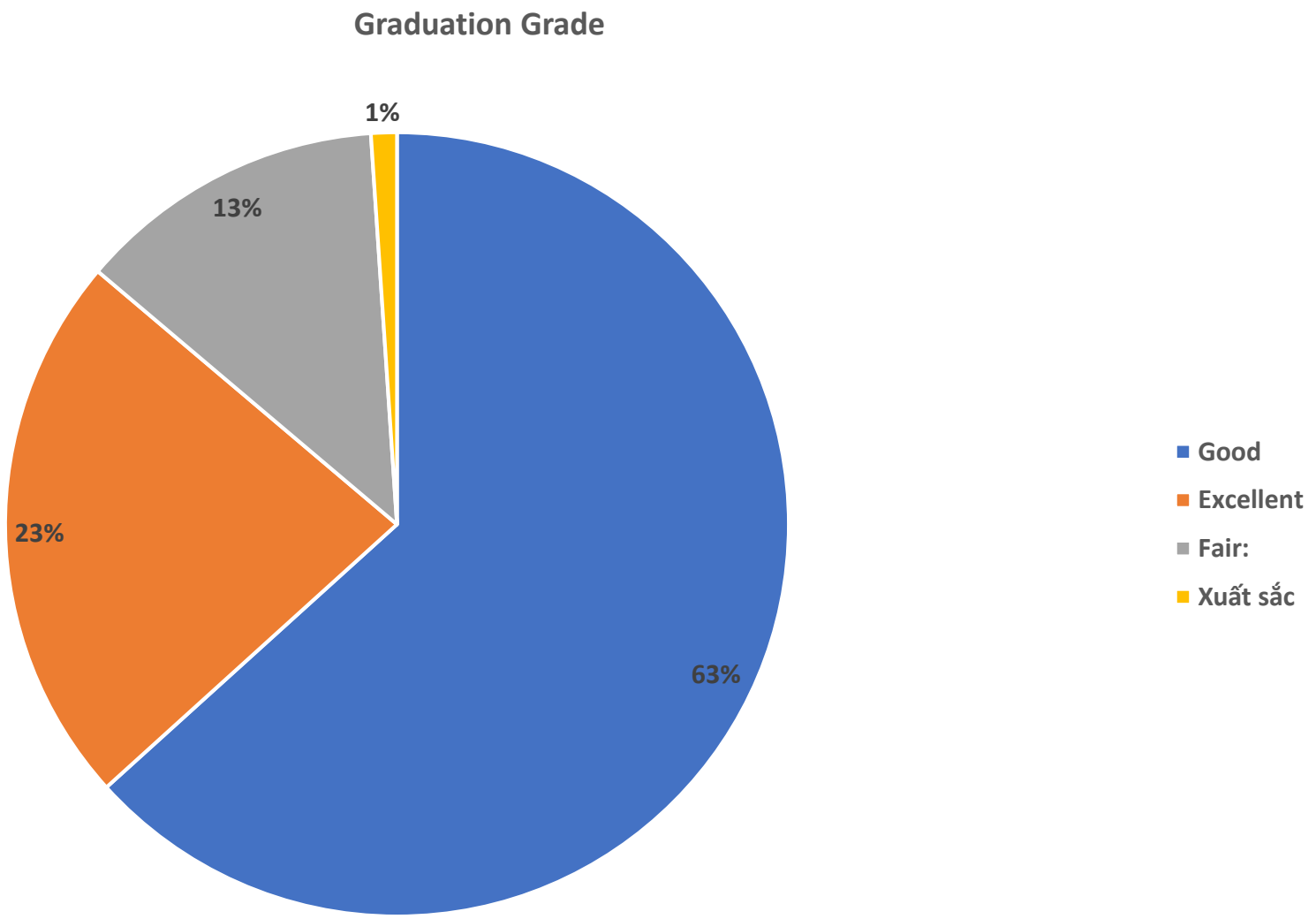


6.6. Students acquired skills and knowledge in the future workplace during their study

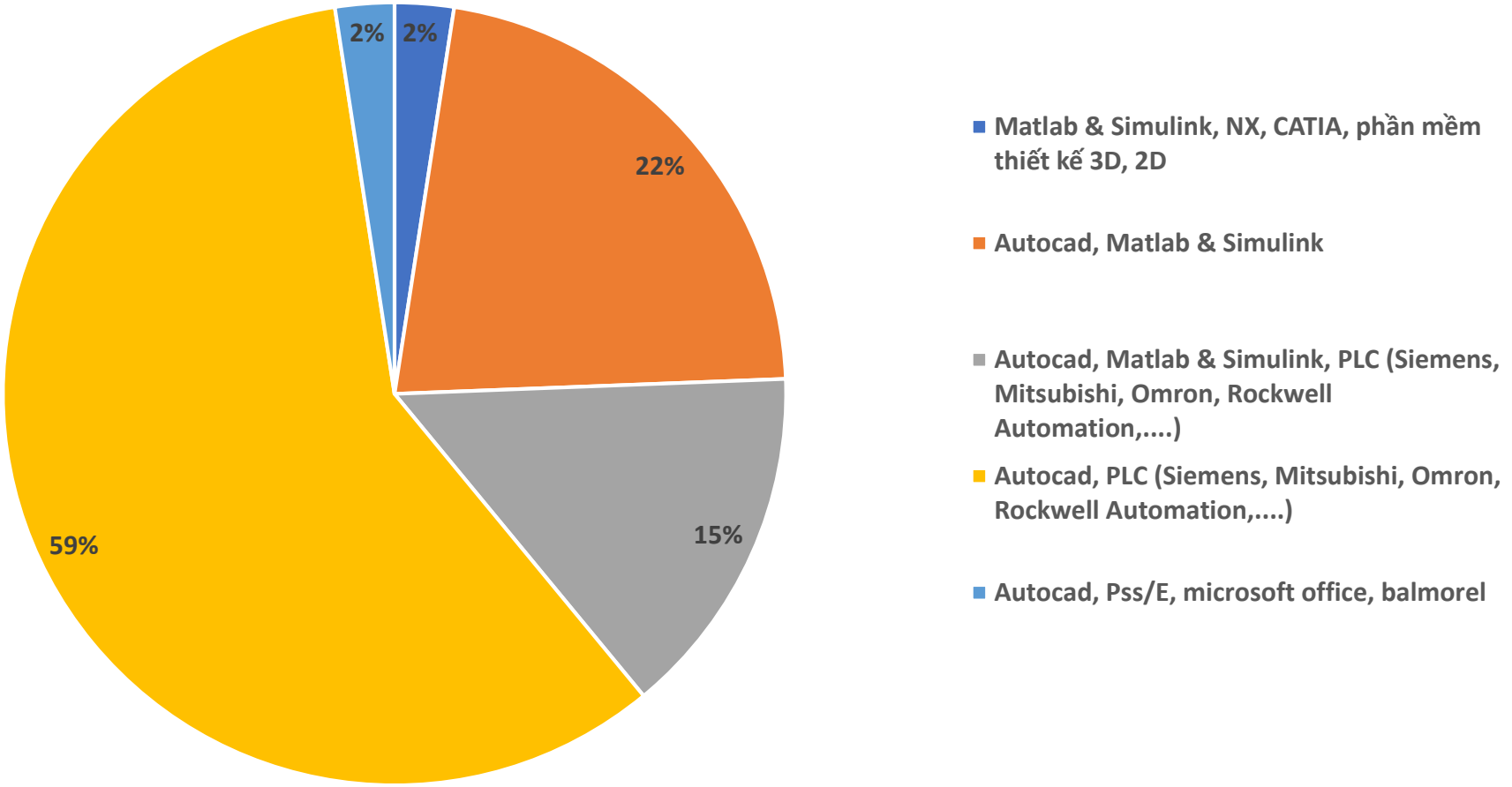


6.7. Students receive orientation and guides about personal values, career orientation and personal growth




Graduation Grade
1%
13%
23%
63%
Good
Excellent
Fair:
Xuất sắc

7. Which software do you find neccessar for your current employment



BRIEF DESCRIPTION OF THE SURVEY

(Evaluation of the current training program – For students who are studying)

1. Objectives

The objectives of this survey is to take feedback of students who pursuing the EE and CEA programs in SEE. The surveys serve as input for SEE and HUST to improve the program curriculum, quality of service, etc.

This survey is performed by the SEE.

2. Respondents

Students from promotion 62 to promotion 59. 147 students answered this survey.

3. Methodology

The survey was created using Google form. It was broadcast to students via SEE website, Facebook fanpage, and email addresses of graduate students.

4. Key findings

- The students are informed about the training programs, via various communication channels. Course contents are relevant to the learning outcome
- Students receive good support in doing research
- Most students are satisfied with the examination procedures and assessment results.
- Classroom facilities are adequate
- Students are satisfied with the Academic management and the use of information technologies in communicating about semester timeline, course registration and assessment results
- In general, students are satisfied with the support service (SEE office, library, dormitory)
- Study program need to further improve students English proficiency

Survey Form of Student on the Program

Dear students,
Congratulations on your completion of the University training program and officially receiving your Diploma Hanoi University of Technology!
School of Electrical Engineering, Hanoi University, Hanoi University of Technology is implementing a project to review, evaluate and take measures to improve the quality of training to meet the needs of technical human resources in the field of Control & Automation, Electrical Engineering in particular and Electricity industry in general.
We take your opinions very seriously, refer and consider them in improving training programs as well as quality of engineers and bachelors graduate in order to meet the increasing demand of the labor market.
Survey results will be presented in the form of statistical data. We would like to guarantee the information you provide will be completely confidential and used for the right purpose mentioned above.
Thank you for your cooperation.

*Bắt buộc

A. Personal Information

1. **Full Name** *

2. **Class** *

3. **Class** *
Chỉ đánh dấu một hình ôvan.
- K58
- K59
- K60
- K61
- K62

4. **Phone Number** *

5. **Email** *

6. **Field of study (class 62 do not answer this question)**
Chỉ đánh dấu một hình ôvan.
- Control and Automation
- Electrical Engineering

7. **Domain study (sinh viên K60, K61, K62 không phải trả lời câu hỏi này)**
Chỉ đánh dấu một hình ôvan.

- Automatic Control
- Industrial Automation
- Instrumentation and Industrial Informatics
- Electric Power System
- Electrical and Electronics Equipment

8. **Your CPA**

_____

9. **Your current TOEIC score**

_____

B. Information on Current Status

10. **Are you informed about the program objectives and learning outcomes?** *
Chỉ đánh dấu một hình ôvan.

- Yes
- No

11. **2. How do you know enrollment information?** *
Chọn tất cả mục phù hợp.

- [ ] Conference of enrollment and career orientation
- [ ] Inquire directly with the University Training Office / Office of School of Electrical Engineering / Office Department
- [ ] Website of the University / School of Electrical Engineering
- [ ] Classroom officials are popular in class
- [ ] Not fully accessible
- [ ] Mục khác: _____

12. **3. Please evaluate the program's teaching and learning methods according to the following criteria:** *
Chỉ đánh dấu một hình ôvan cho mỗi hàng.

	Least	Average	good	Very good
The teaching and learning methods encourage student in scientific research				
Your opinion about: Students receive strong support in doing research				
Your opninion about: Teaching and experimental activities complement eachother				

13. **4. Please rate the content of the program according to the following criteria:** *
Chỉ đánh dấu một hình ôvan cho mỗi hàng.

	Least	Averrage	good	very good
Course content match the course objectives				
The up-to-date degree of the course content				
Relevance of course content to the program learning outcomes				
Your opinion about the inter-disciplinary aspect of the program curriculum				

14. **5. Are you informed about the procedures of examination, assessment methods and the appeal procedures?** *
Chỉ đánh dấu một hình ôvan.

- Don't know
- Unsure
- Know very well

15. **6. Are you satisfied with the exam regulation, assessment results and appeal result (if applicable)** *
Chỉ đánh dấu một hình ôvan.

	1	2	3	4	5	
Strongly Unsatisfied						Very satisfied

16. **7. Are you satisfied with the advice received about your training program** *
Chỉ đánh dấu một hình ôvan.

	1	2	3	4	5	
Strongly unsatisfied						Very satisfied

17. **8. Please evaluate the quality of the classroom / lecture hall according to the following criteria:** *

Chỉ đánh dấu một hình ôvan cho mỗi hàng.

	Least	Average	Good	Very good
Opinion about the classroom hygiene				
Your opinion about how the classroom size match the number of students enrolled				
Your opinion: Class tables and chair suitable for stuying purpose				
Quality of classroom tables and chairs				
Quality of projectors and screen in the classrooms				
Quality of the lighting system and speakers in the classrooms				
Quality of the chalkboard, plastic boards				
Quality of air conditioning system and air ventilation system				
General assessment of the quality of classrooms				

18. **9. Please evaluate the quality of the laboratory / computer response according to the following criteria:** *

Chỉ đánh dấu một hình ôvan cho mỗi hàng.

	least	average	Good	Very good
Quality of support service of computer labs				
The number of lab computers adequately matches the number of students				
Lab computers meet the requirement of study				
Quality of computers/experimental devices				
General asssessment of the computer and experimental labs				

19. **10. Please evaluate the academic management of the Department and SEE, according to the following criteria:** *

Chỉ đánh dấu một hình ôvan cho mỗi hàng.

	Least	Average	Good	Very good
Performance of the class monitors				
Academic management system of the Department				
Management of the School of Electrical Engineering				
Application of Information technology in communicating with students about course timeline, assessment results, course registrations, etc.				
How often the departments and the school ask for your feedback				

20. **11. Please evaluate extracurricular activities to support students according to the following criteria:** *
Chỉ đánh dấu một hình ôvan cho mỗi hàng.

	Lest	Average	Good	Very good
Extracurricular activities: scientific competition, seminars				
Quality of scientific seminars for students				
Your ability to receive information on job offers				
Extracurricular activities such as sport, culture				

21. **12. Please evaluate the quality of stadium and physical education facilities** *
Chỉ đánh dấu một hình ôvan cho mỗi hàng.

	Bad	Fair	Good	Very good

22. **13. Service quality of the staffs at the Medical Center:** *
Chỉ đánh dấu một hình ôvan cho mỗi hàng.

	Bad	Fair	Good	Very good

23. **14. Service quality of the Support Staffs at the Office of SEE** *
Chỉ đánh dấu một hình ôvan cho mỗi hàng.

	Very bad	Bad	Good	Very good

24. **15. Service quality of support staff at the dormitory** *
Chỉ đánh dấu một hình ôvan cho mỗi hàng.

	Bad	Fair	Good	Very good

25. **16. Please evaluate the quality of the learning materials system for learning according to the following criteria:** *

Chỉ đánh dấu một hình ôvan cho mỗi hàng.

	Least	Average	Good	Very good
Facilities in the library reading room				
The library's document look up system				
The Internet service quality in the library				
Number/adequacy of textbooks, lecturer notes and references in the library				
Quality of library materials				
Quality of service of suport staffs at the library				
How efficient is your use of library resources				

26. **17. Please make a general assessment of the academic environment that the program creates according to the following criteria:** *

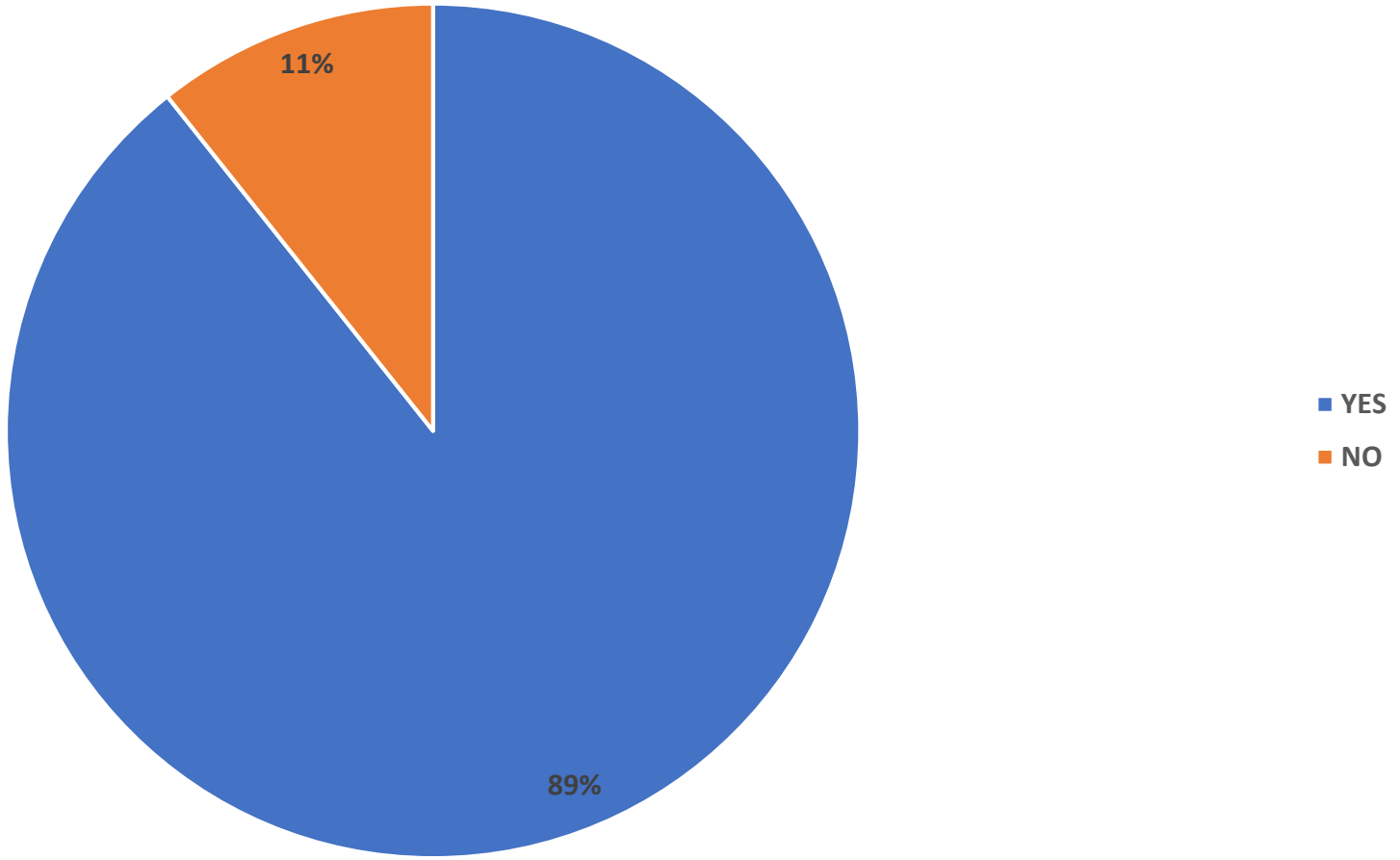
Chỉ đánh dấu một hình ôvan cho mỗi hàng.

	least	average	good	very good
The study environment encourage students in studying				
The study environment encourage student in teamwork skill				
The study environment assisst students in improving English skill				
The study environment boost your confidence level				
General assessment of your study environment				

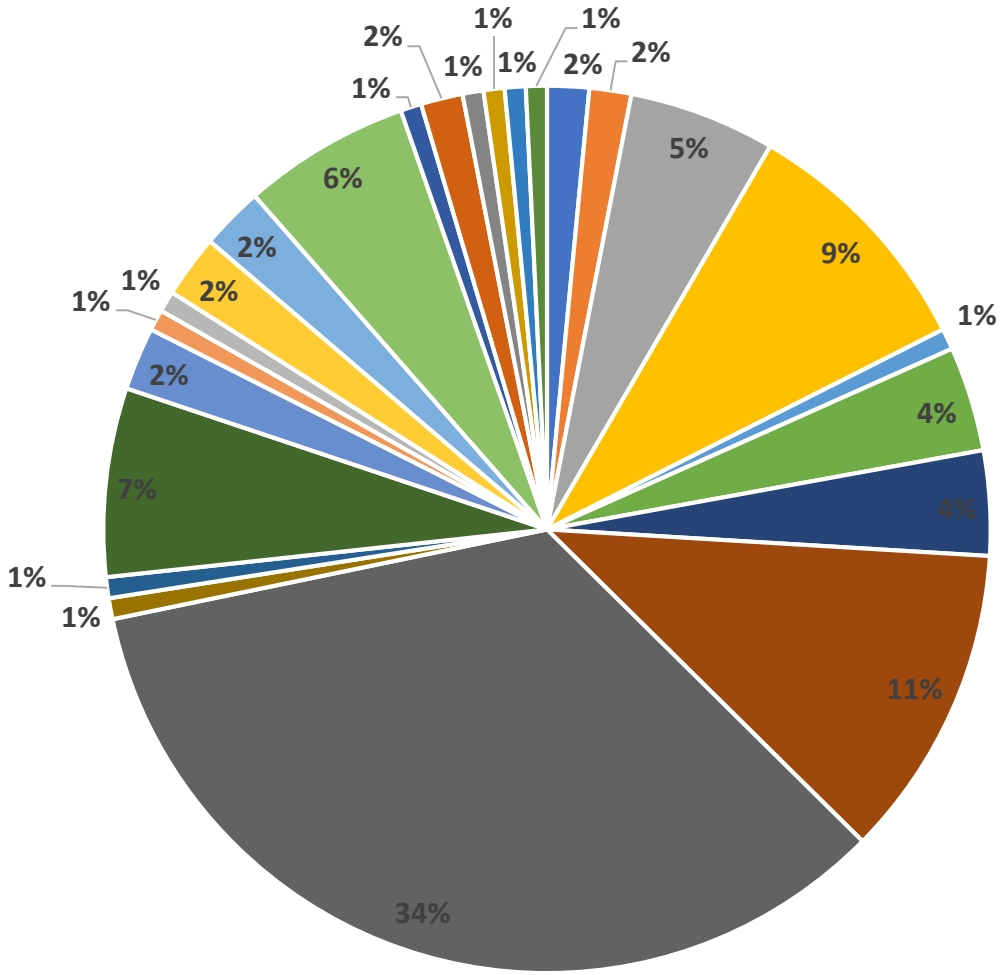
27. **18. Other comments**

Press Submit to finish the Survey. We greatly appreciate your feedback!

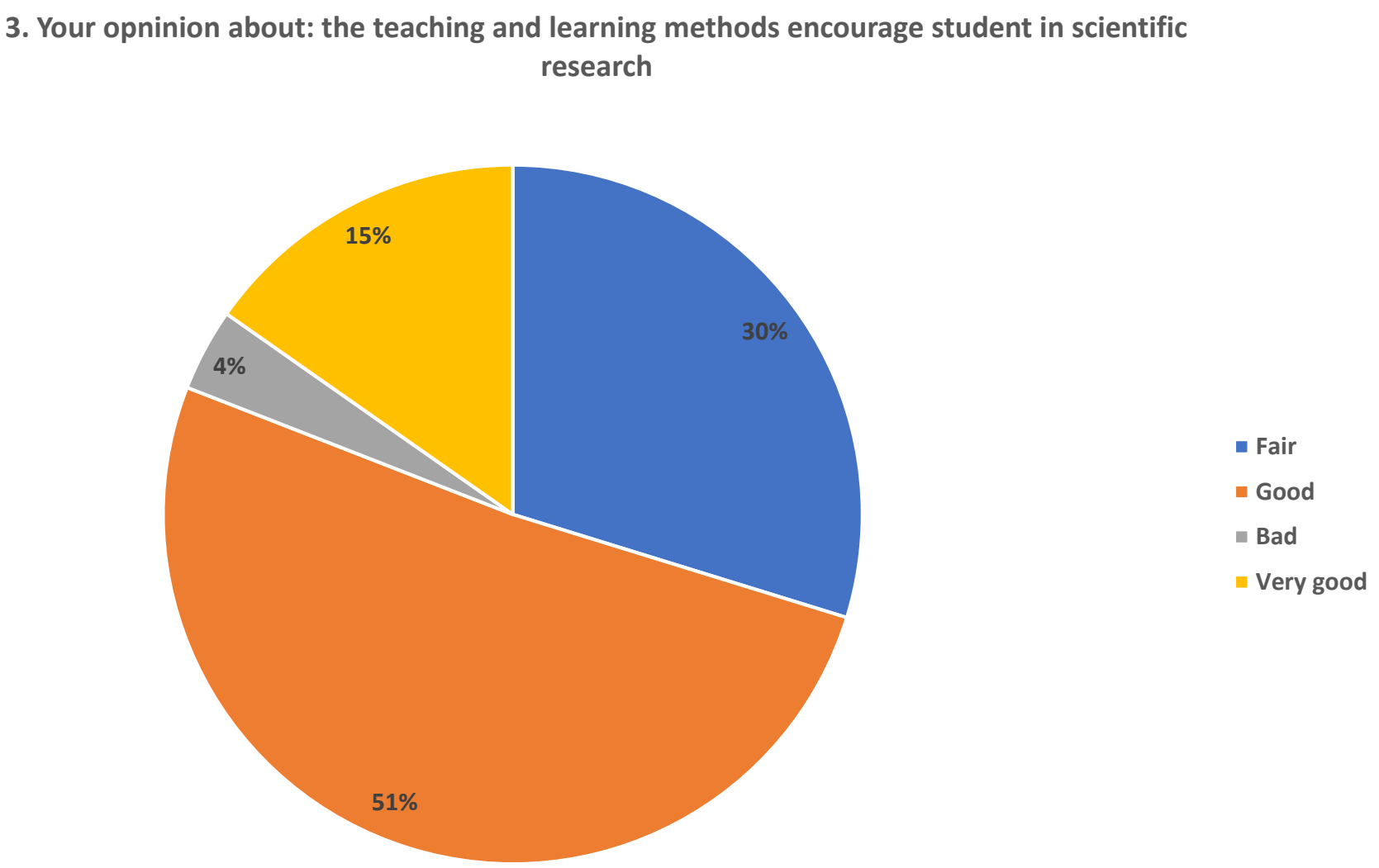
1. Are you informed about the program objectives and learning outcomes



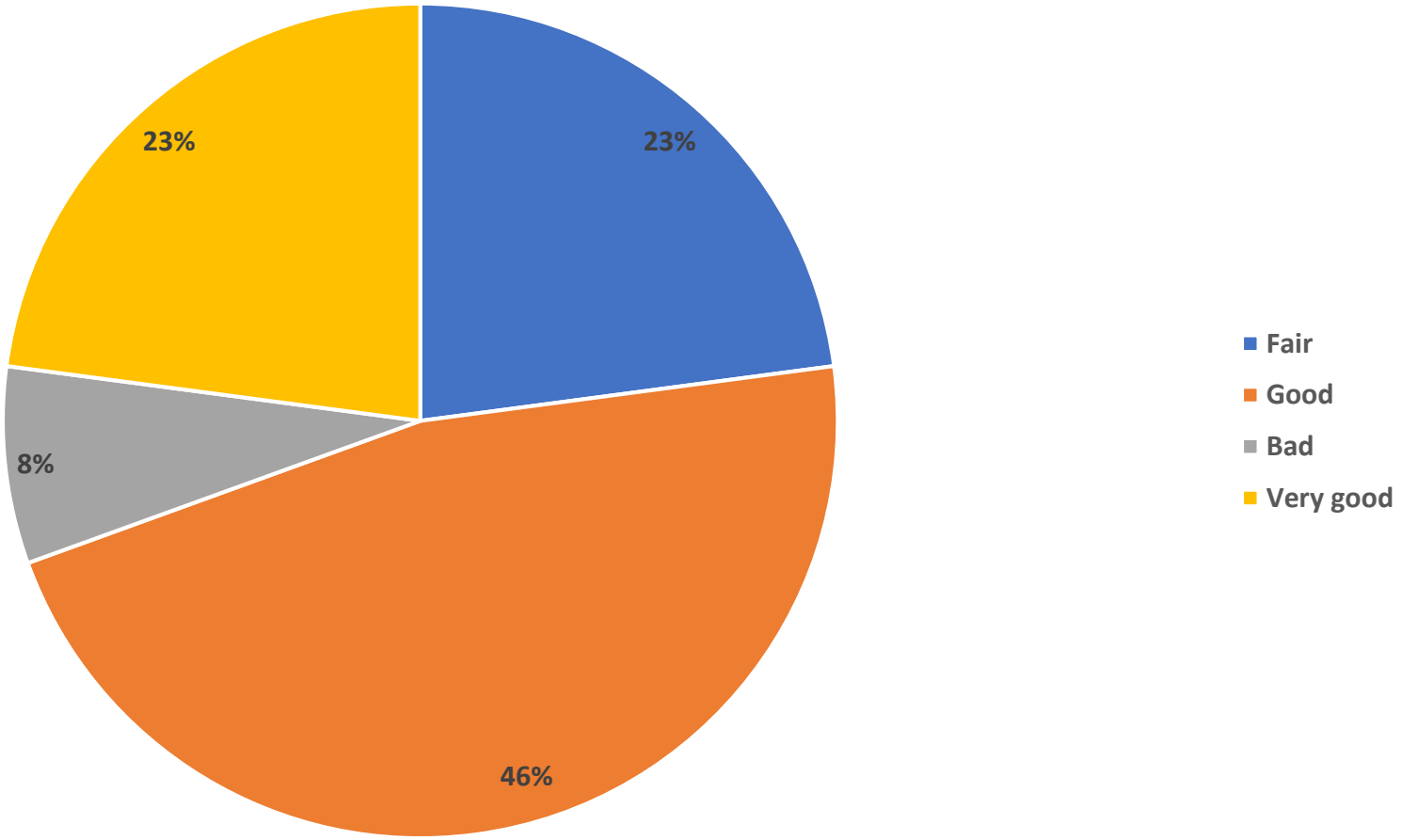
2. How are you informed about the program curriculum



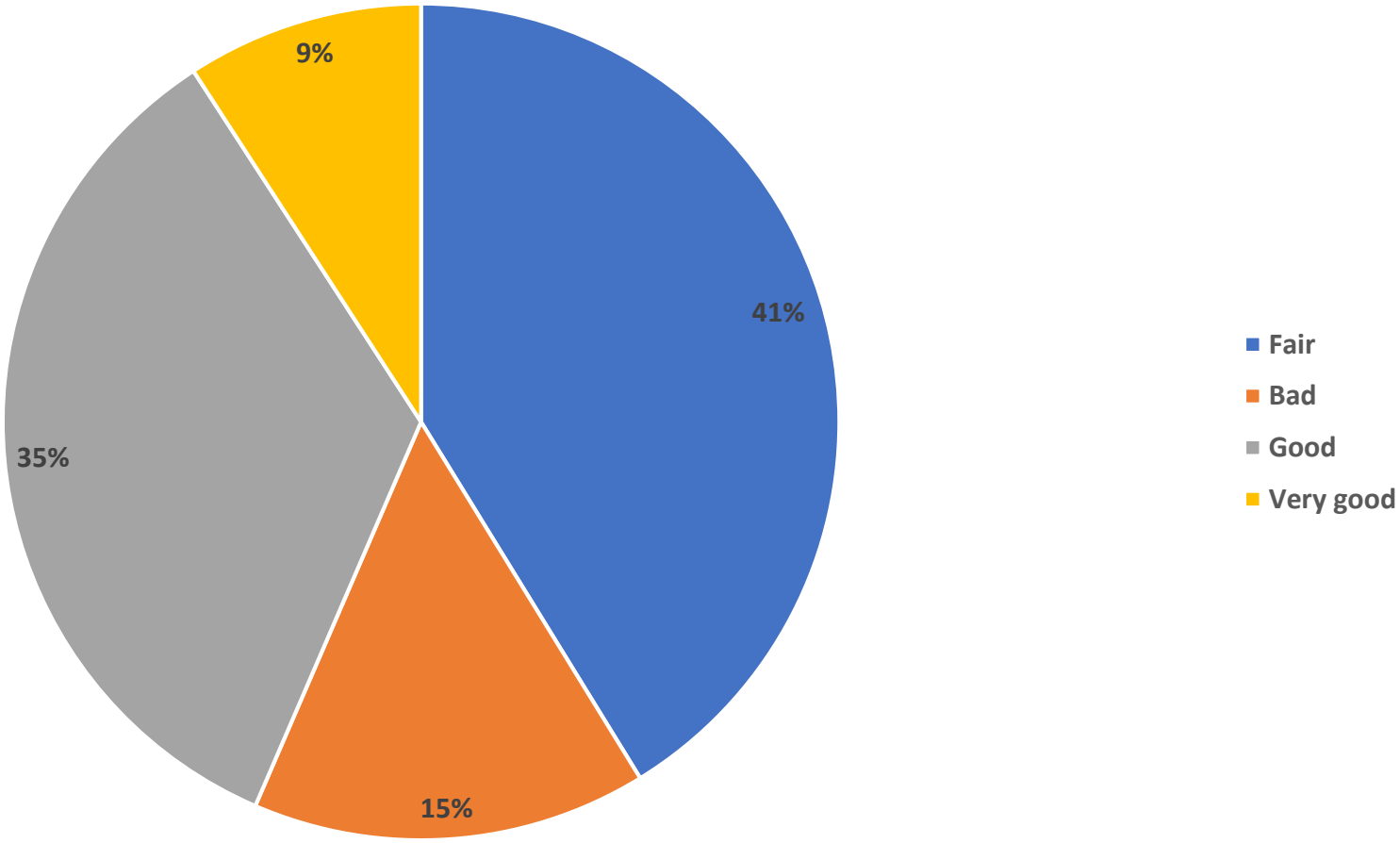
- Hội thảo tuyển sinh và định hướng nghề nghiệp, Cán bộ quản lớp phổ biến trên lớp
- Hội thảo tuyển sinh và định hướng nghề nghiệp, Hỏi đáp trực tiếp với Phòng Đào tạo Đại học/Văn phòng Viện Điện/ Văn phòng Bộ môn, Website của Trường/ Viện Điện
- Website của Trường/ Viện Điện, Cán bộ quản lớp phổ biến trên lớp


3. Your opninion about: the teaching and learning methods encourage student in scientific research
15%
30%
4%
51%
Fair
Good
Bad
Very good

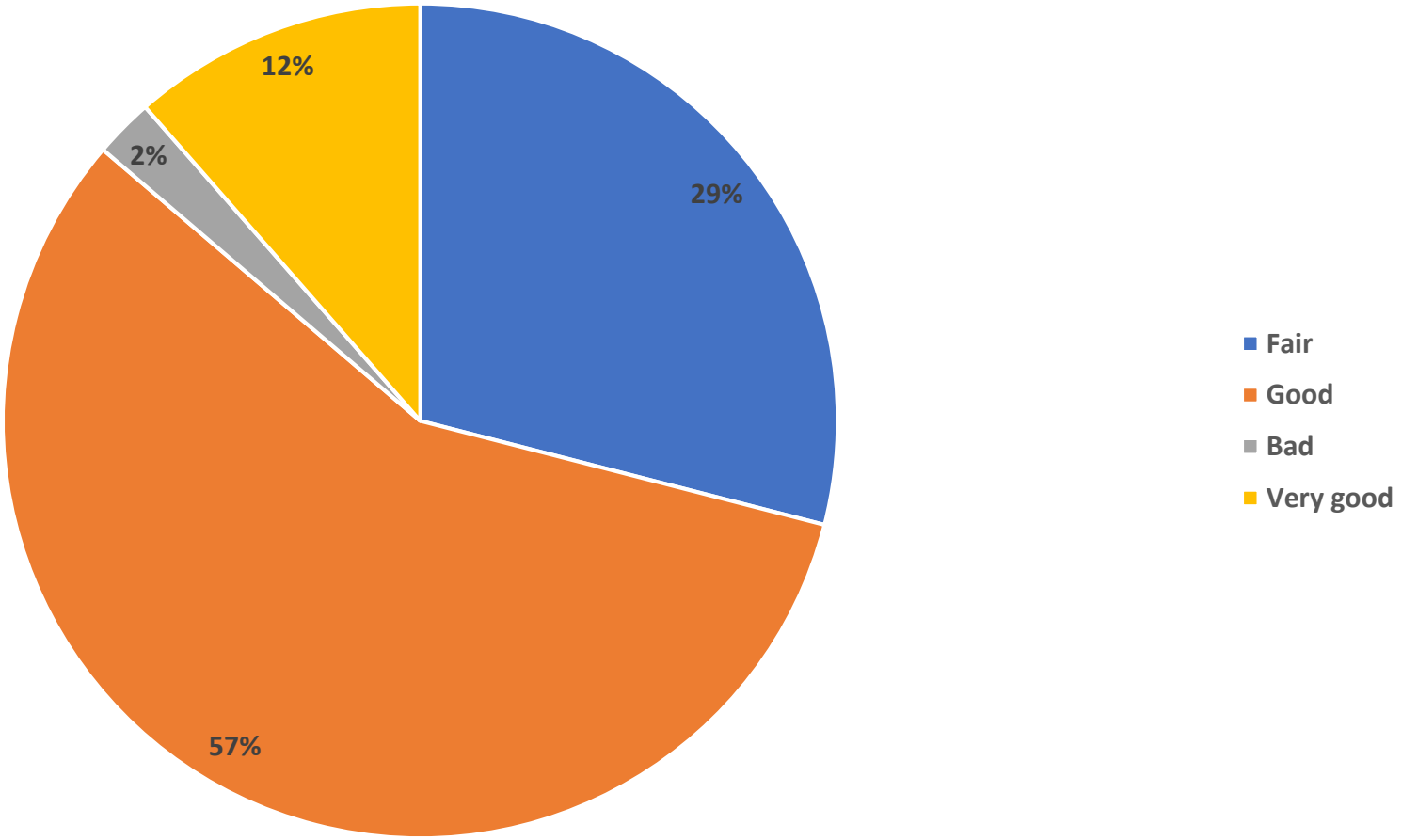
3. Your opinion about: Students receive strong support in doing research



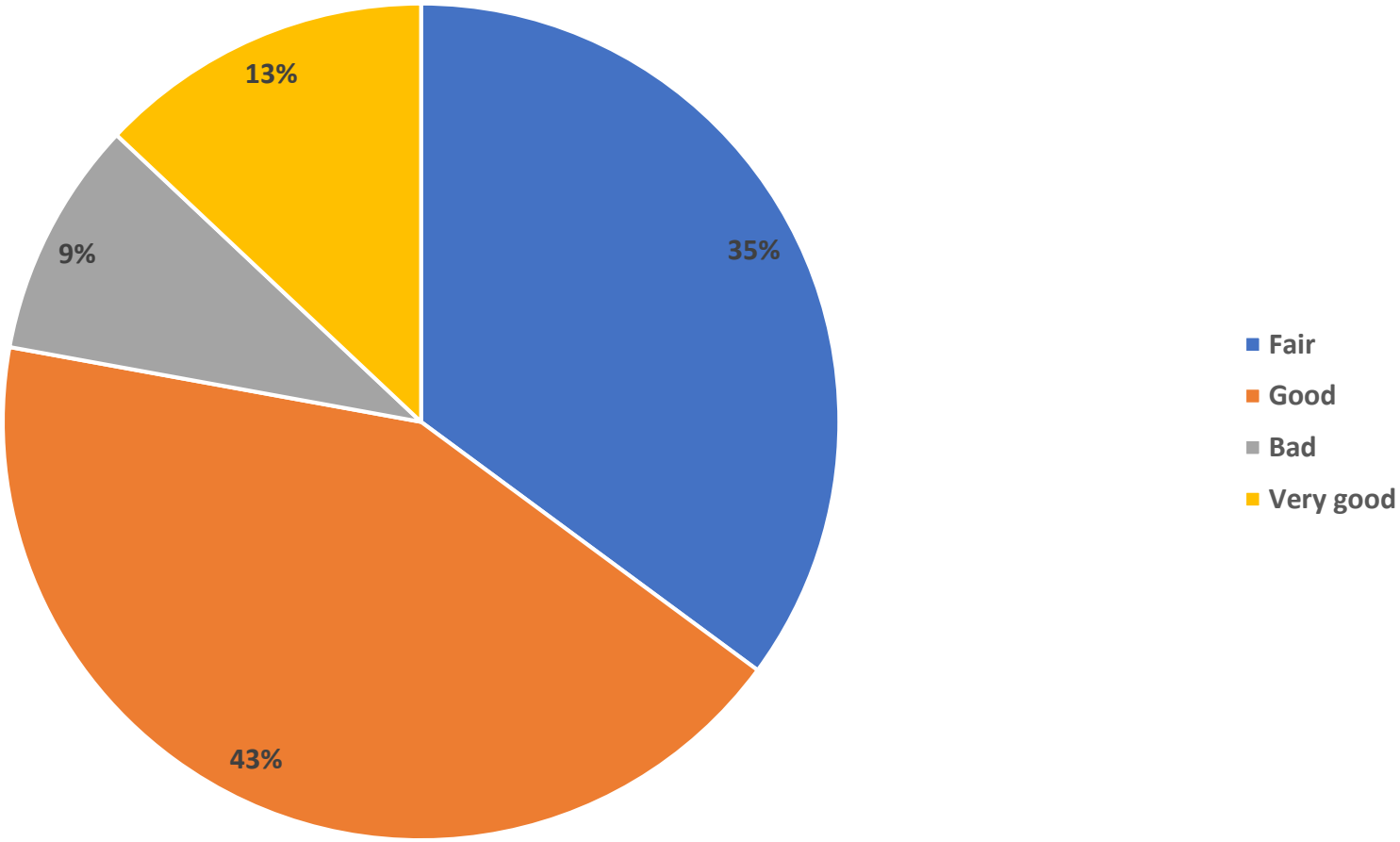
3. Your opninion about: Teaching and experimental activities complement eachother



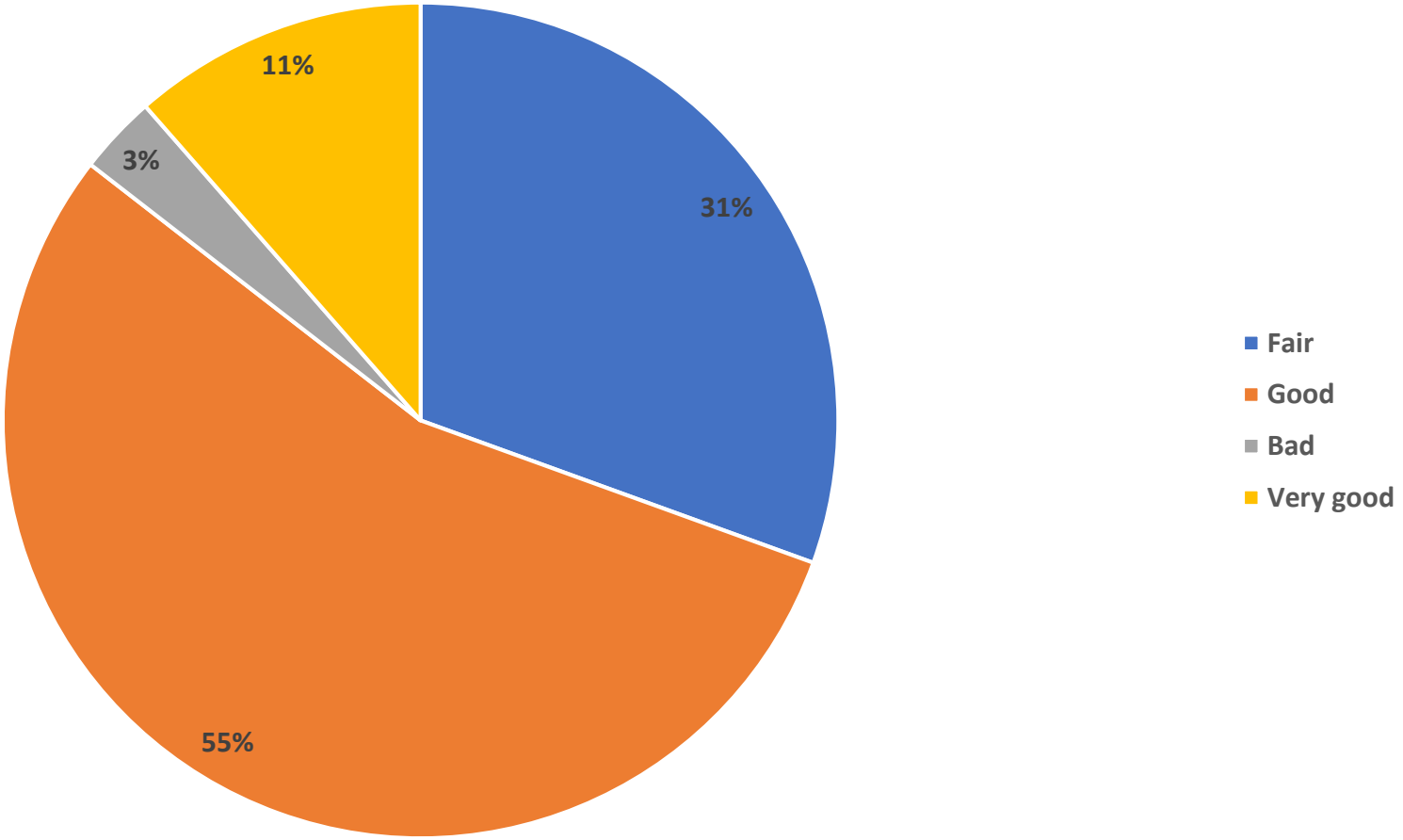
4. Your opinion about: Course content match the course objectives



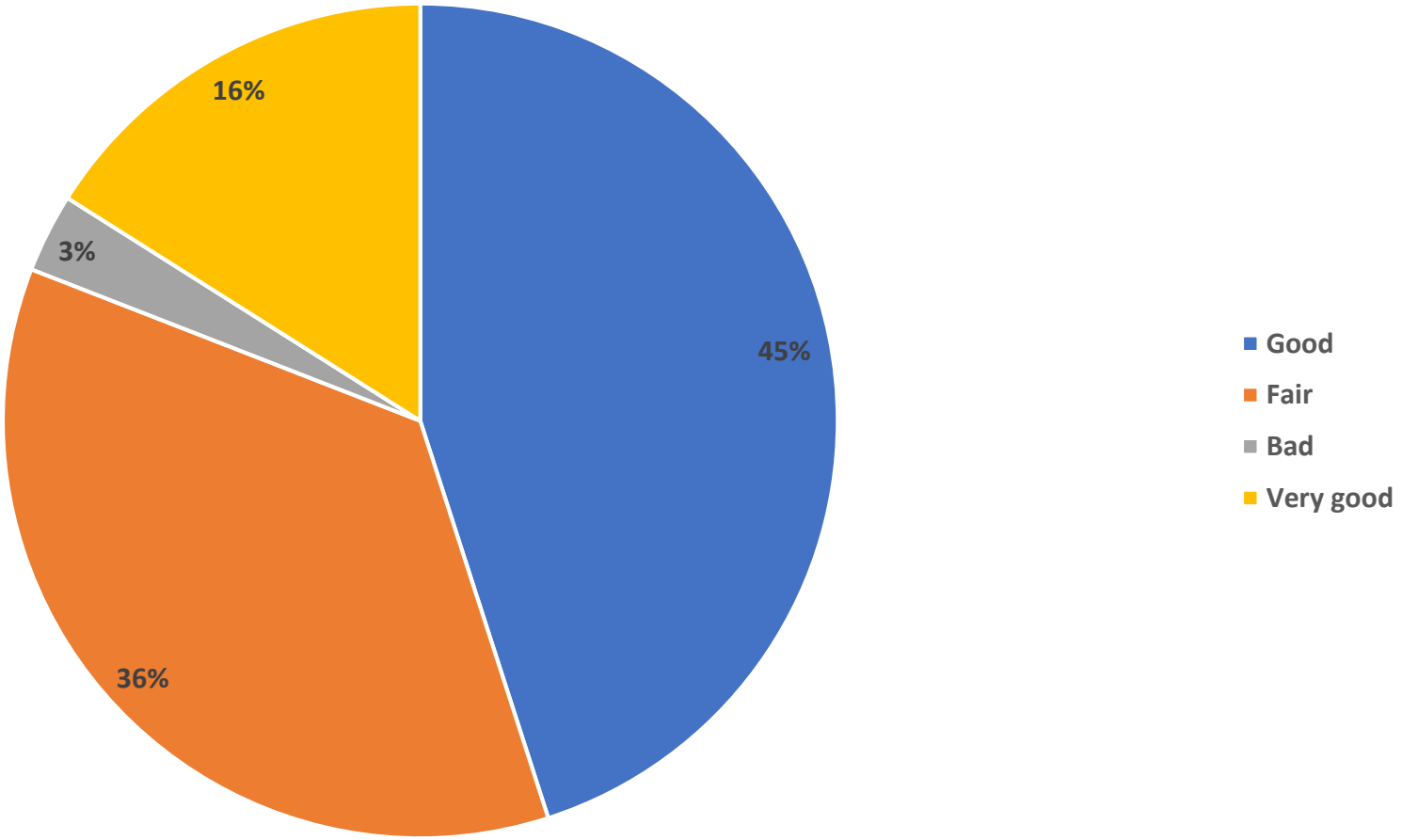
4. Your opinion about: the up-to-date degree of the course content



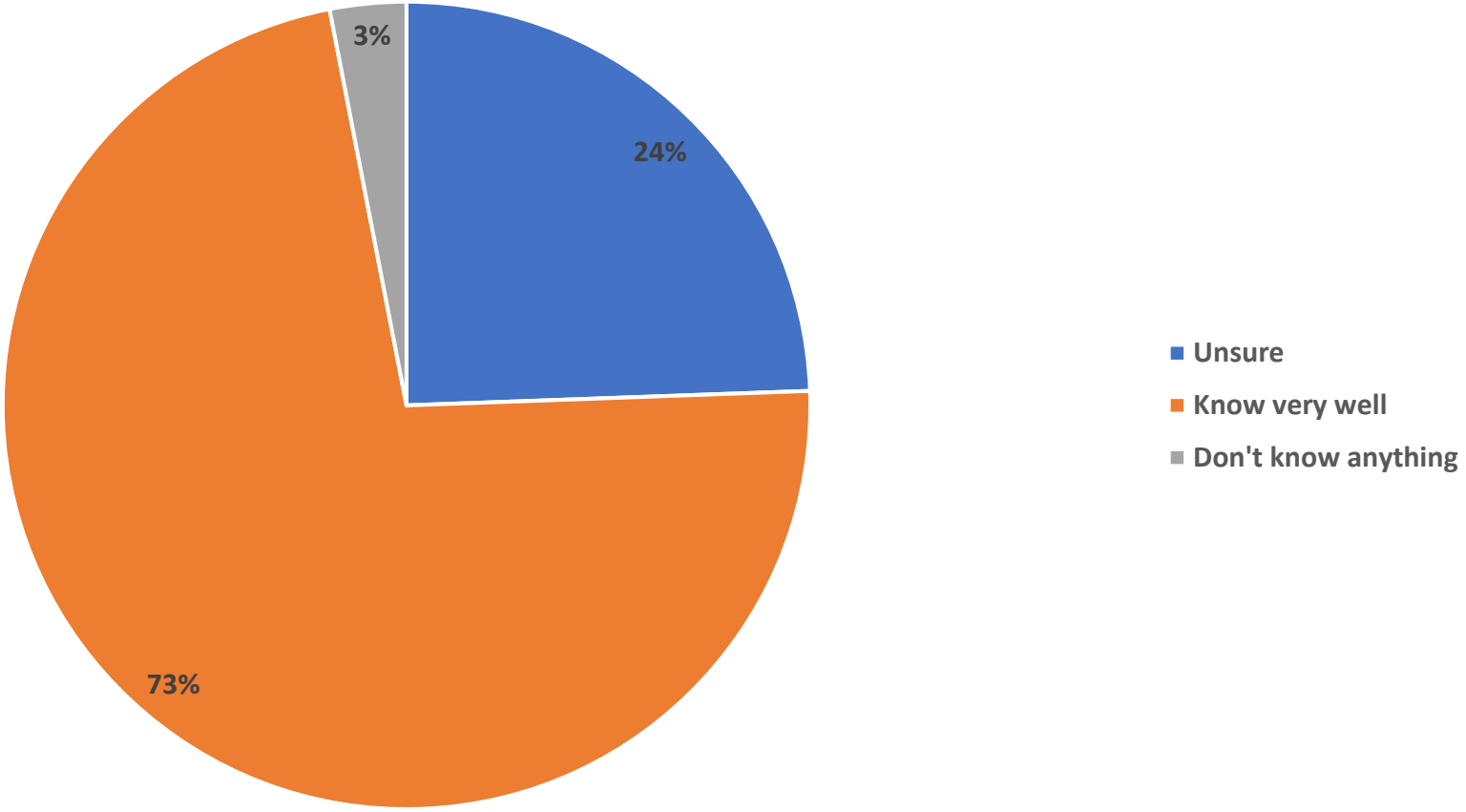
4. Your opinion about: Relevance of course content to the program learning outcomes



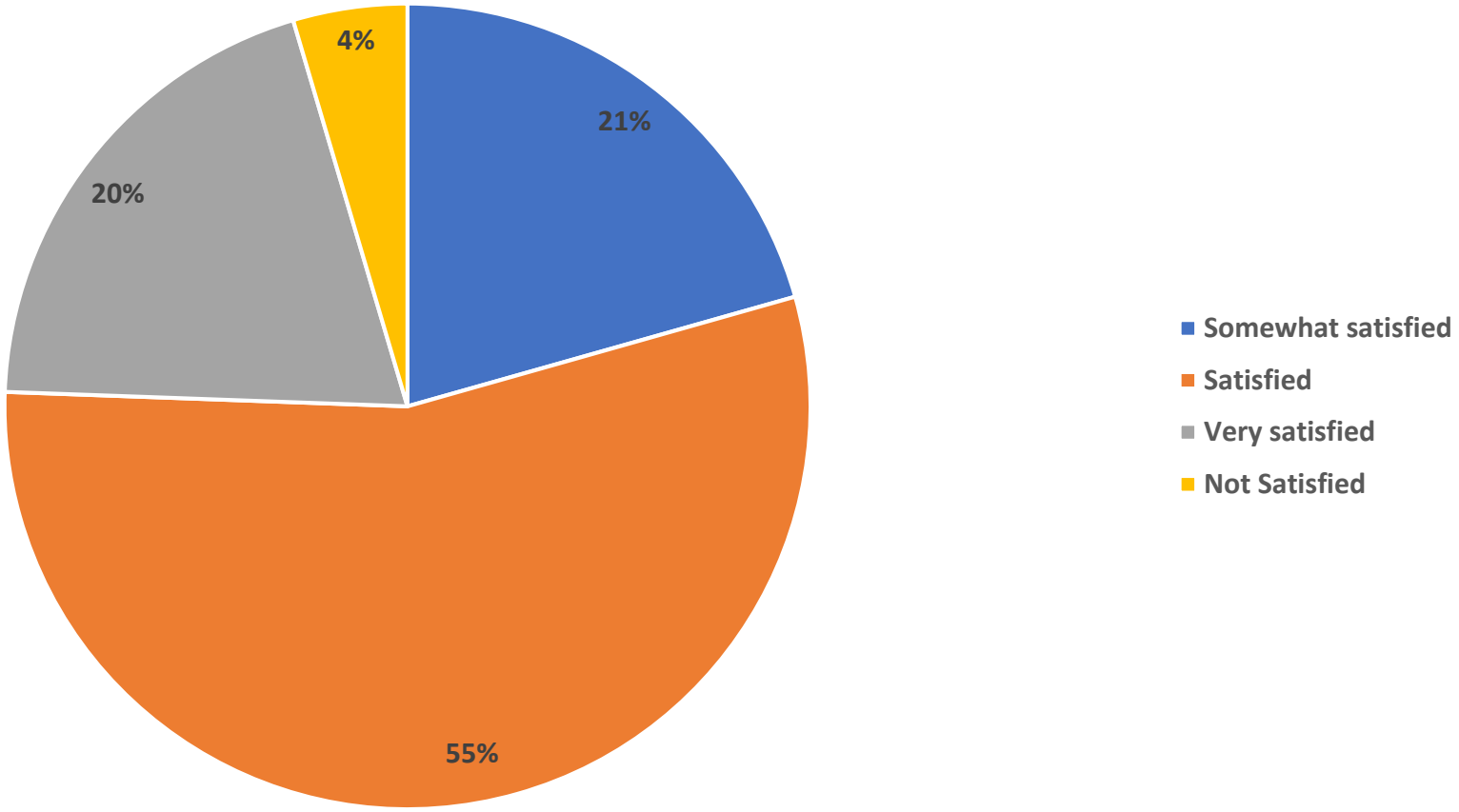
4. Your opinion about the inter-disciplinary aspect of the program curriculum



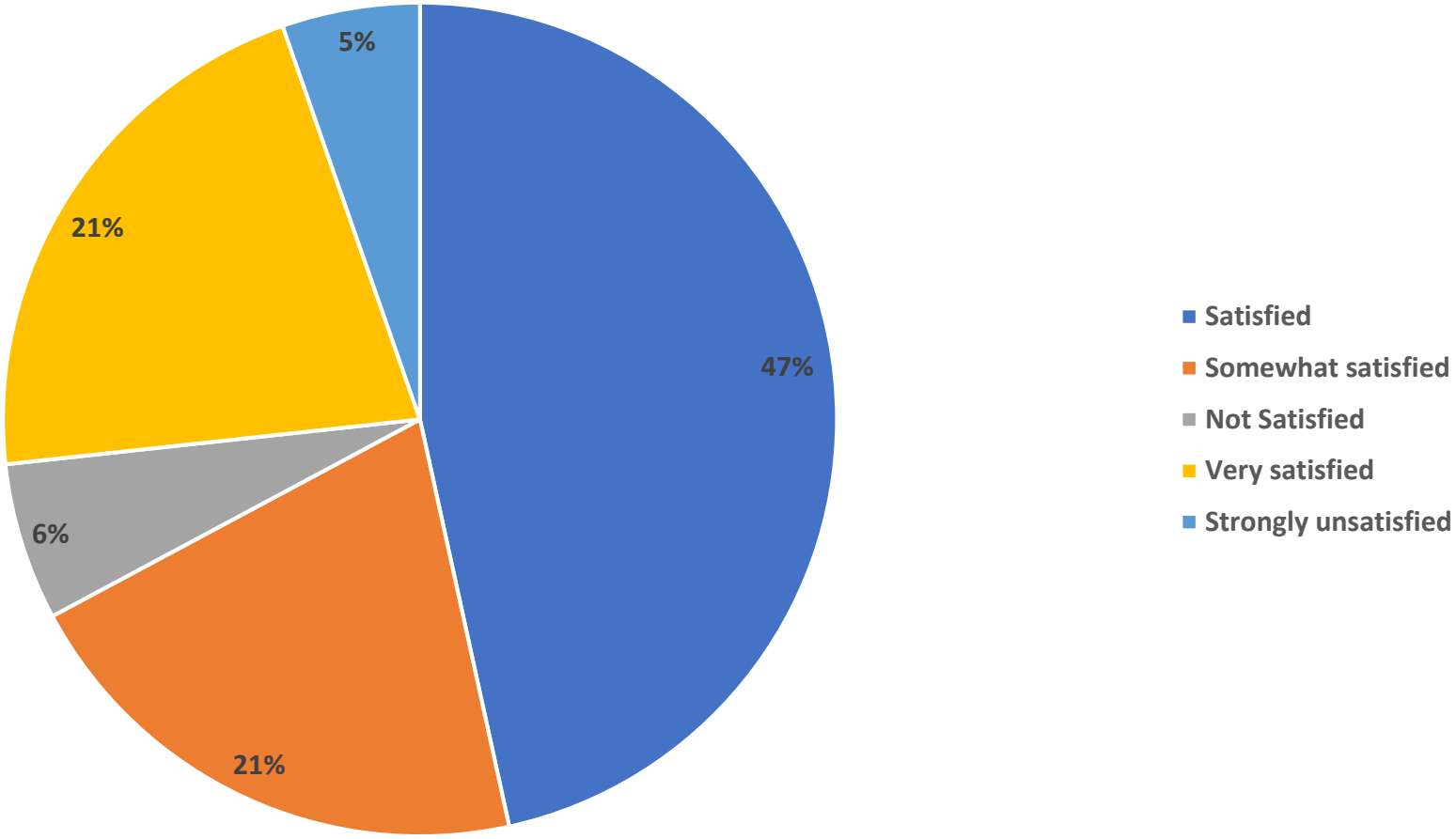
5. Are you informed about the procedures of examination, assessment methods and the appeal procedures?

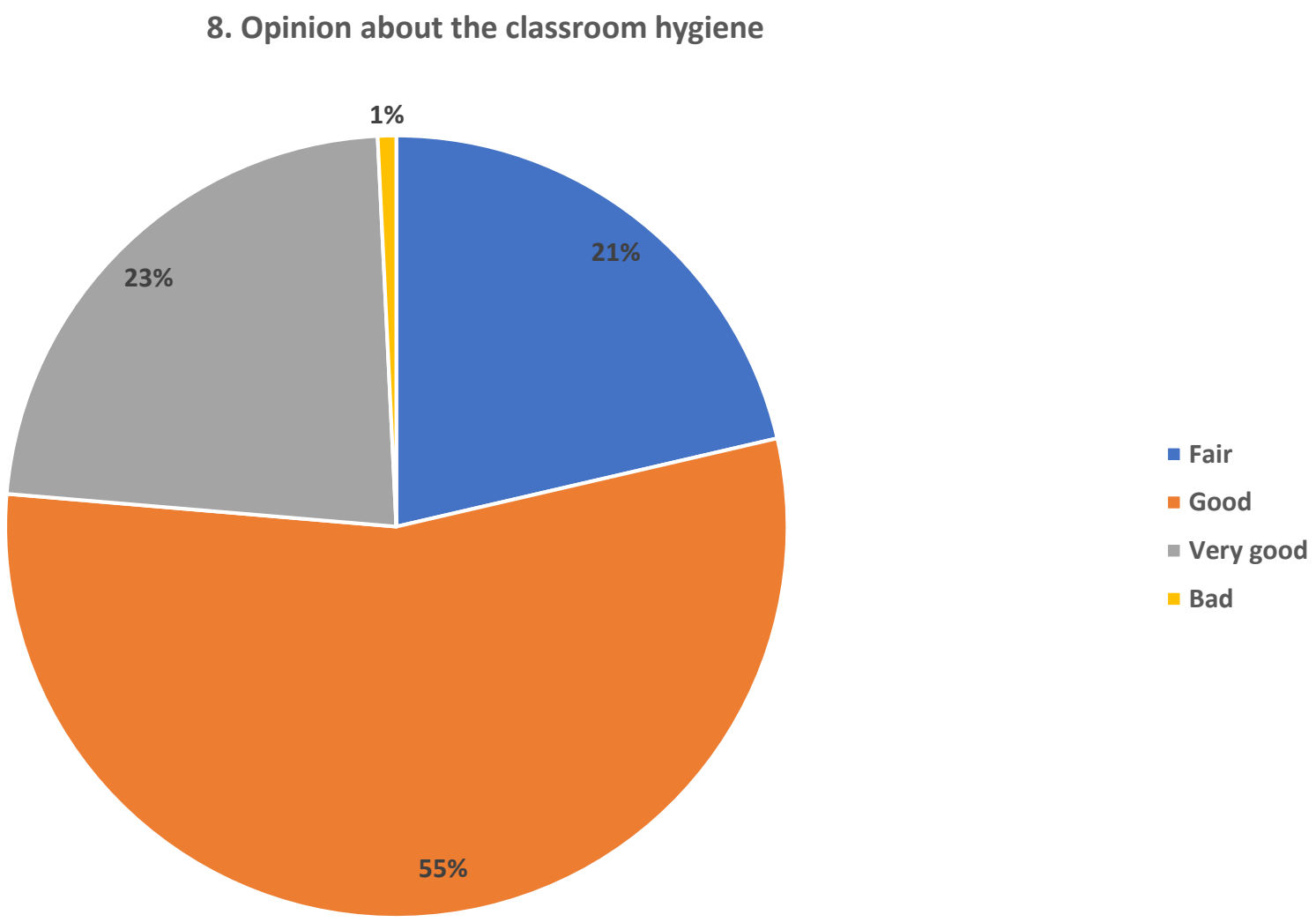


6. Are you satisfied with the exam regulation, assessment results and appeal result (if applicable)

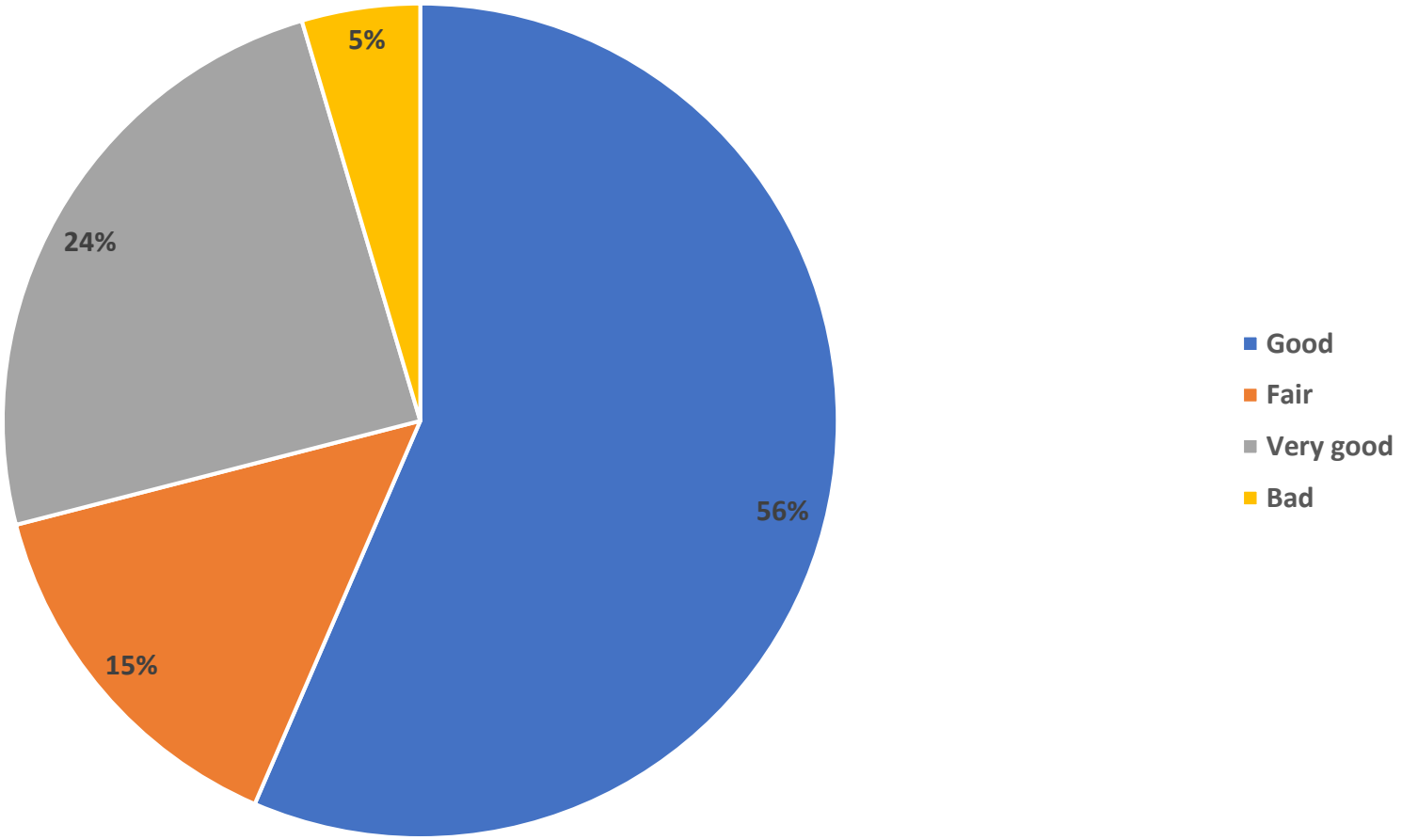


7. Are you satisfied with the advice received about your training program

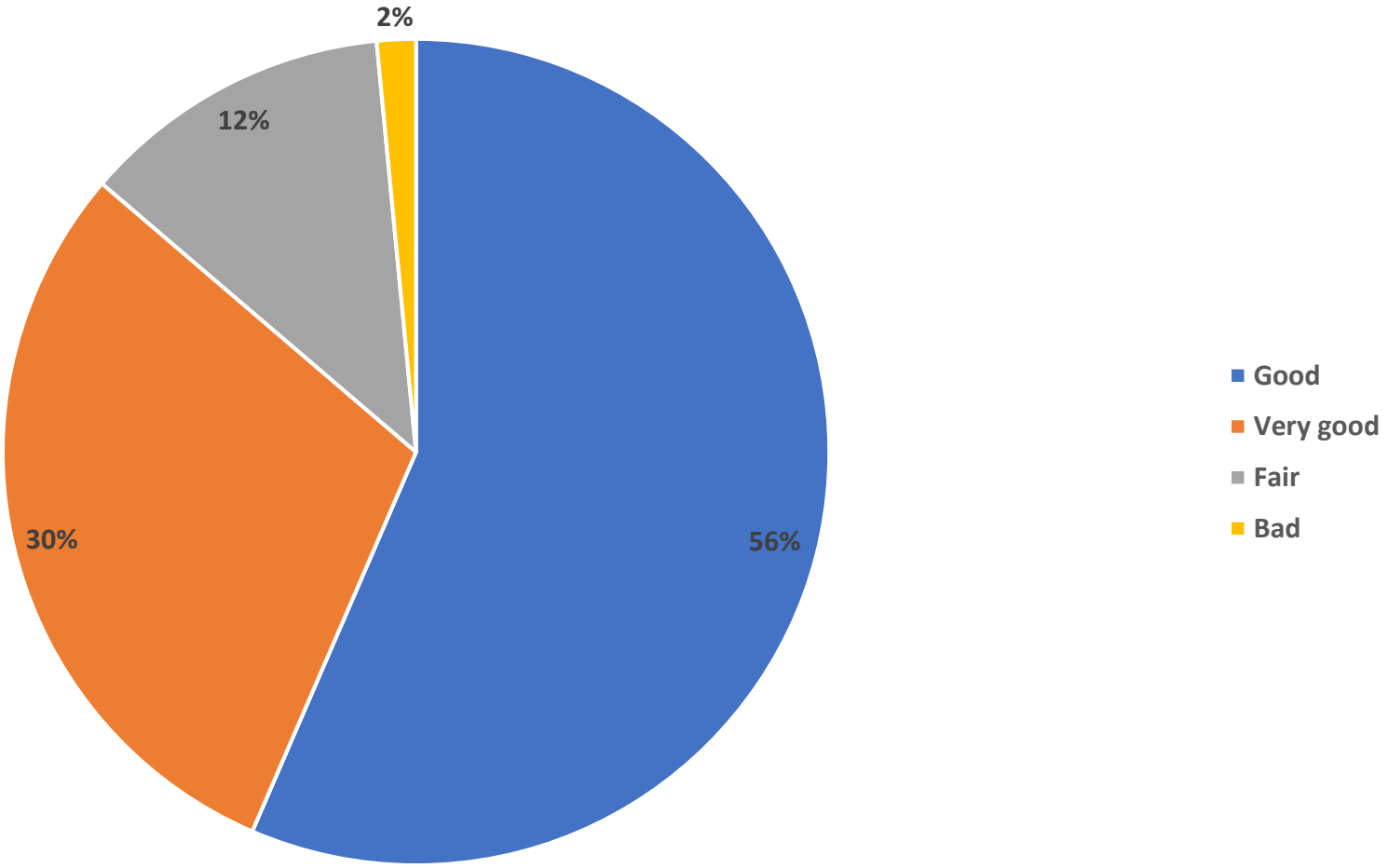



8. Opinion about the classroom hygiene
1%
21%
23%
55%
Fair
Good
Very good
Bad

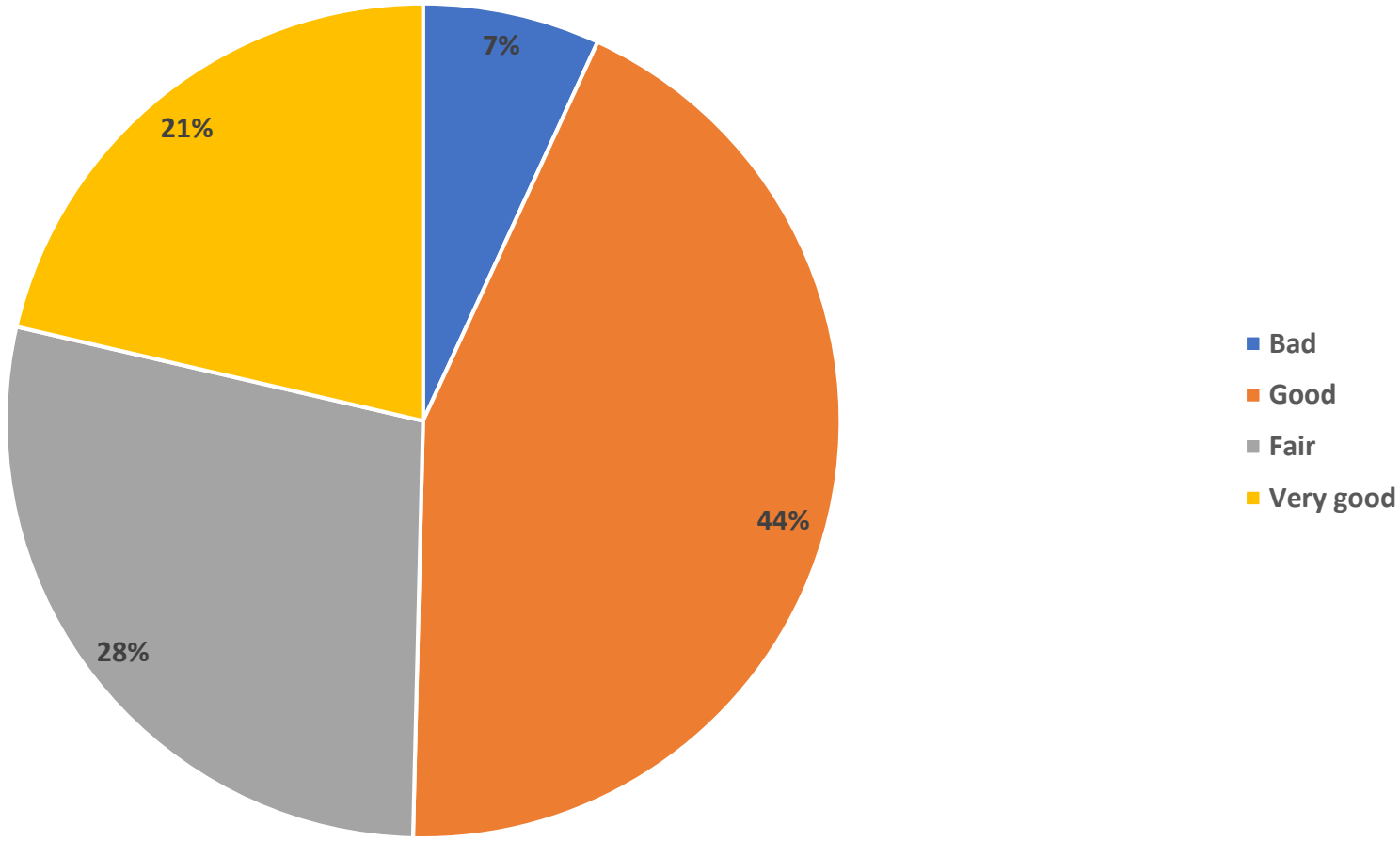
8. Your opinion about how the classroom size match the number of students enrolled



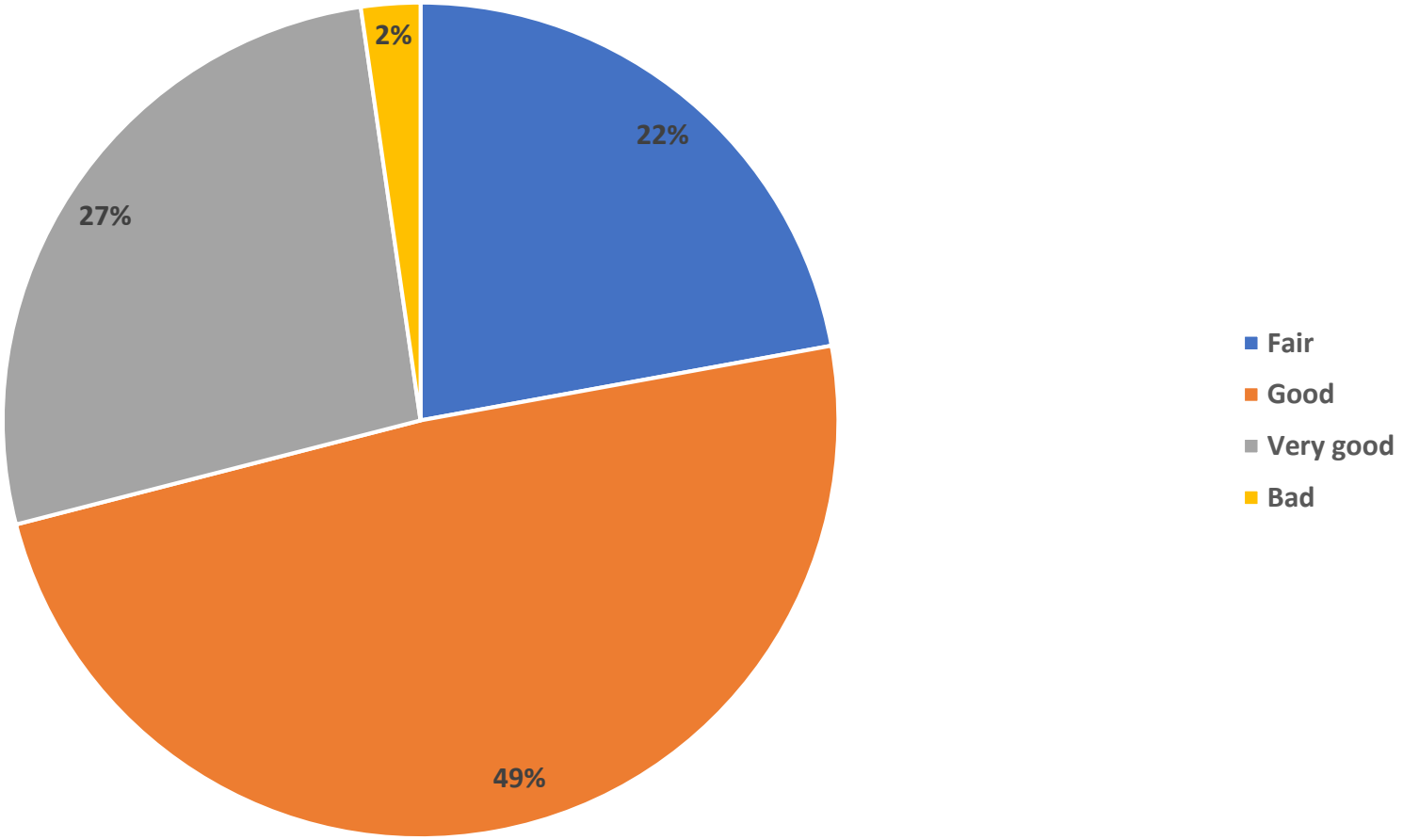
8. Your opinion: Class tables and chair suitable for stuying purpose



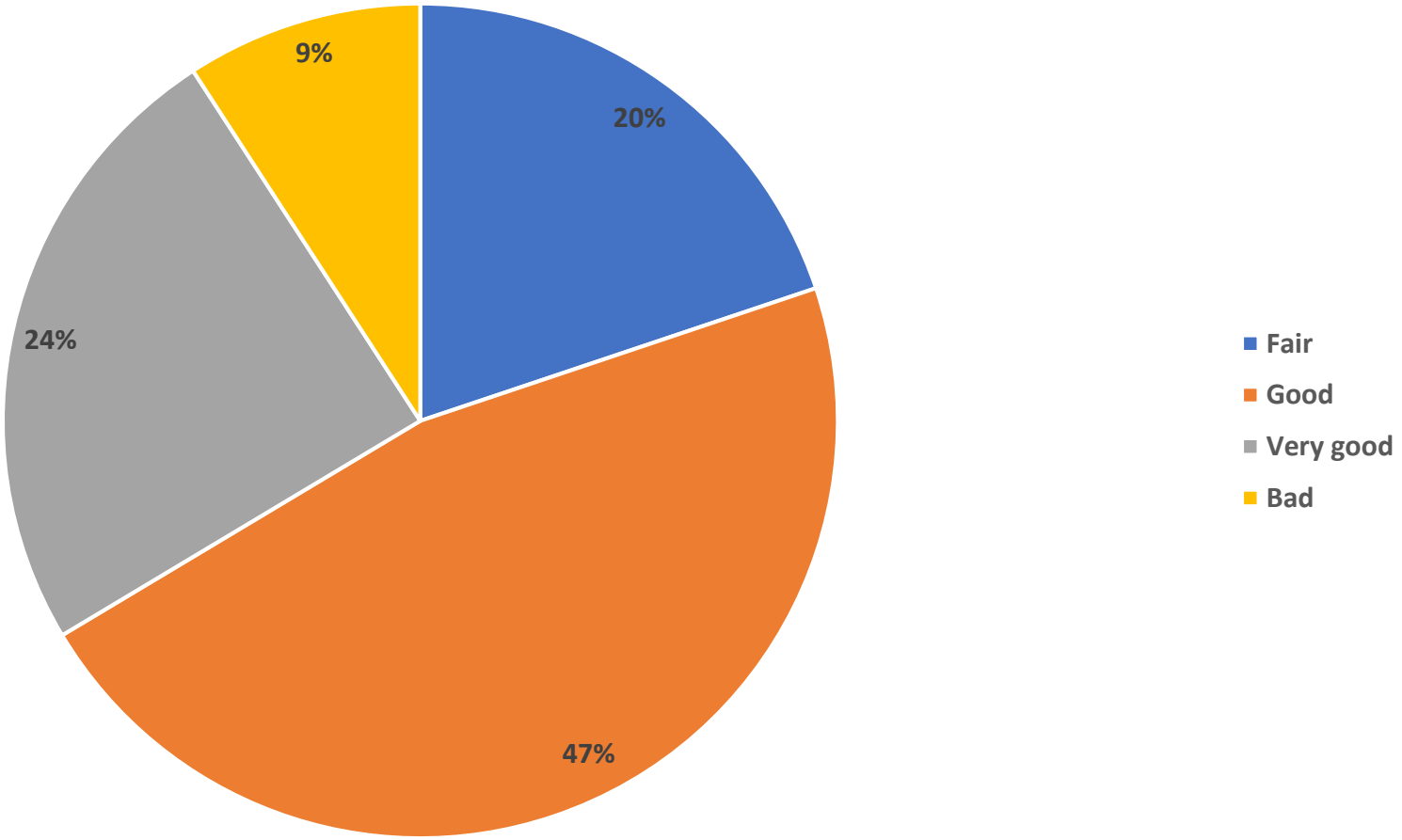
8. Quality of classroom tables and chairs



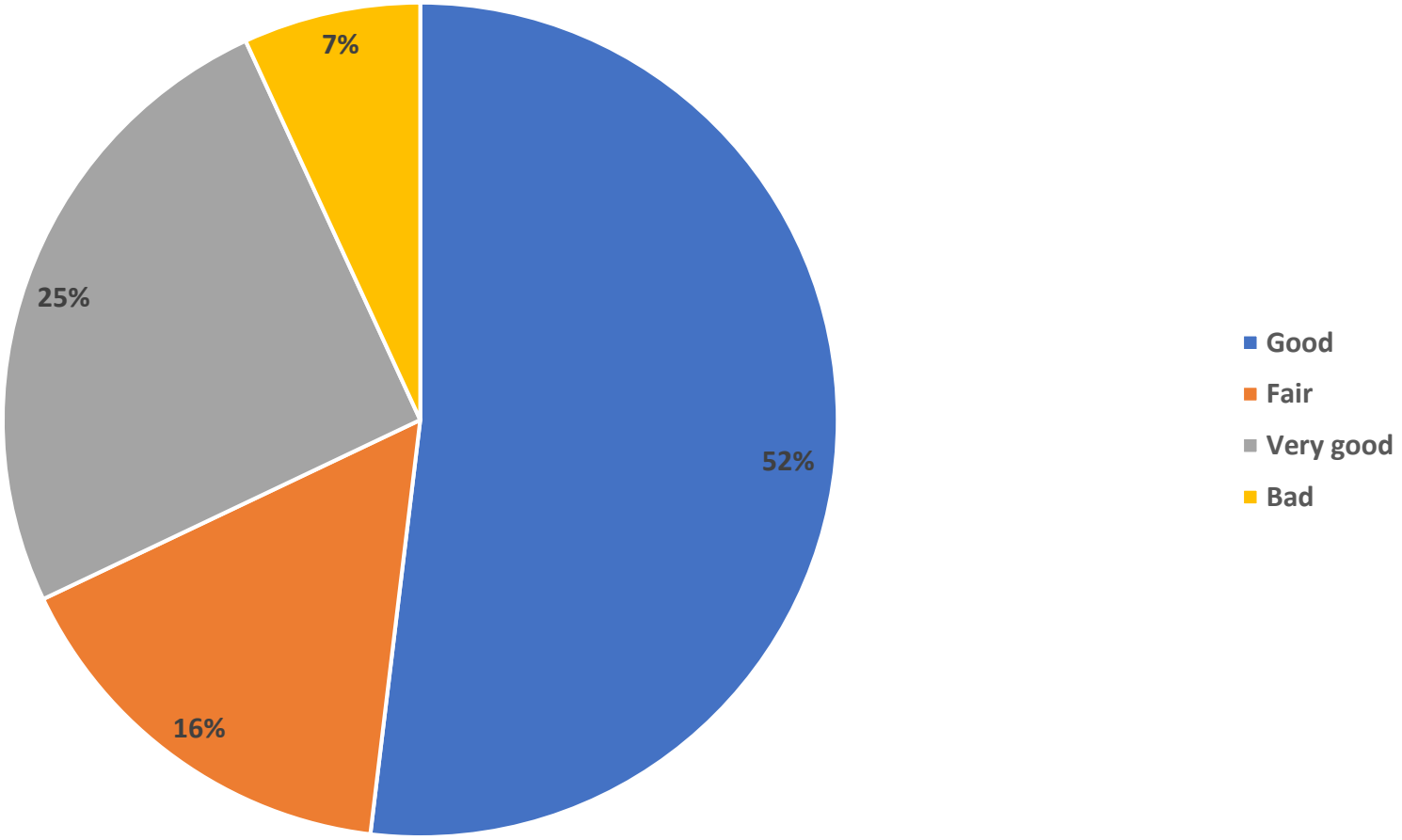
8. Quality of projectors and screen in the classrooms



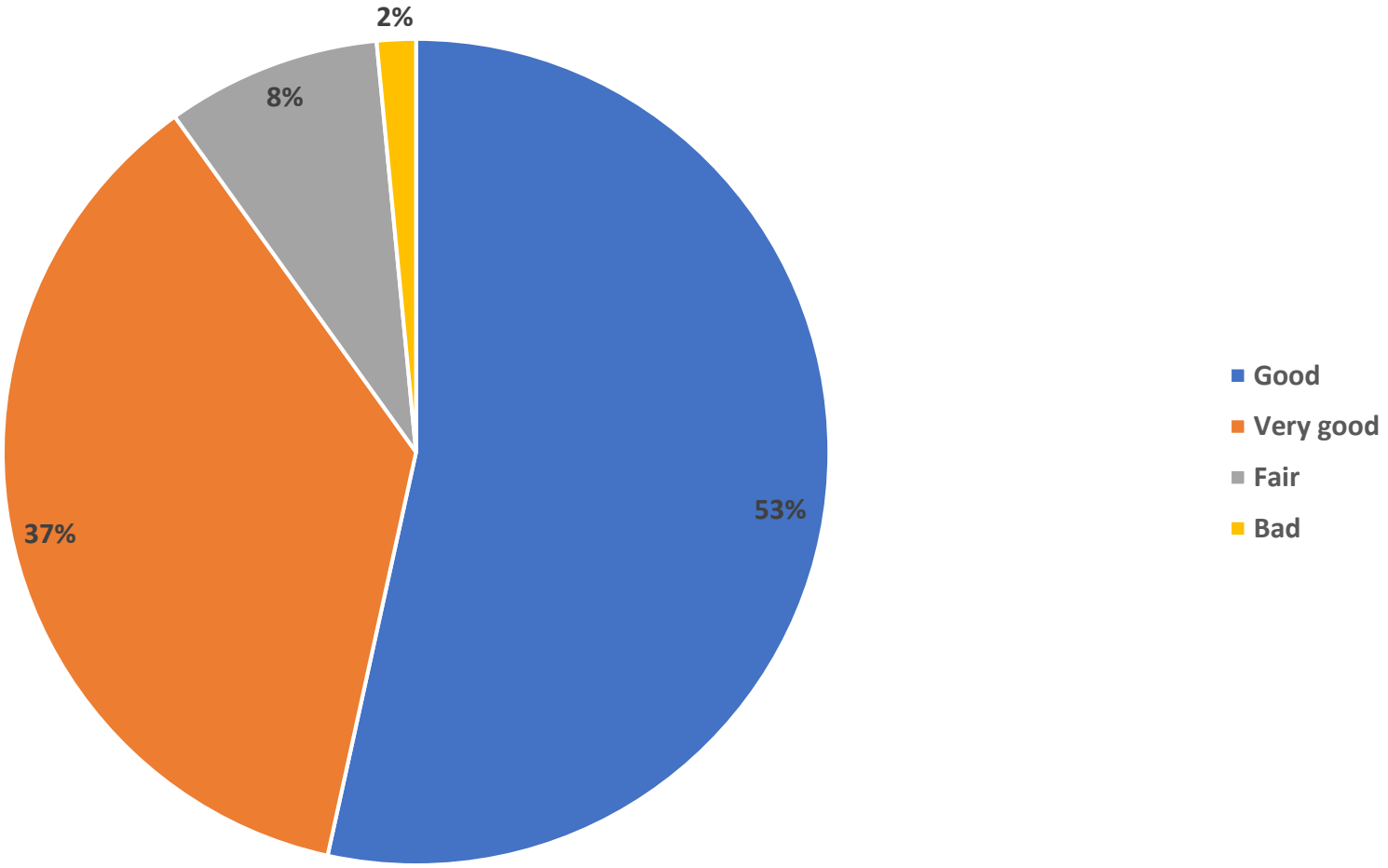
8. Quality of the lighting system and speakers in the classrooms



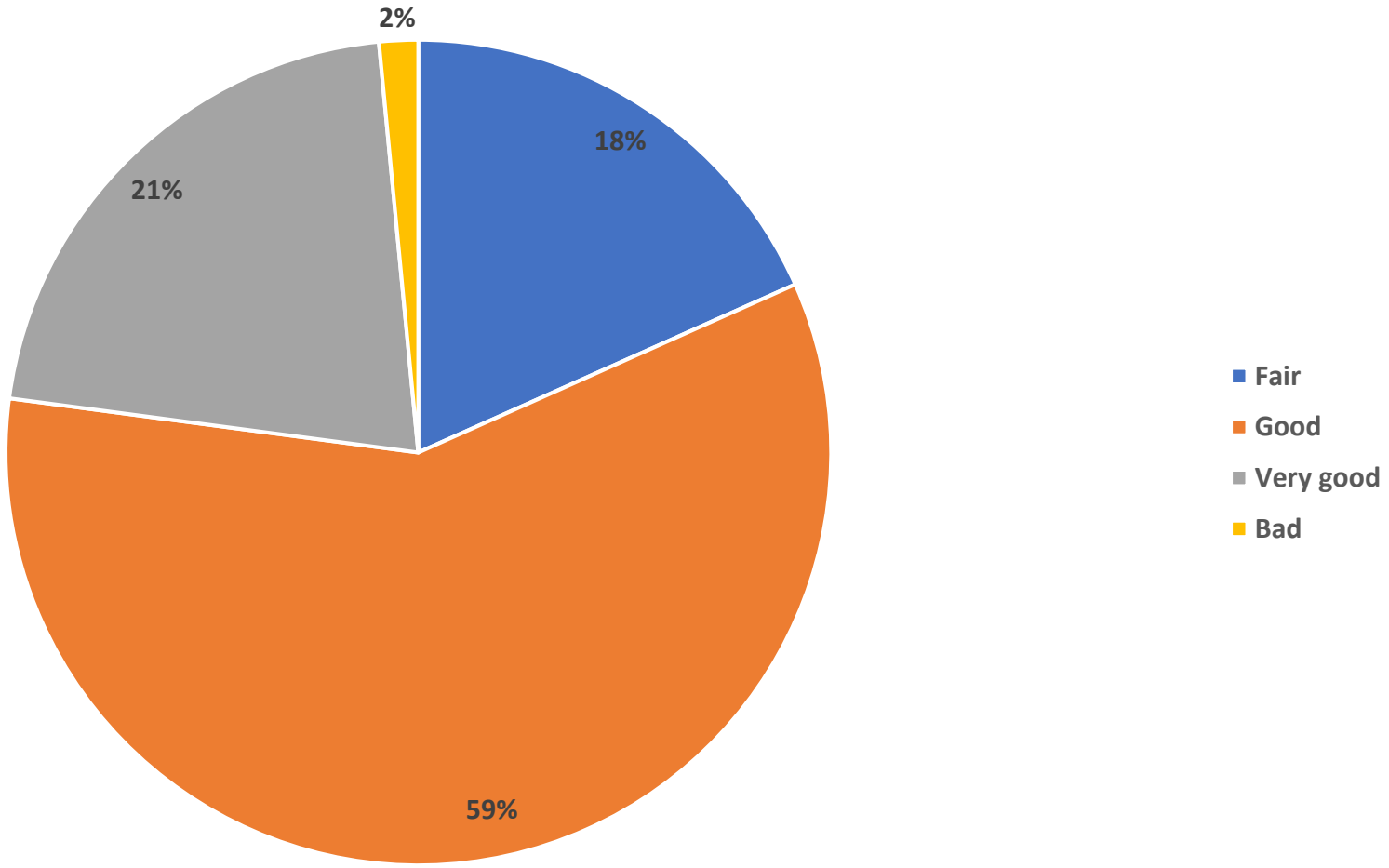
8. Quality of the chalkboard, plastic boards



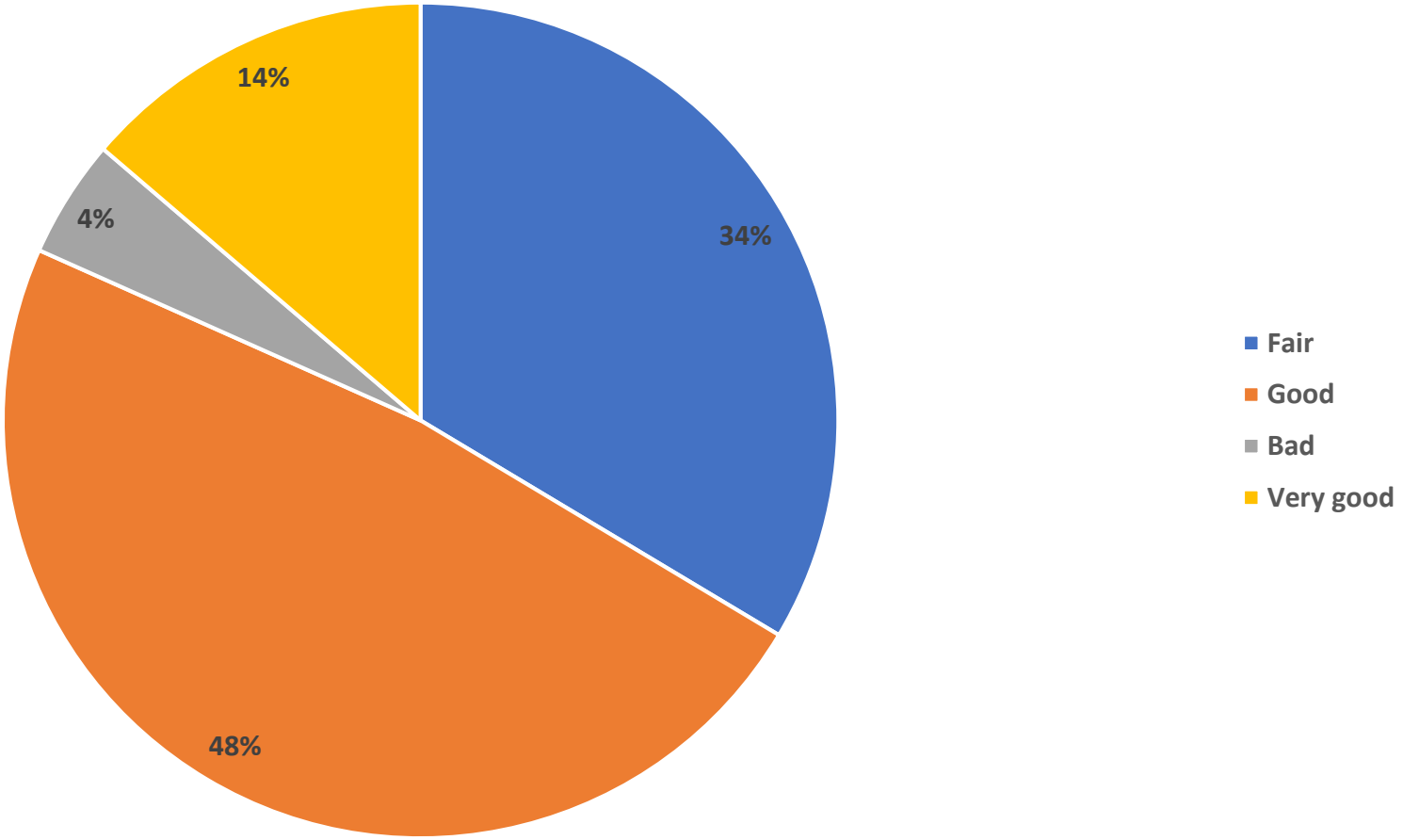
8. Quality of air conditioning system and air ventilation system



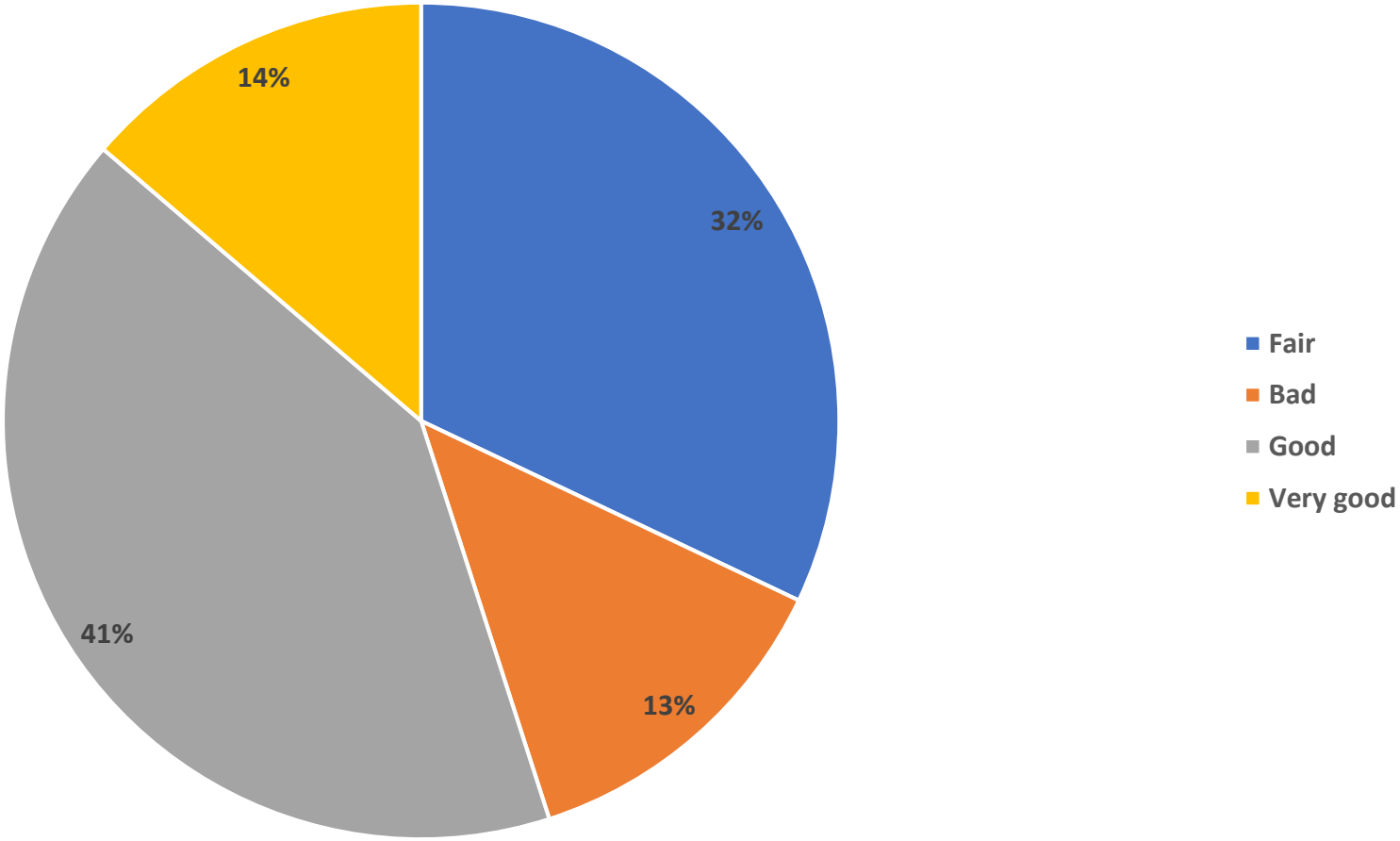
8. General assessment of the quality of classrooms



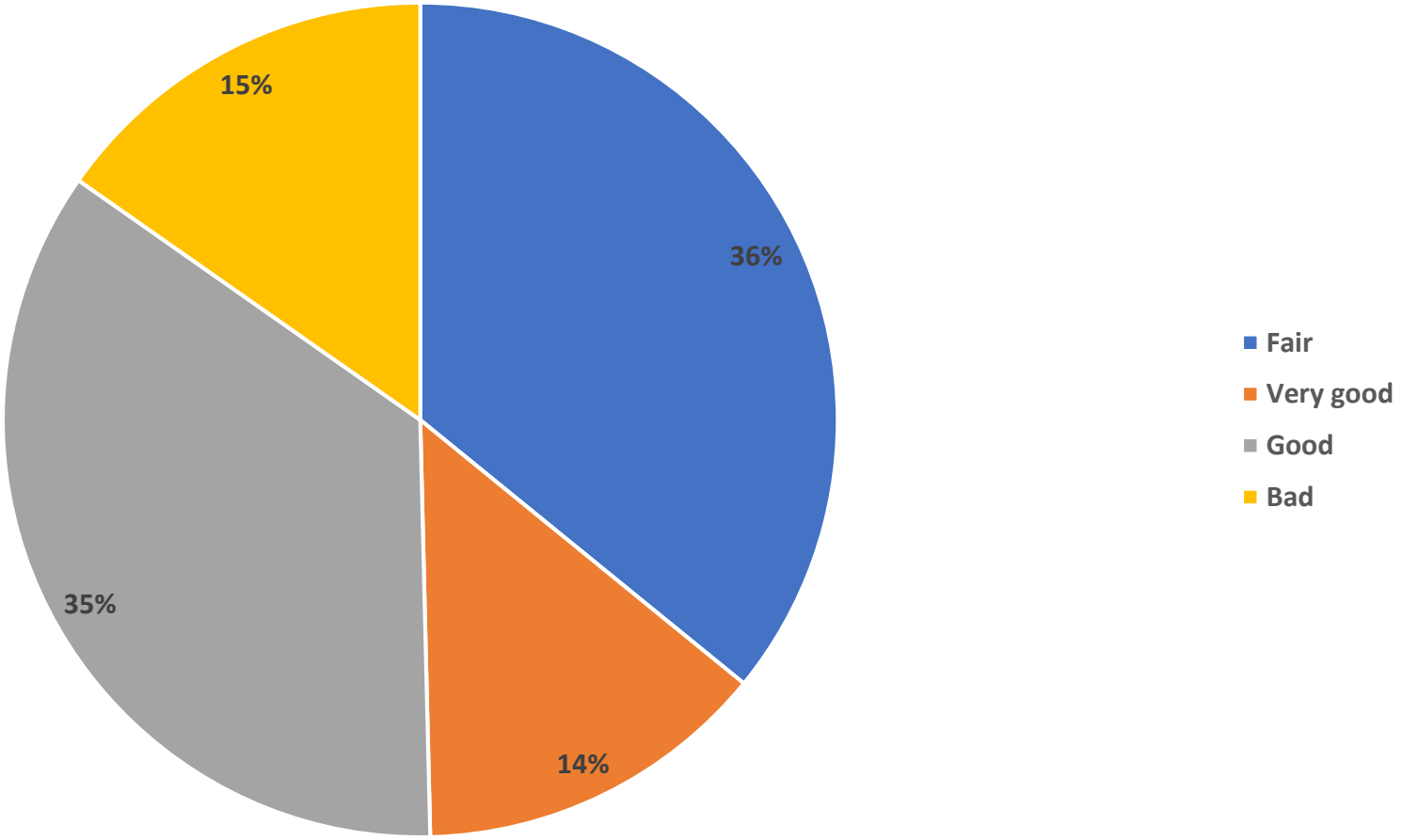
9. Quality of support service of computer labs



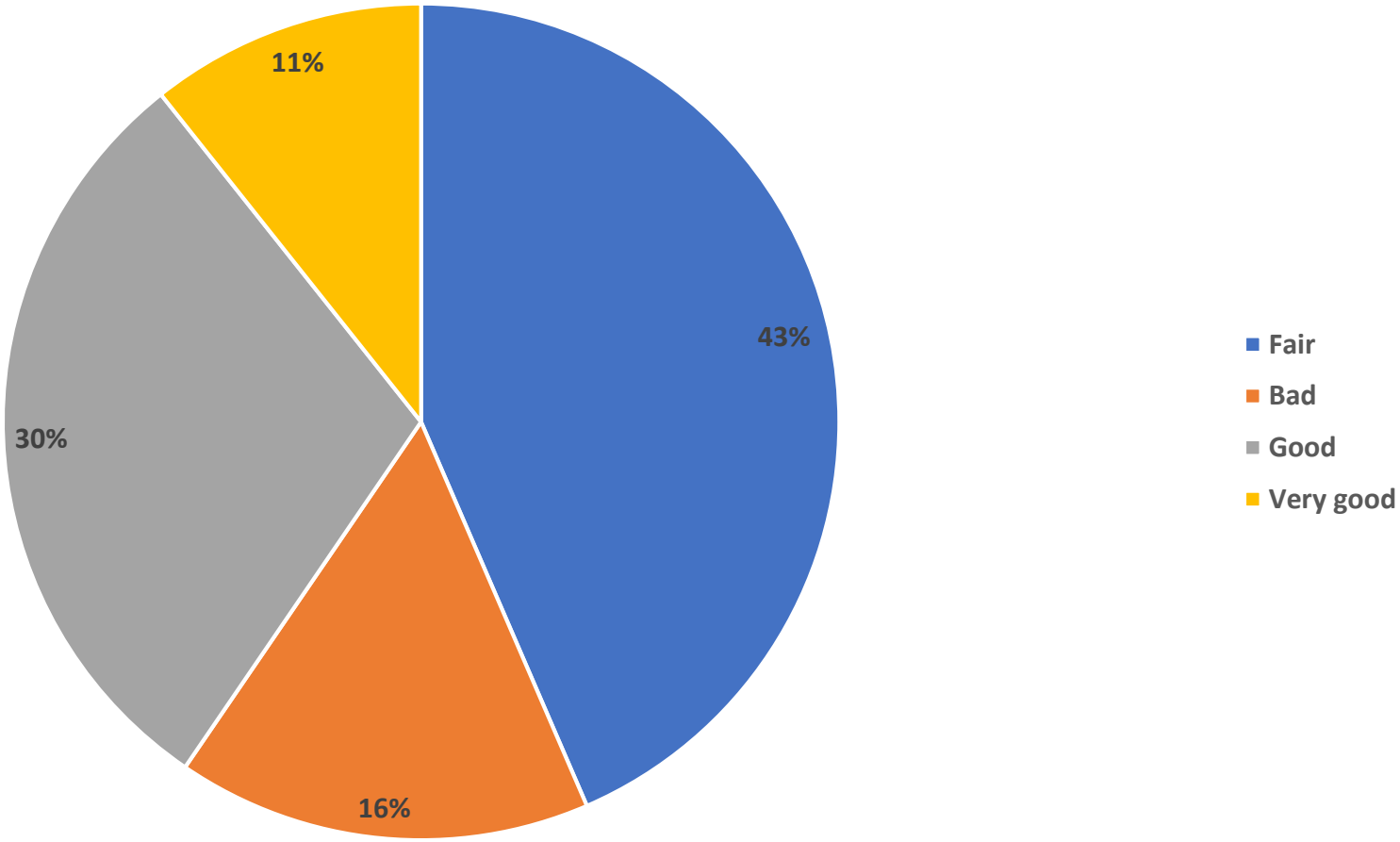
9. The number of lab computers adequately matches the number of students



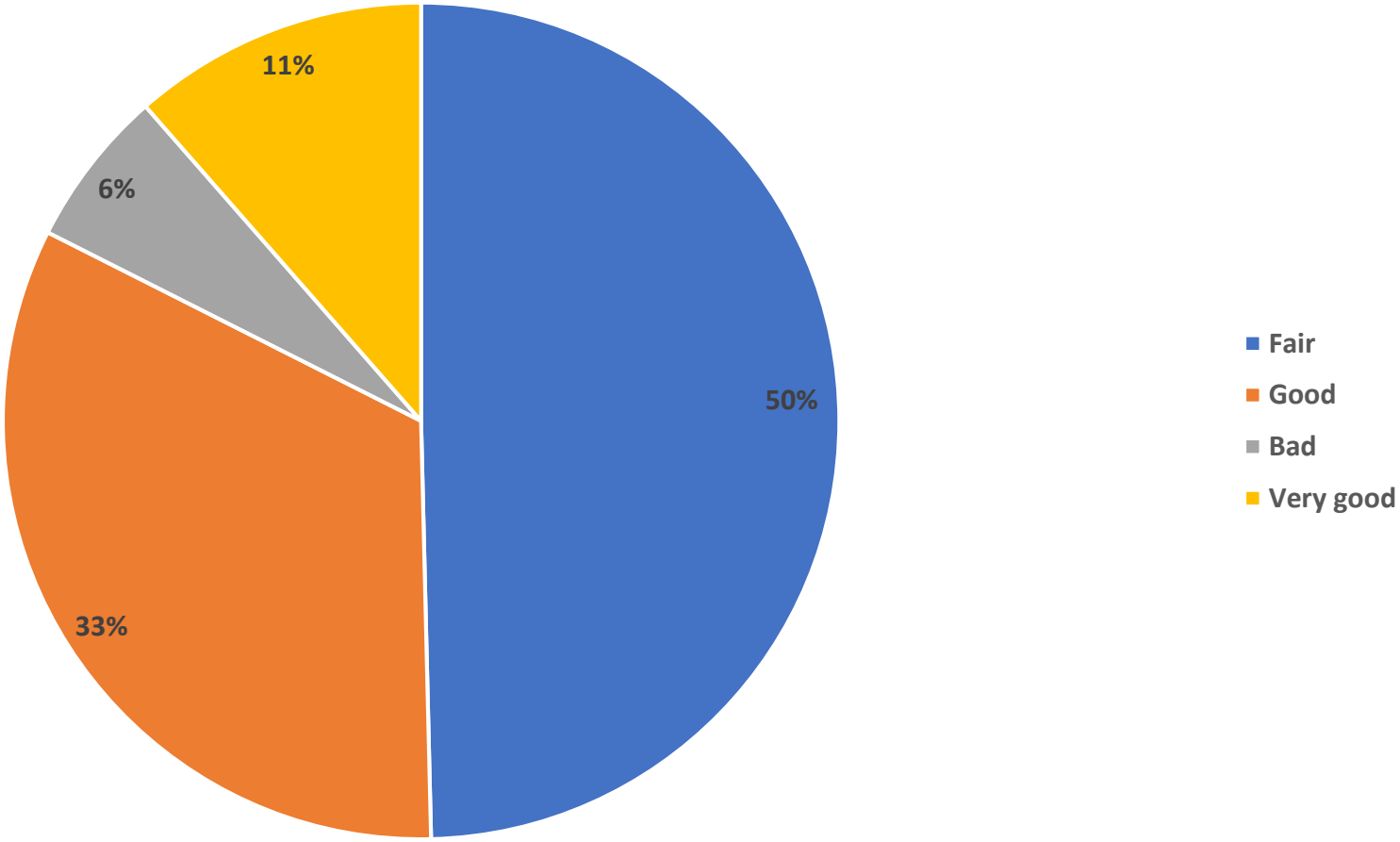
9. Lab computers meet the requirement of study



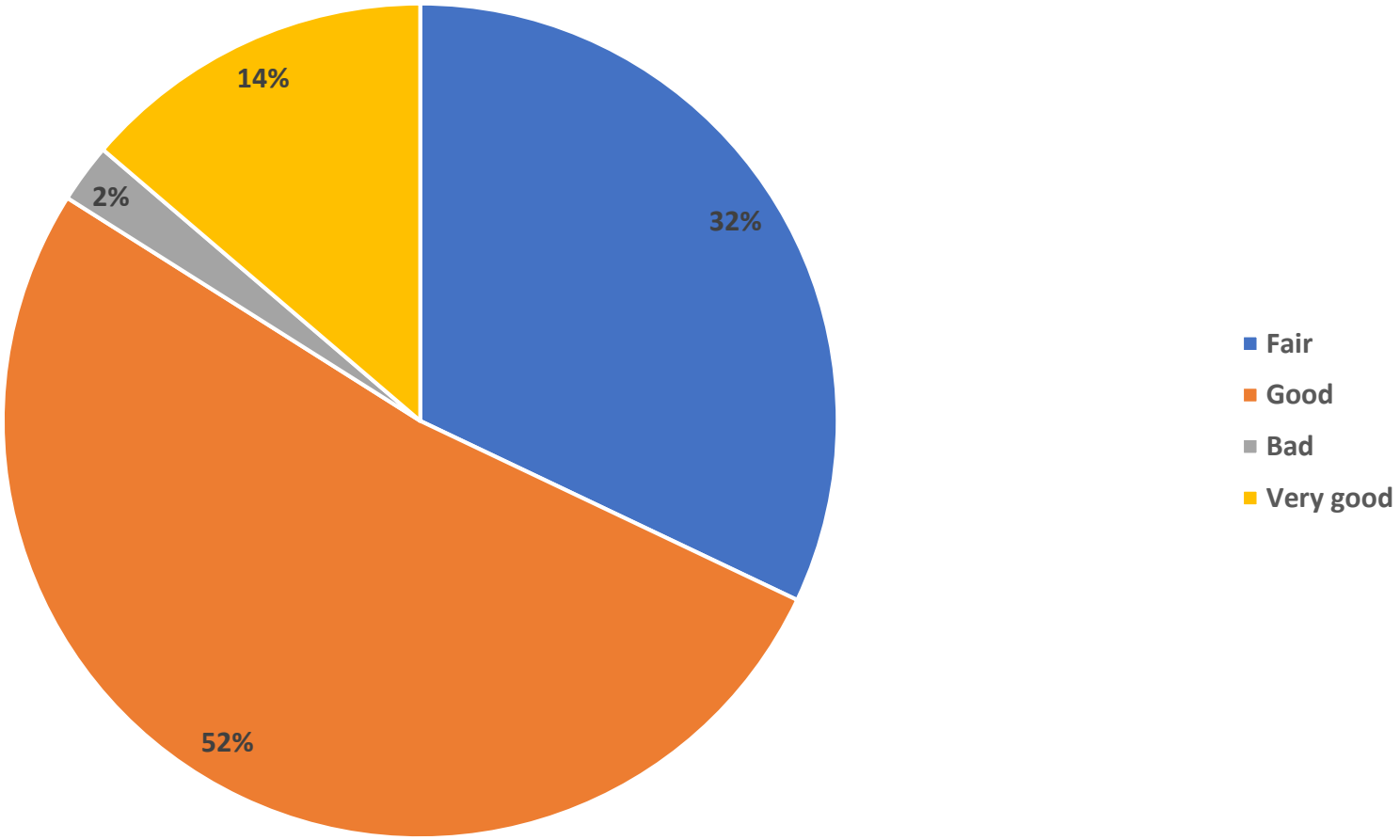
9. Quality of computers/experimental devices



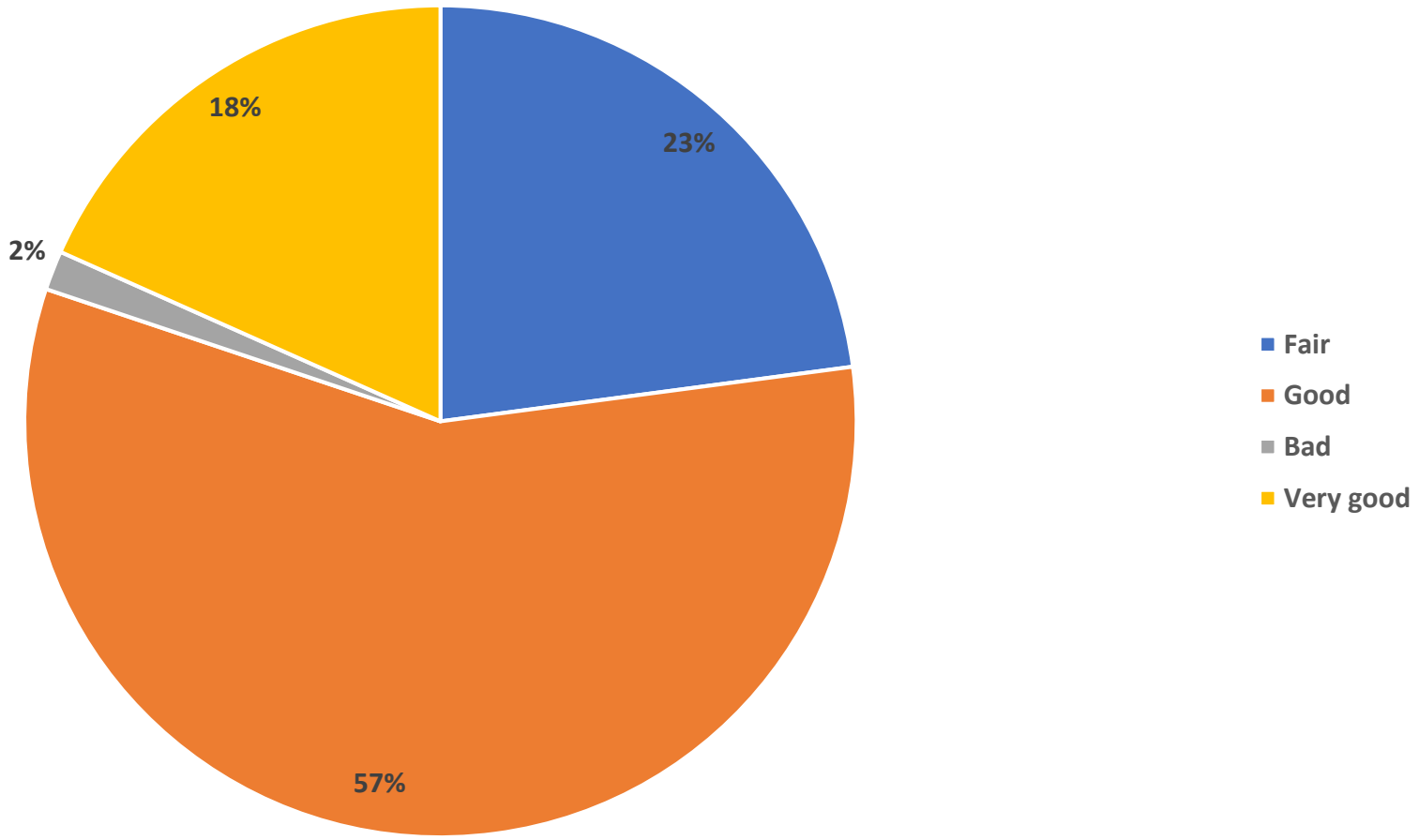
9. General asssessment of the computer and experimental labs



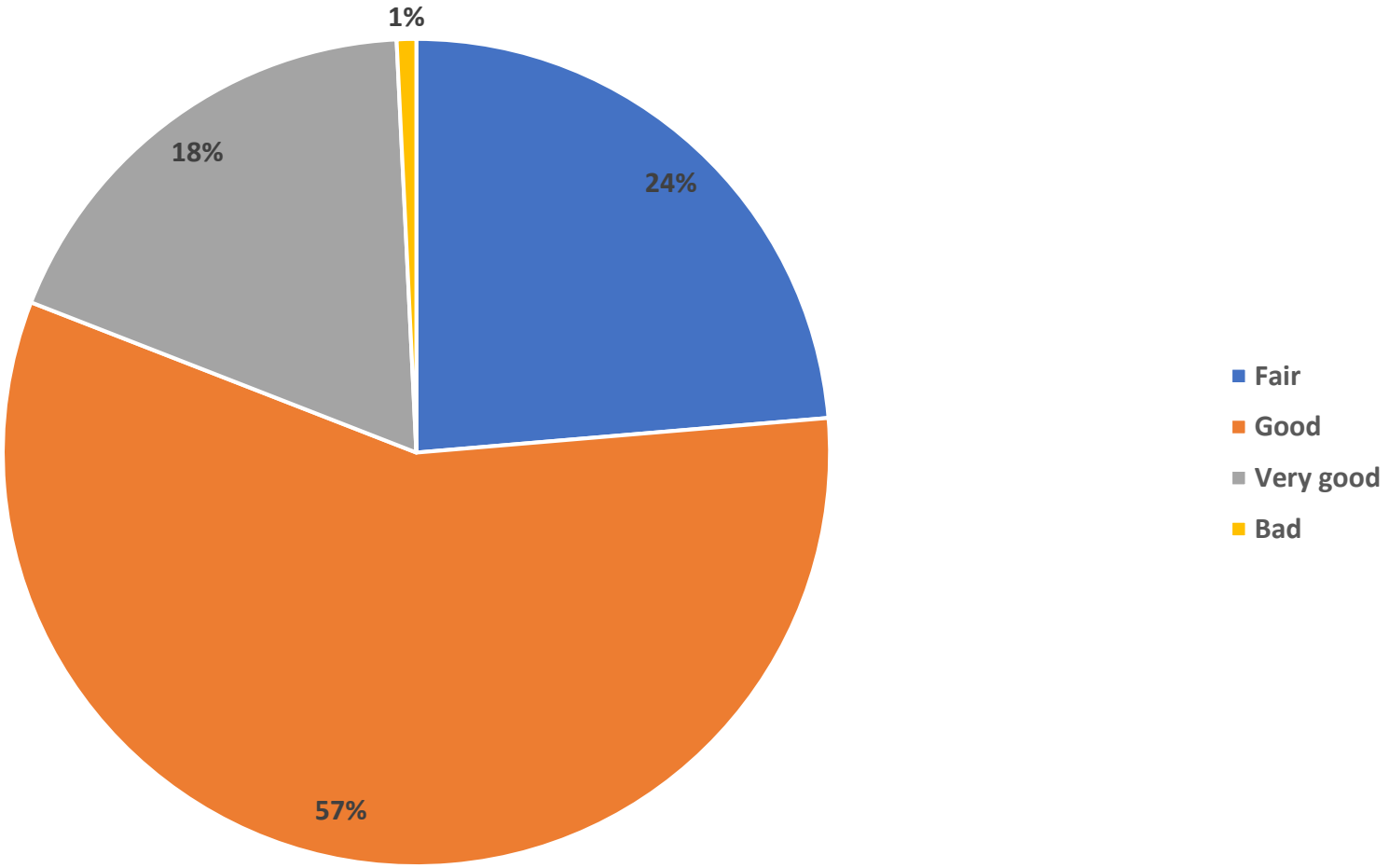
10. Performance of the class monitors



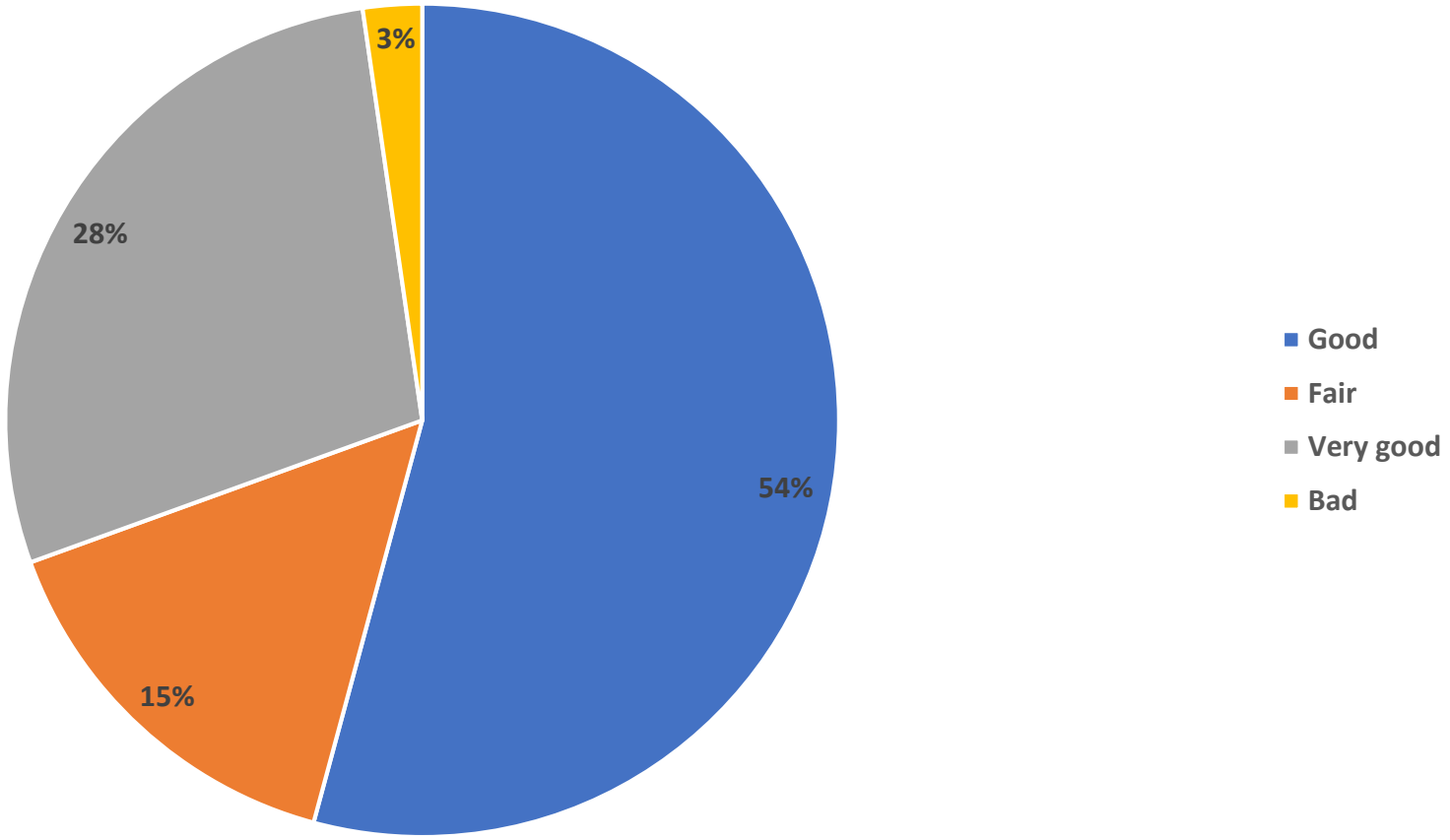
10. Academic mangement system of the Department



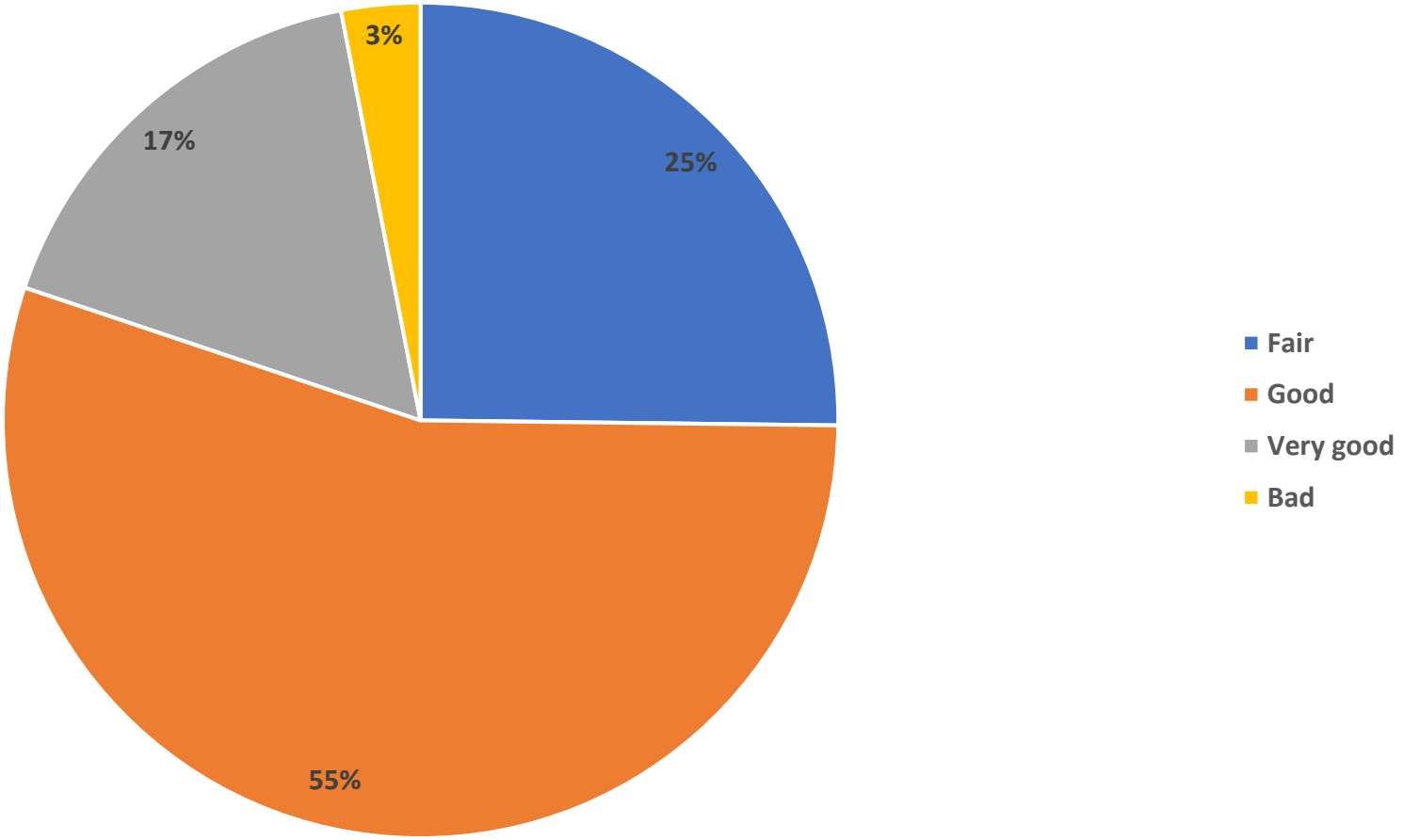
10. Management of the School of Electrical Engineering



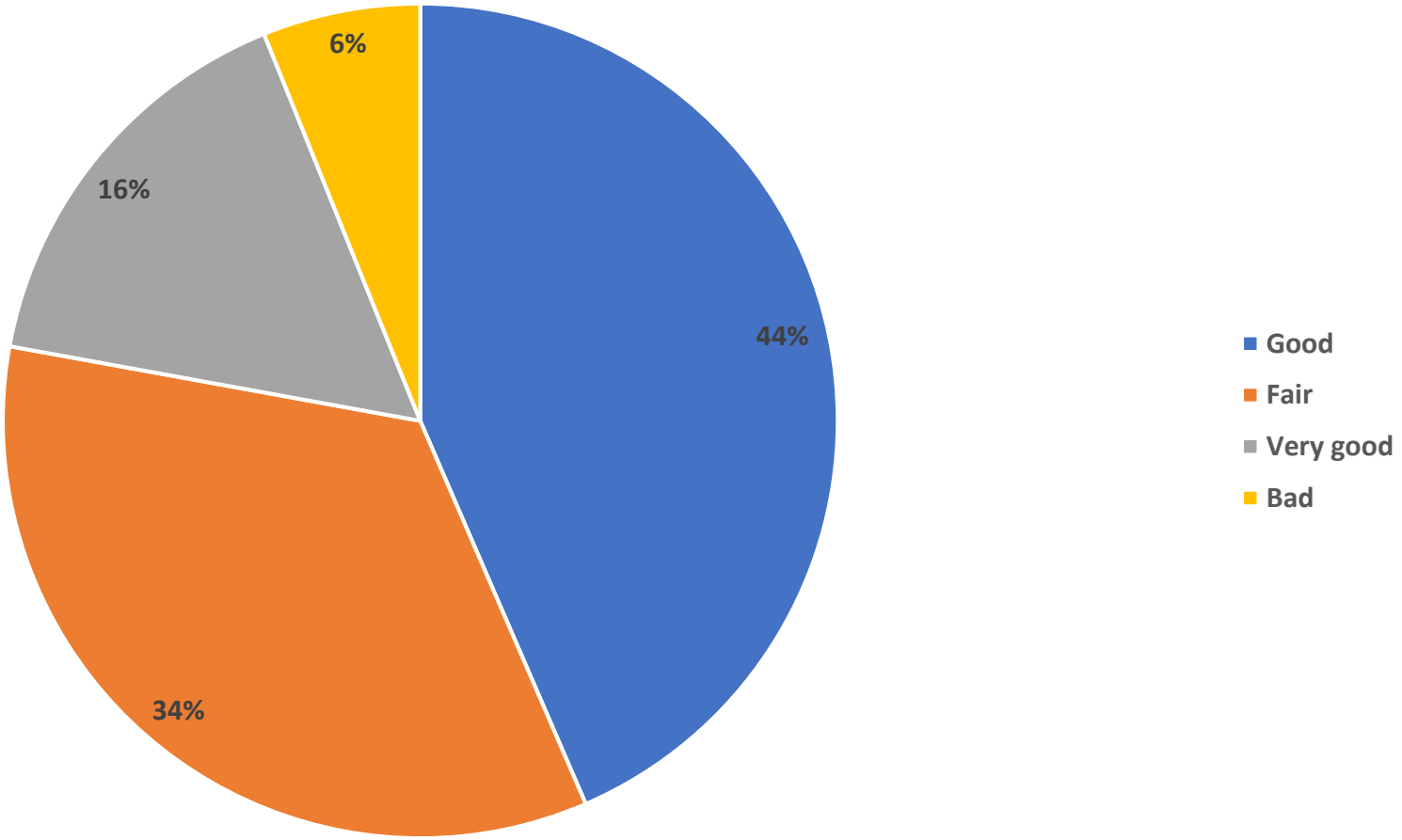
10. Application of Information technology in communicating with students about course timeline, assessment results, course registrations, etc.



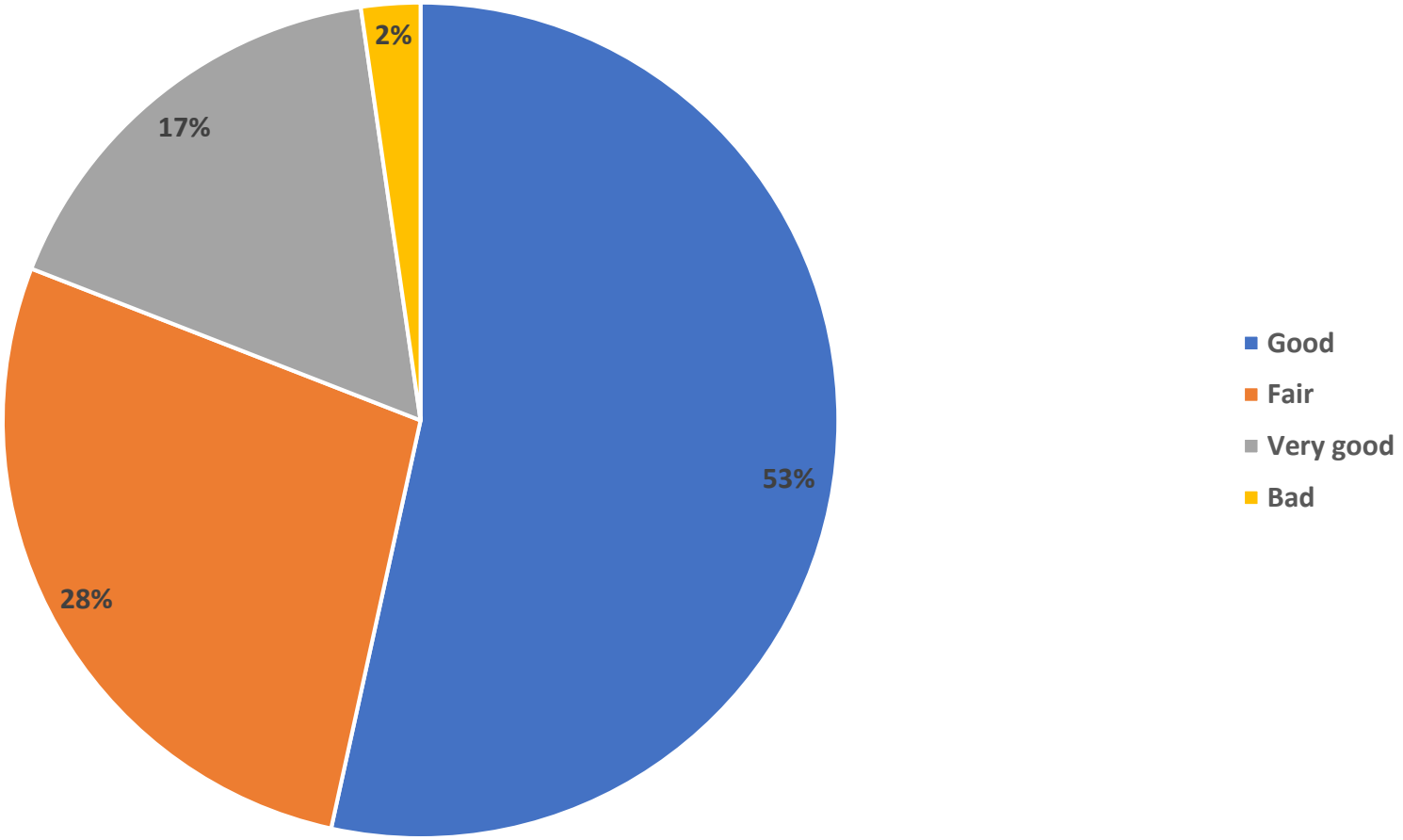
10. How often the departments and the school ask for your feedback



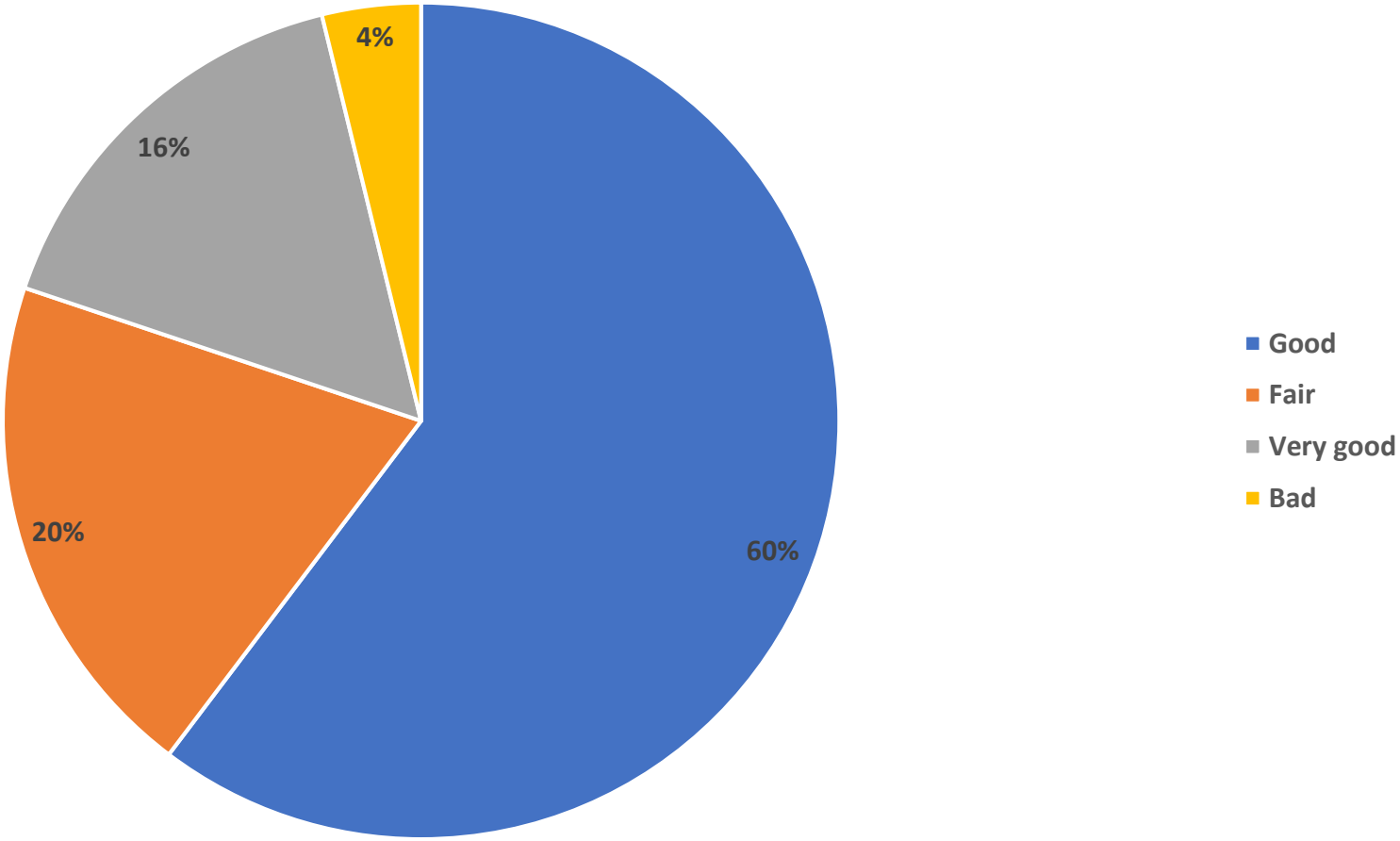
11. Extracurricular activities: scientific competition, seminars



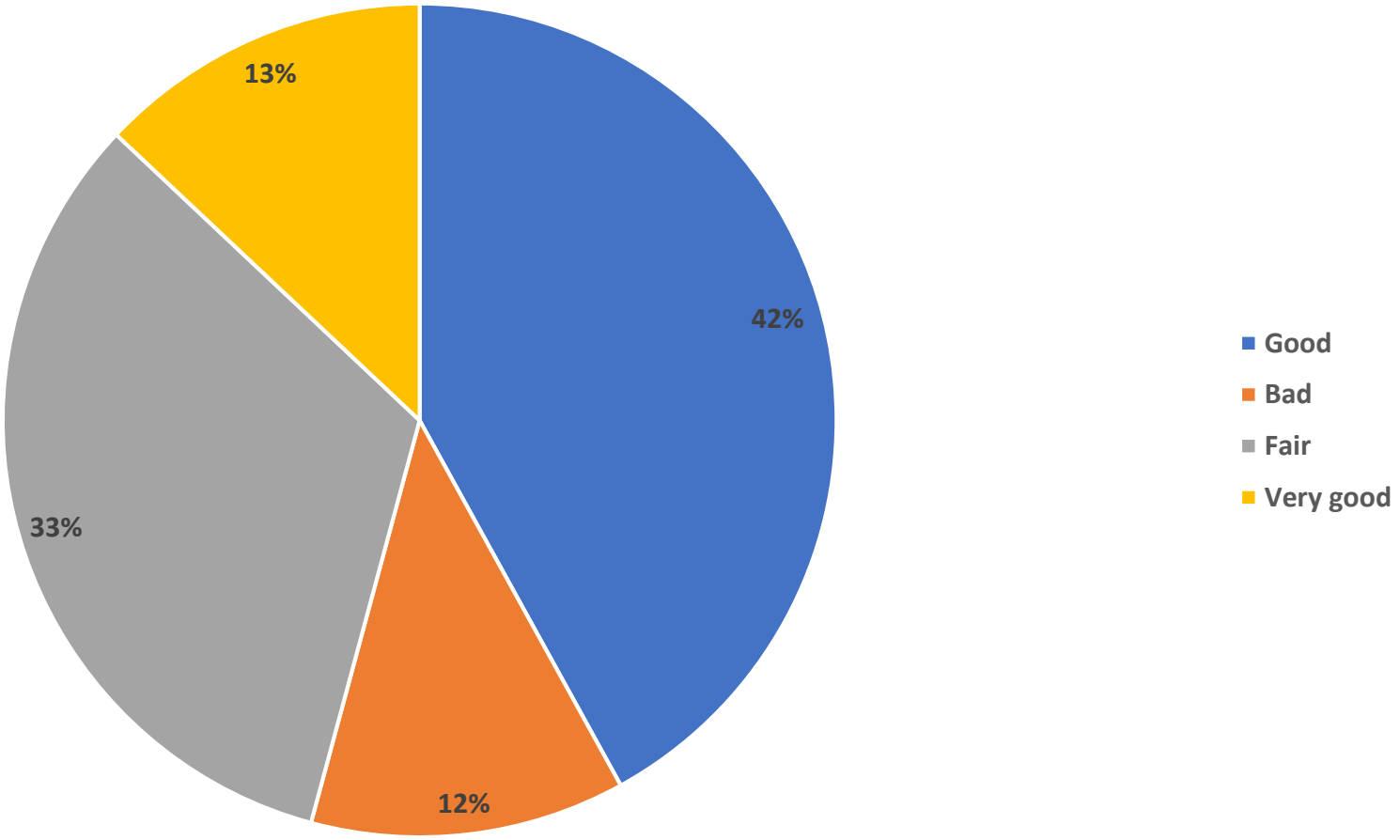
11. Quality of scientific seminars for students



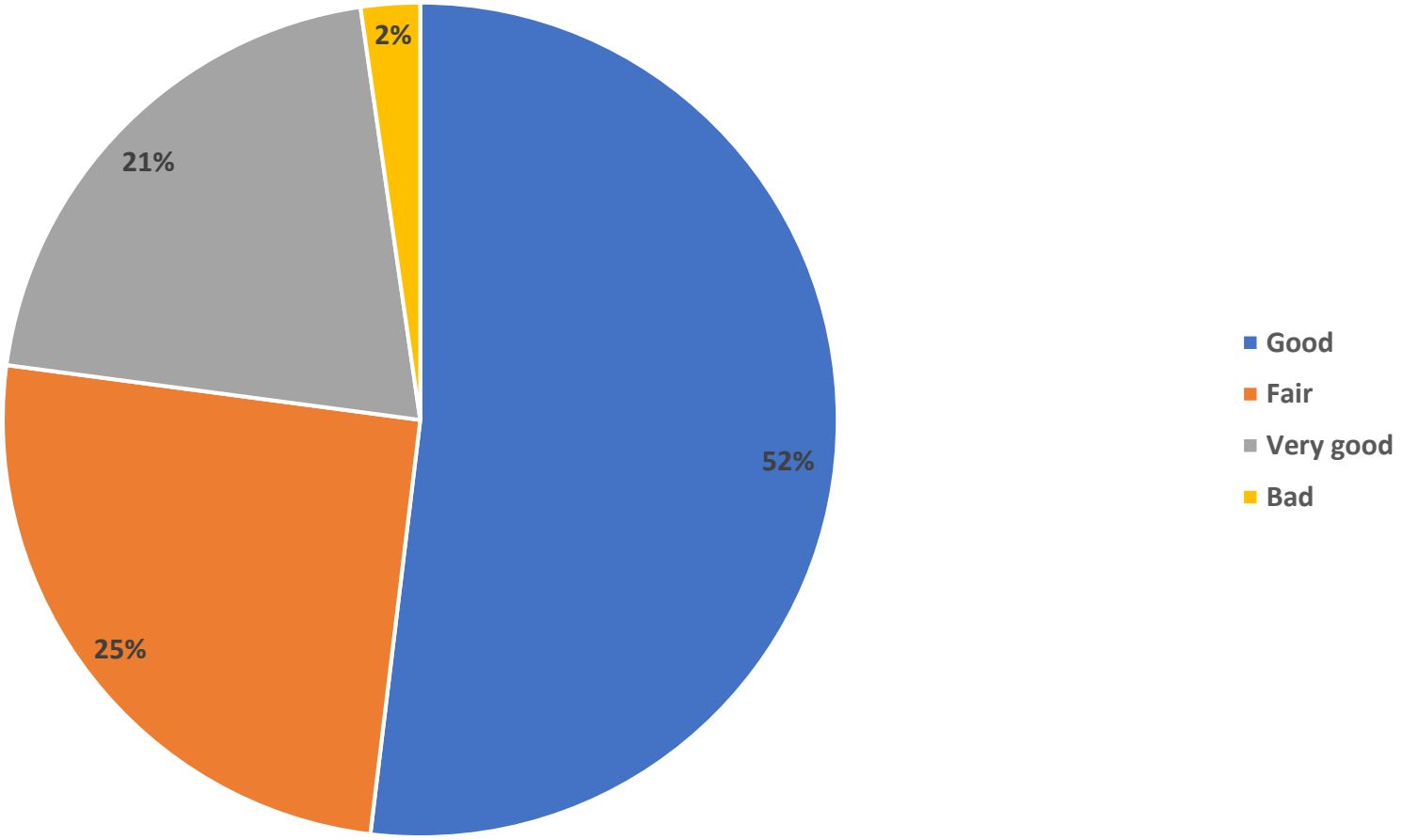
11. Your ability to receive information on job offers



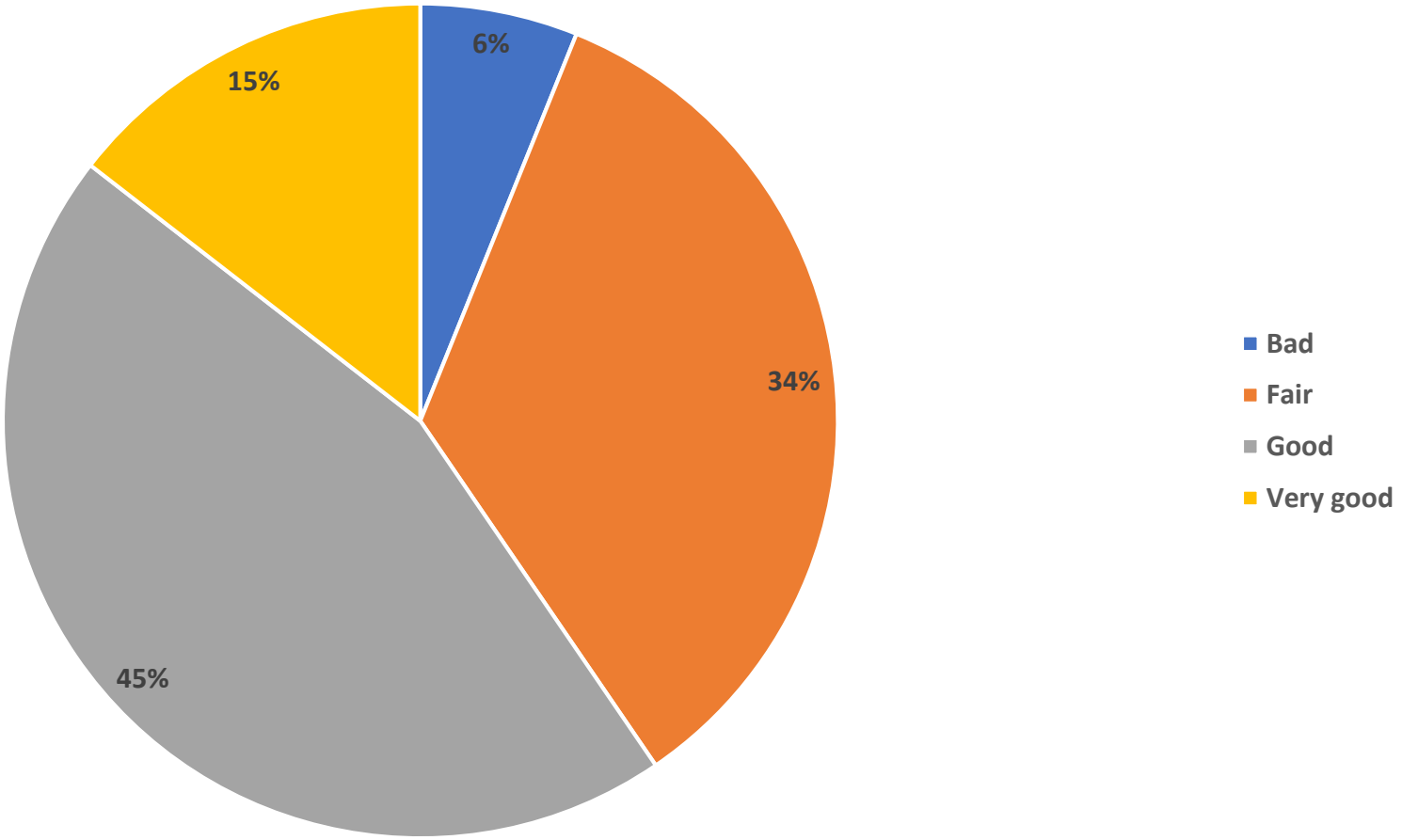
11. Extracurricular activities such as sport, culture



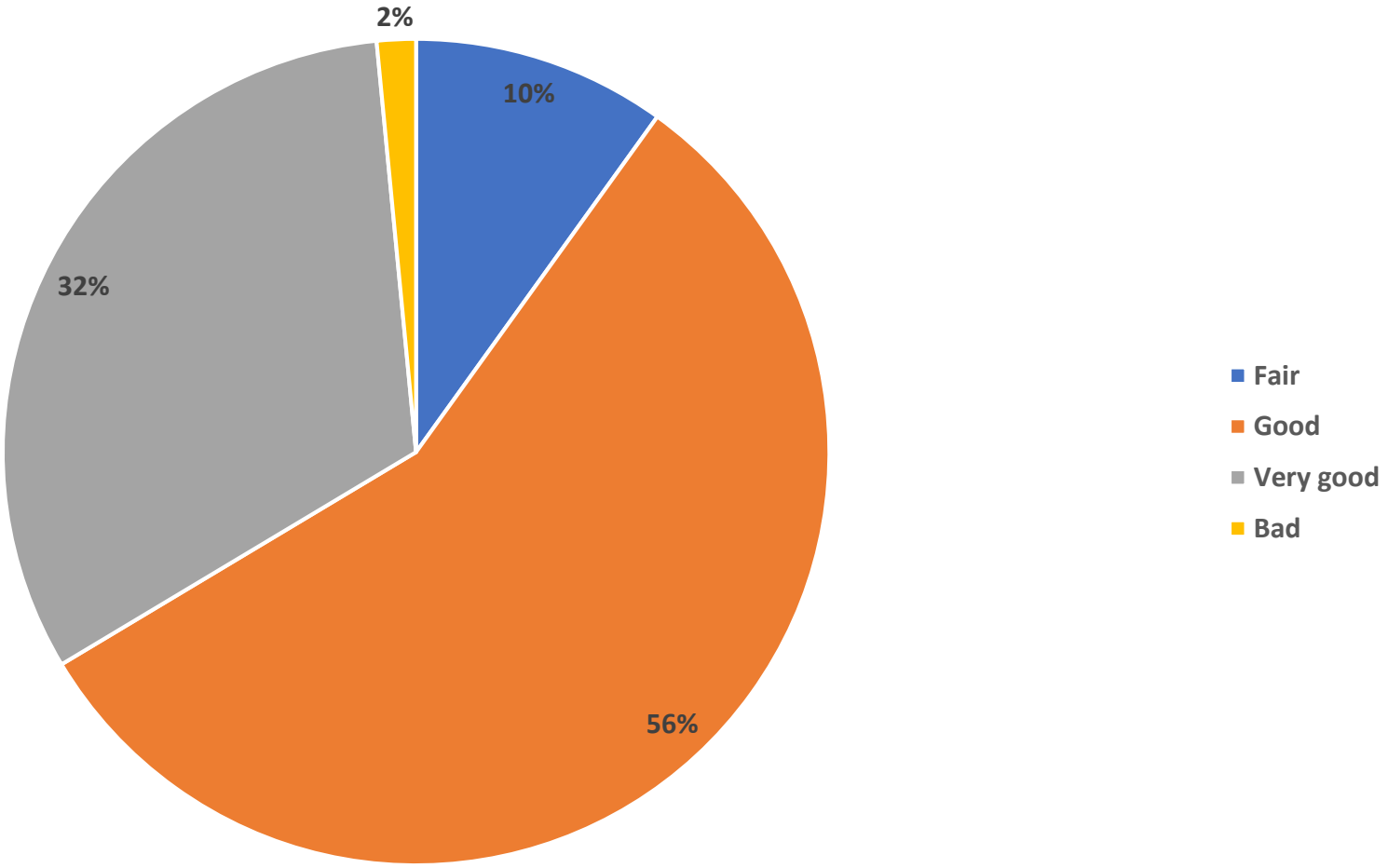
12. Equipment quality for sport activities



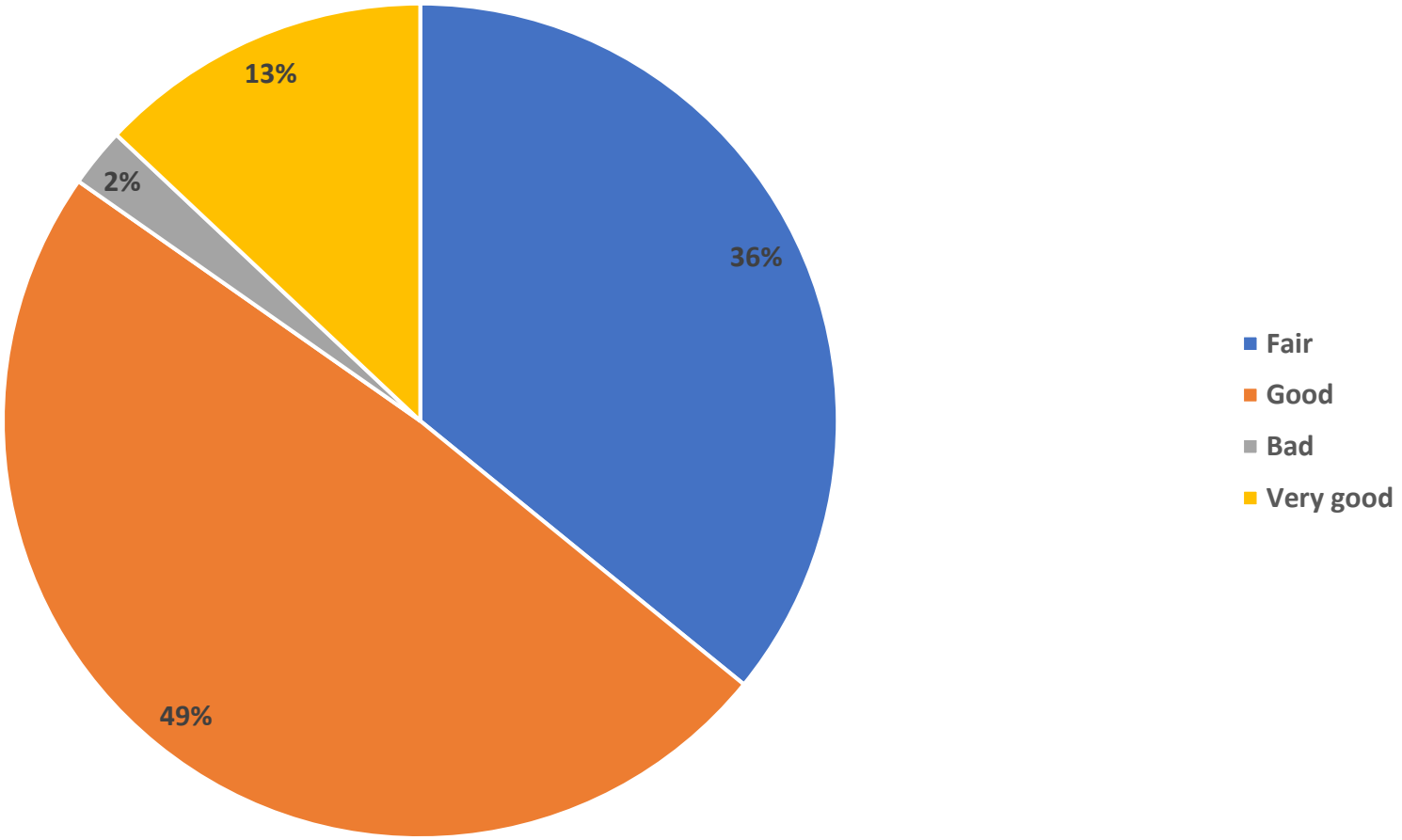
13. Service quality of the staffs at the Medical Center

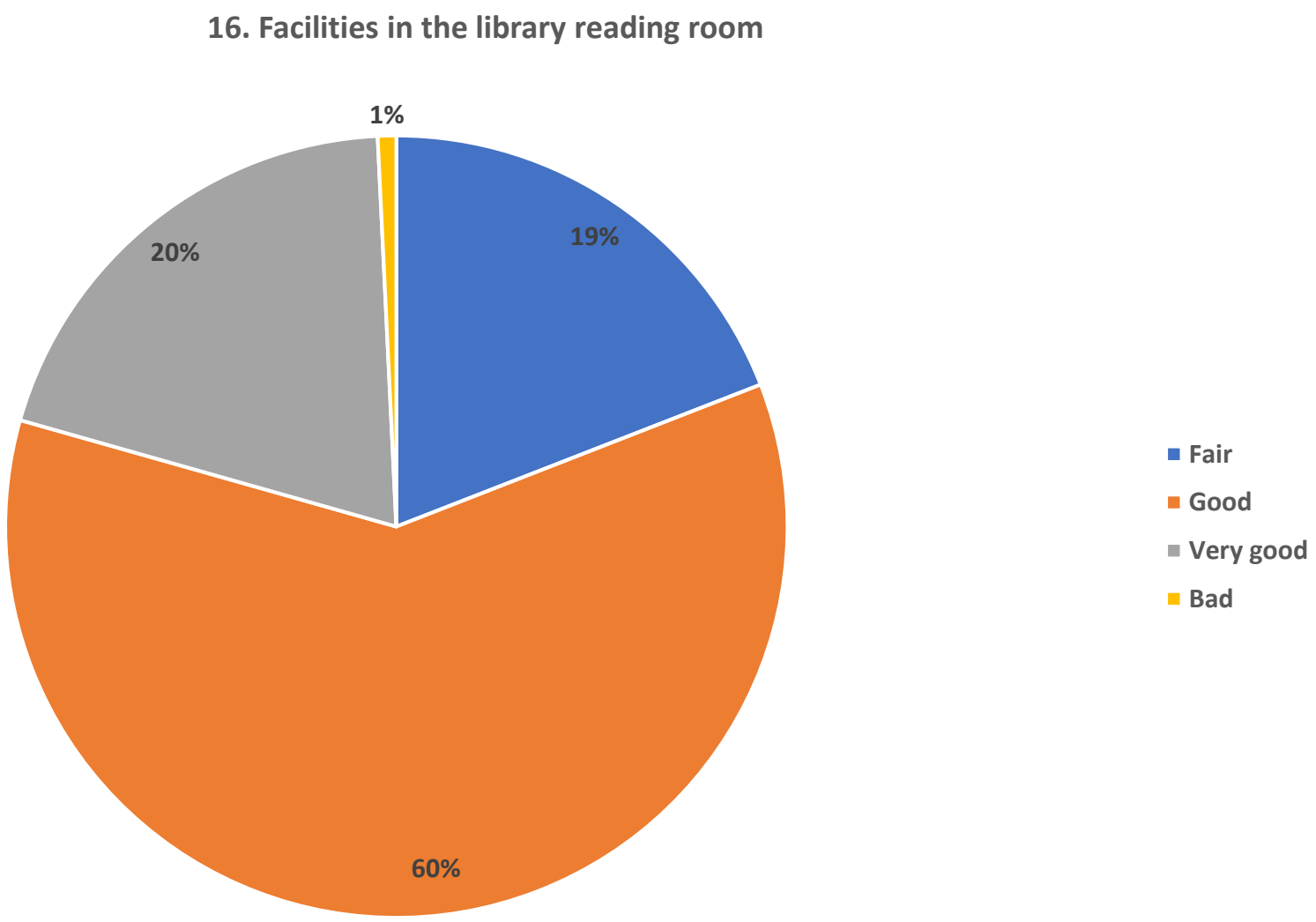


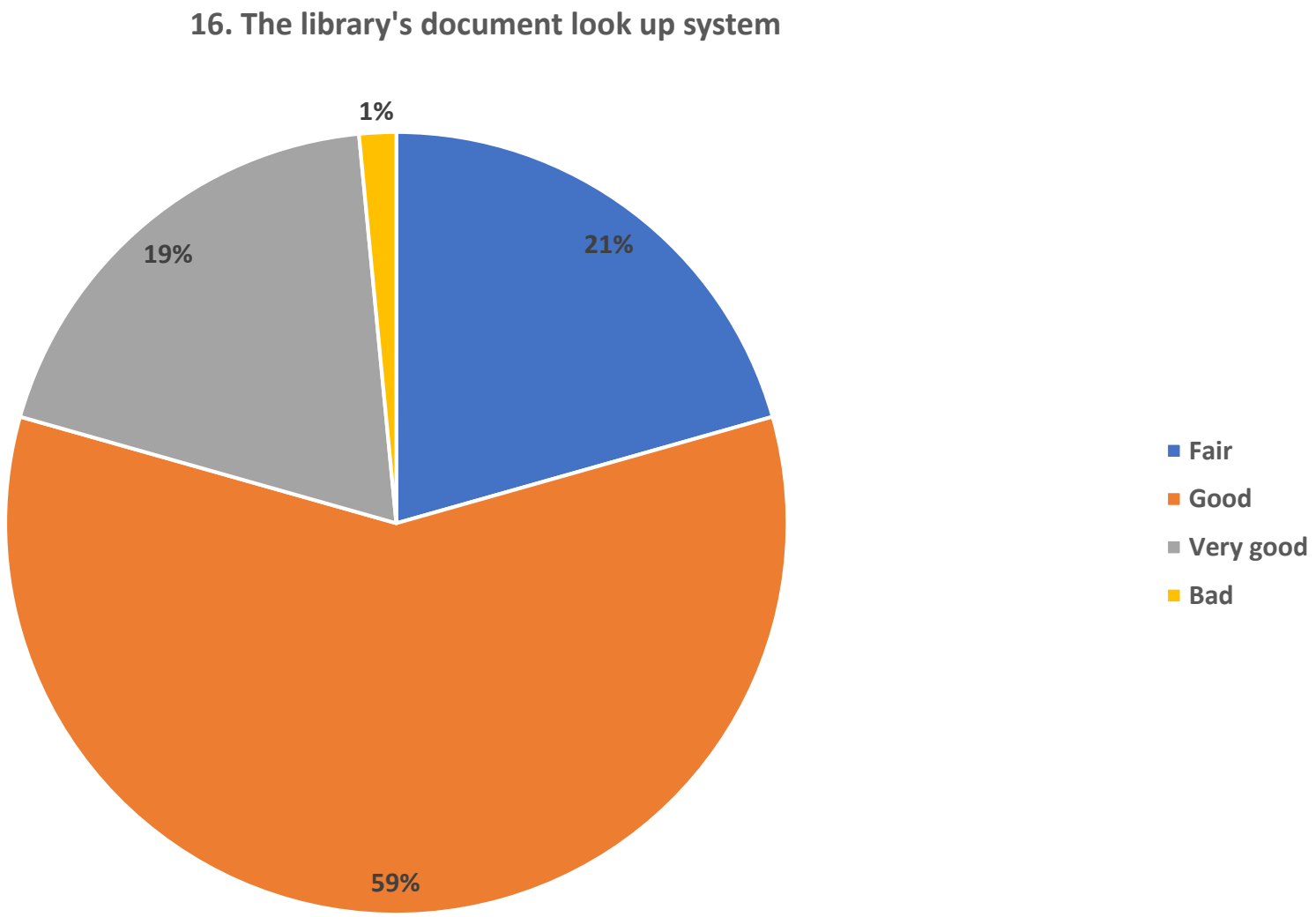
14. Service quality of the Support Staffs at the Office of SEE



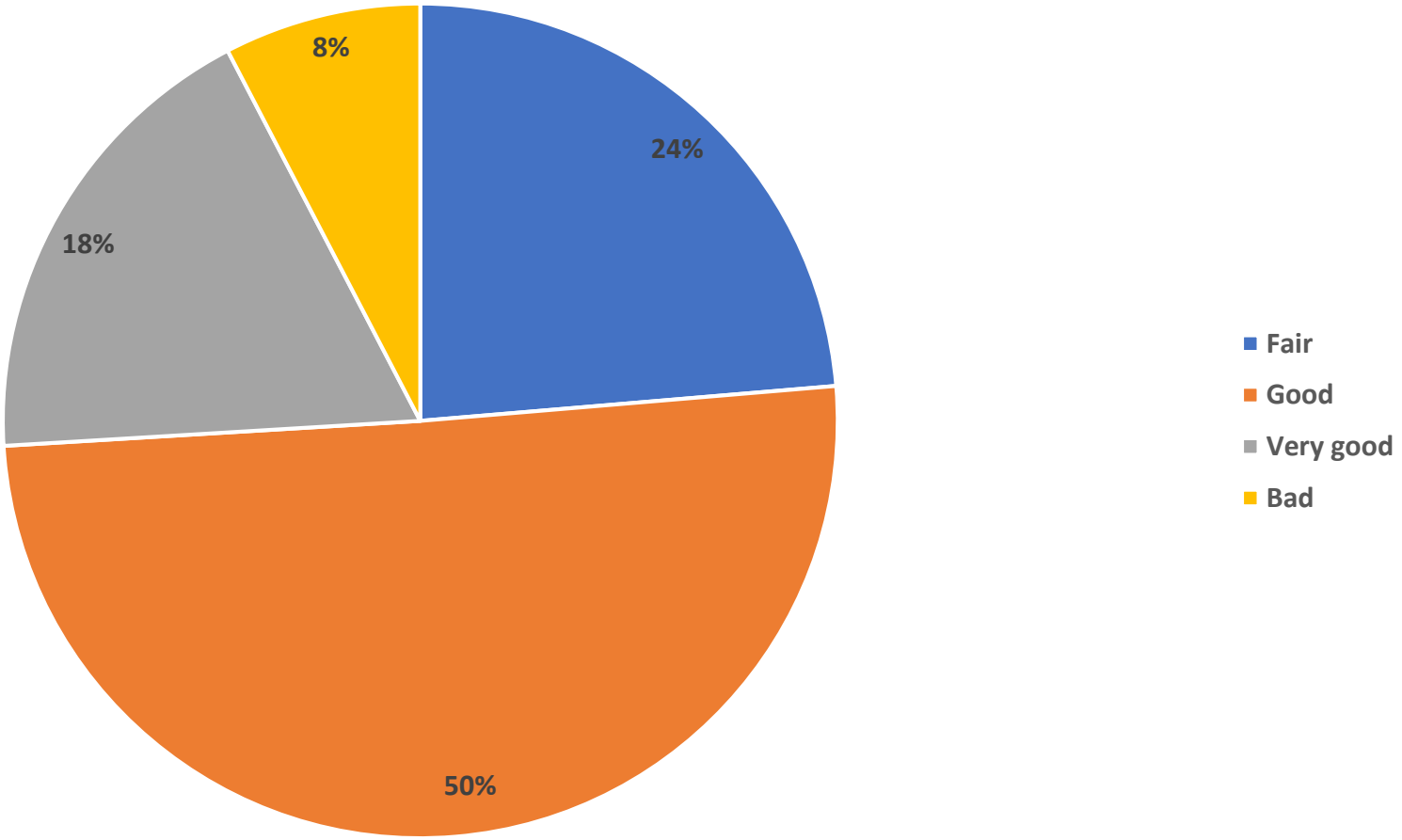
15. Service quality of support staff at the dormitory



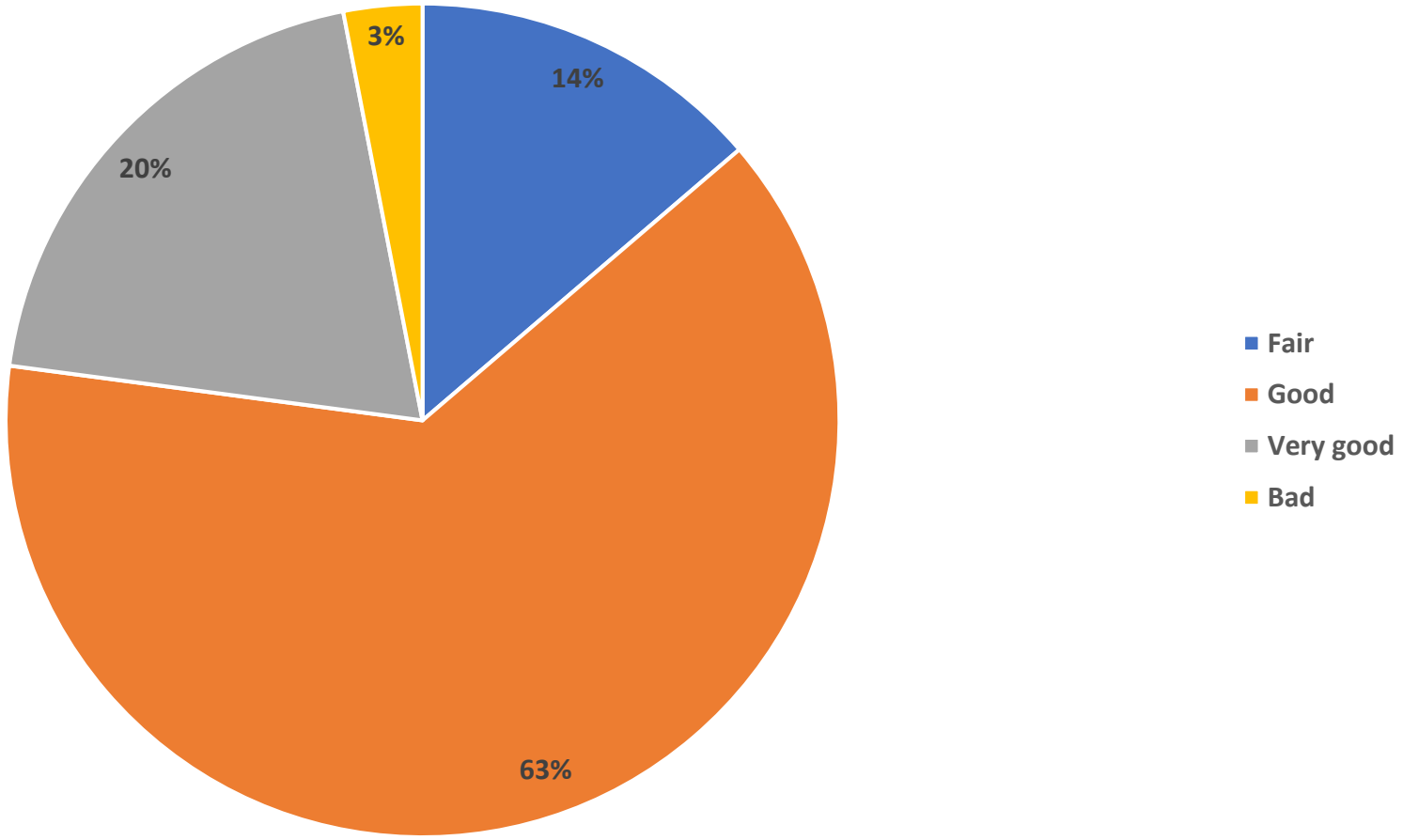

16. Facilities in the library reading room
1%
19%
20%
60%
Fair
Good
Very good
Bad

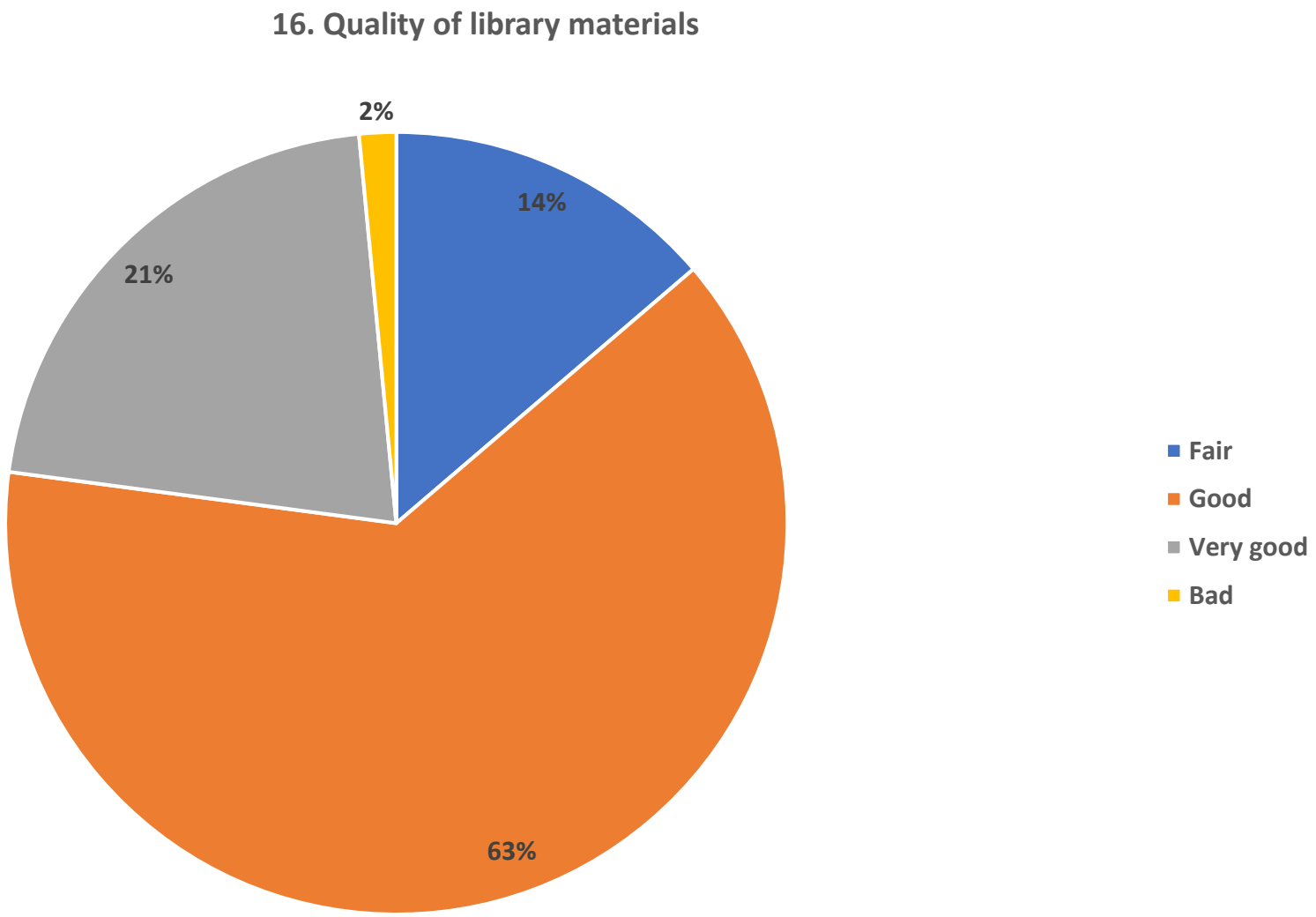

16. The library's document look up system
1%
21%
19%
59%
Fair
Good
Very good
Bad

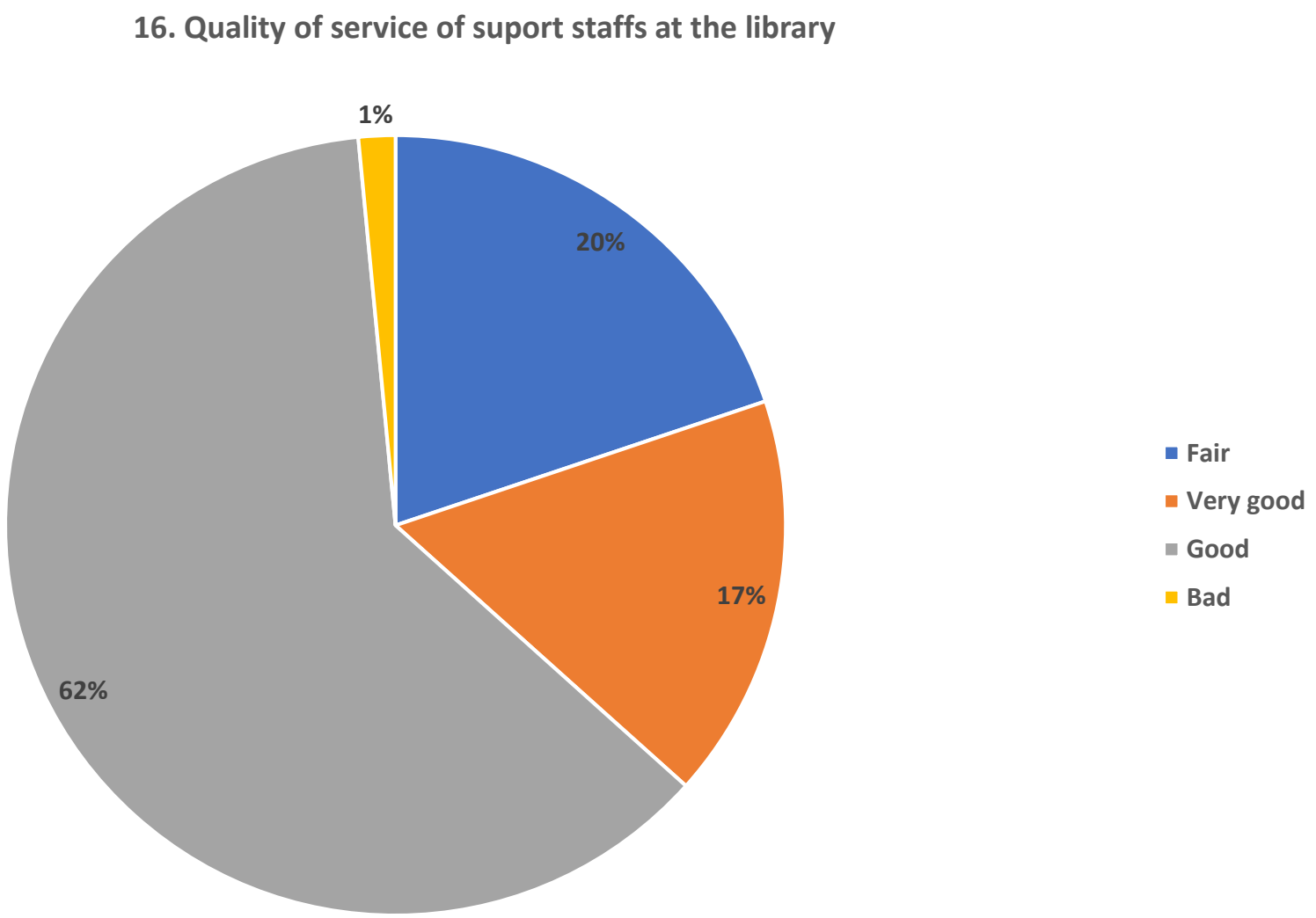
16. The Internet service quality in the library



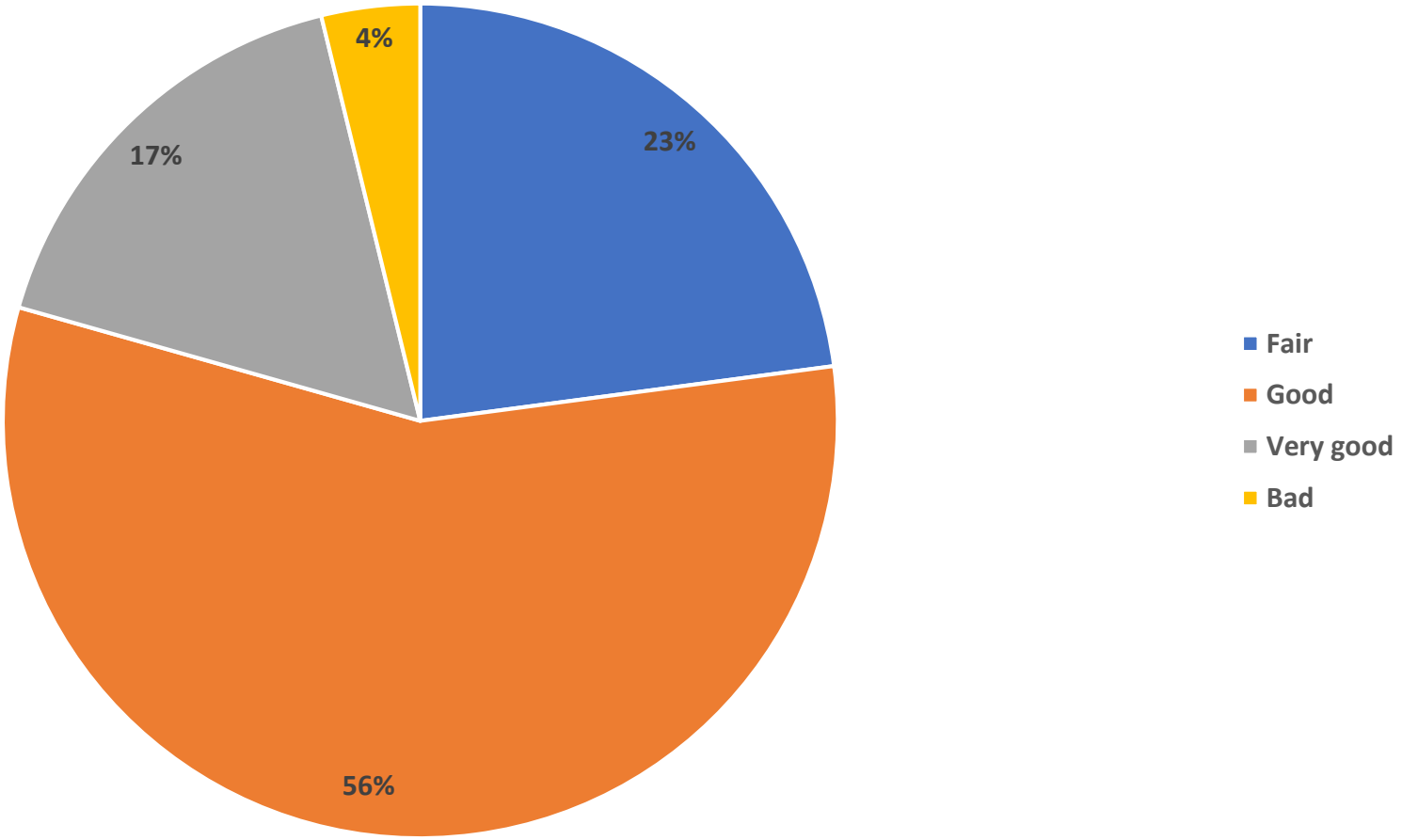
16. Number/adequacy of textbooks, lecturer notes and references in the library



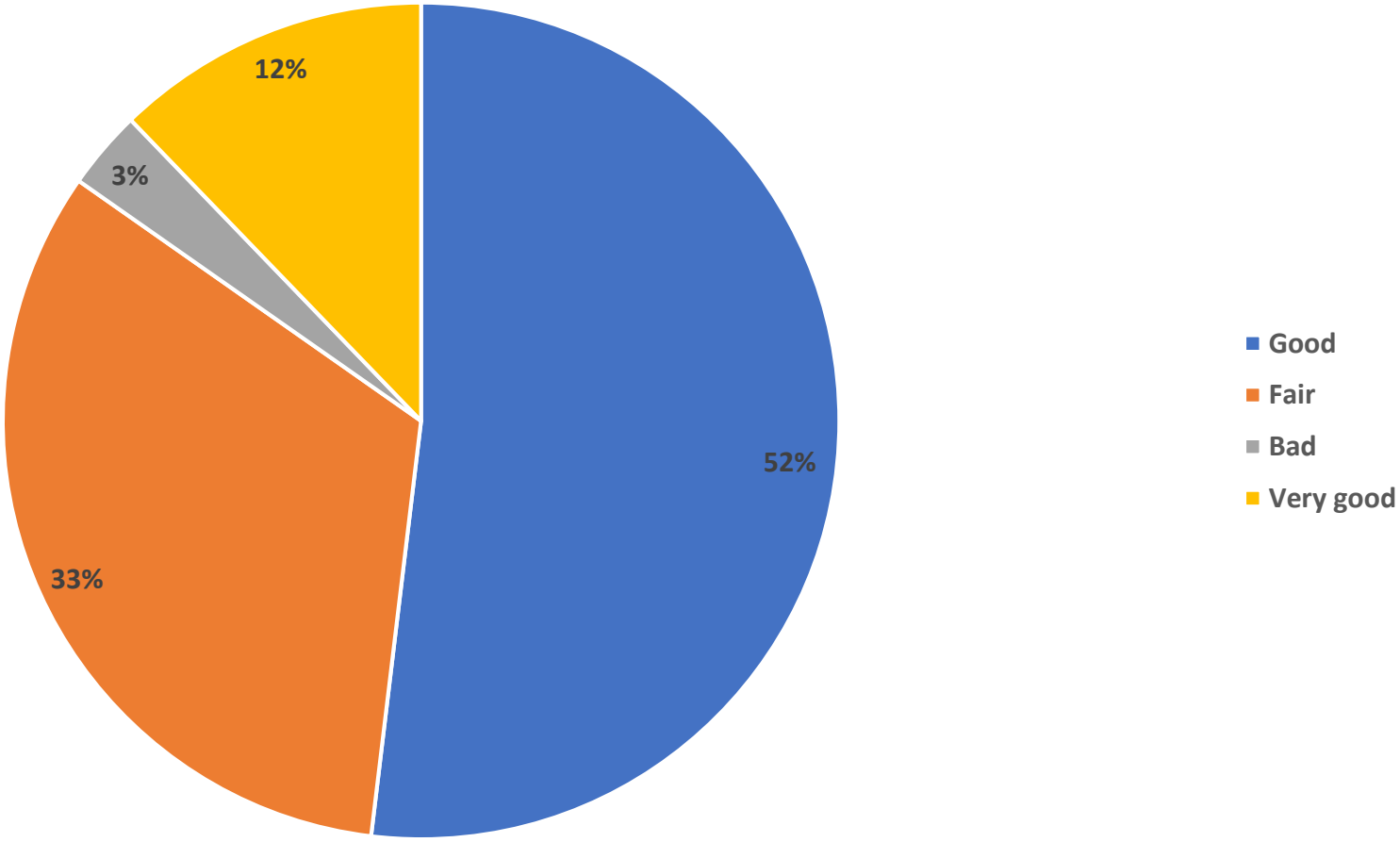

16. Quality of library materials
2%
14%
21%
63%
Fair
Good
Very good
Bad


16. Quality of service of suport staffs at the library
1%
20%
17%
62%
Fair
Very good
Good
Bad

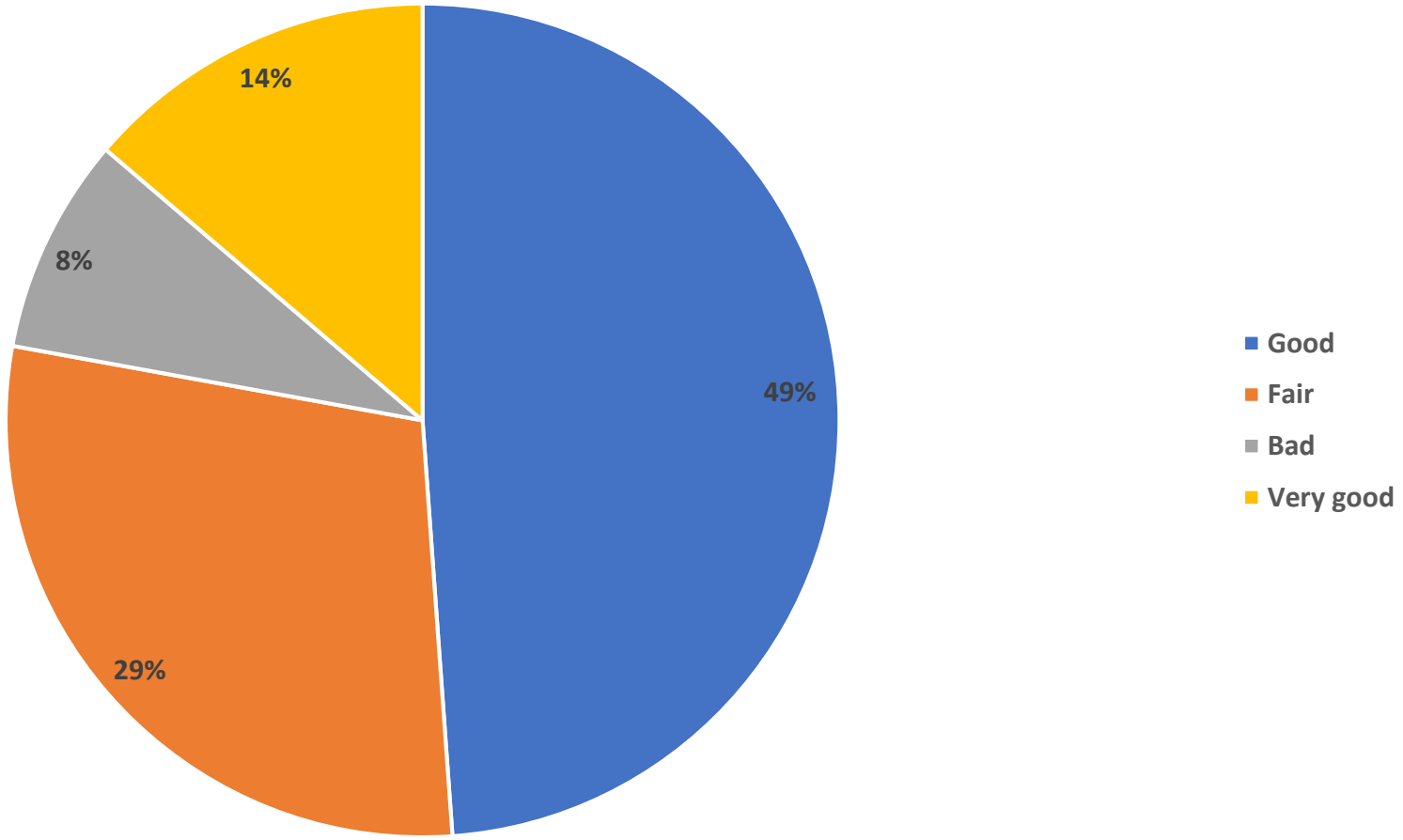
16. How efficient is your use of library resources



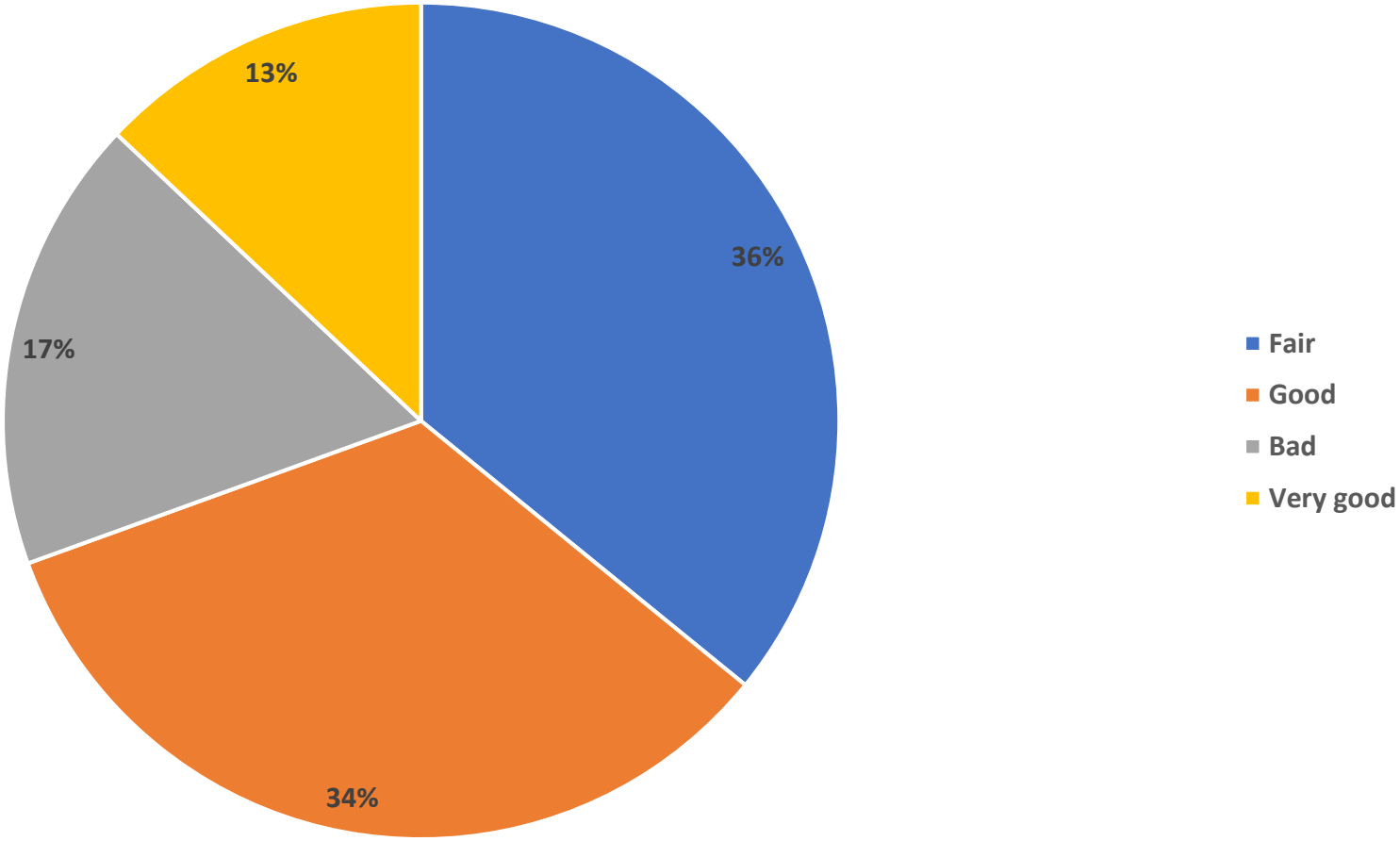
17. The study environment encourage students in studying



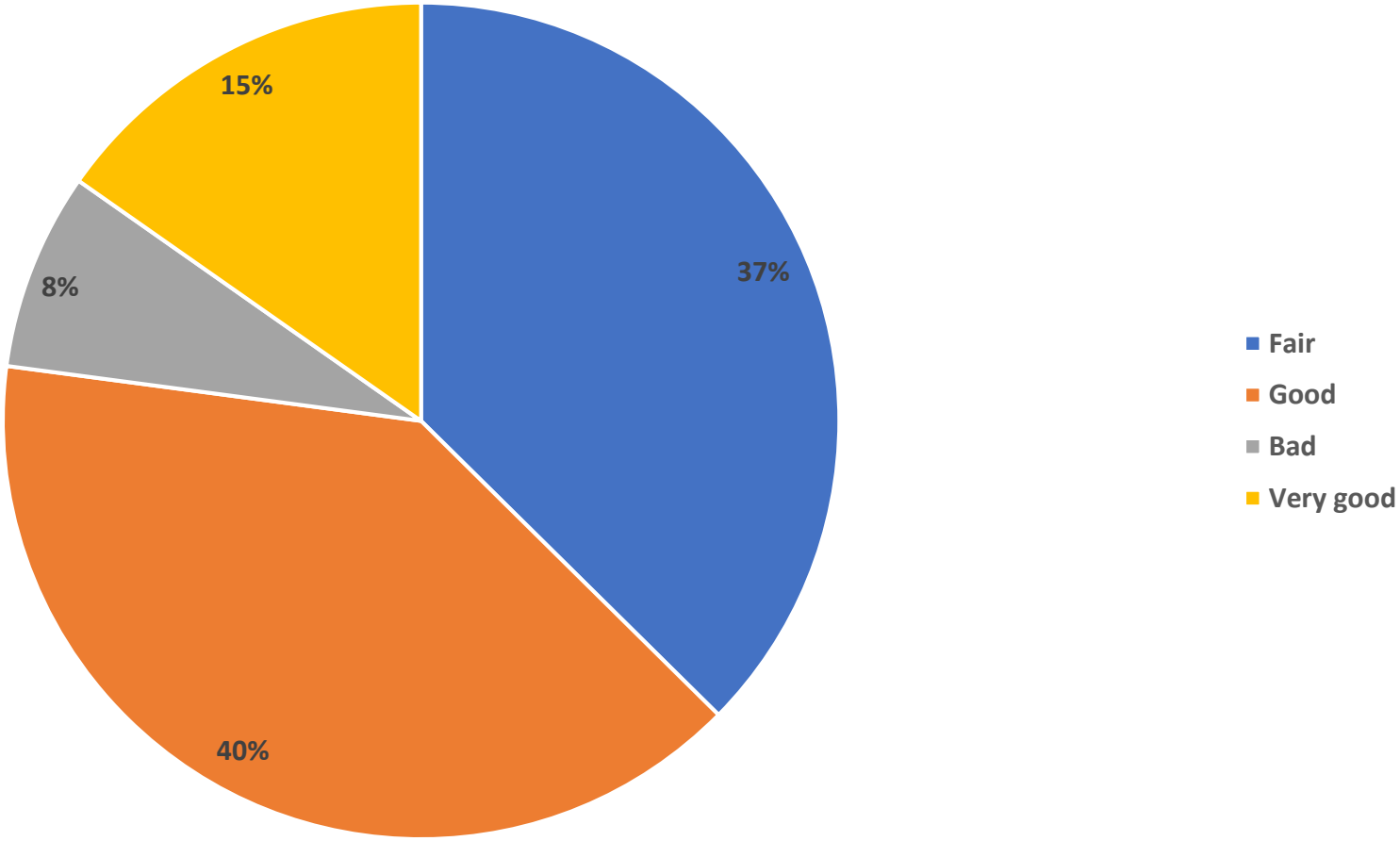
17. The study environment encourage student in teamwork skill



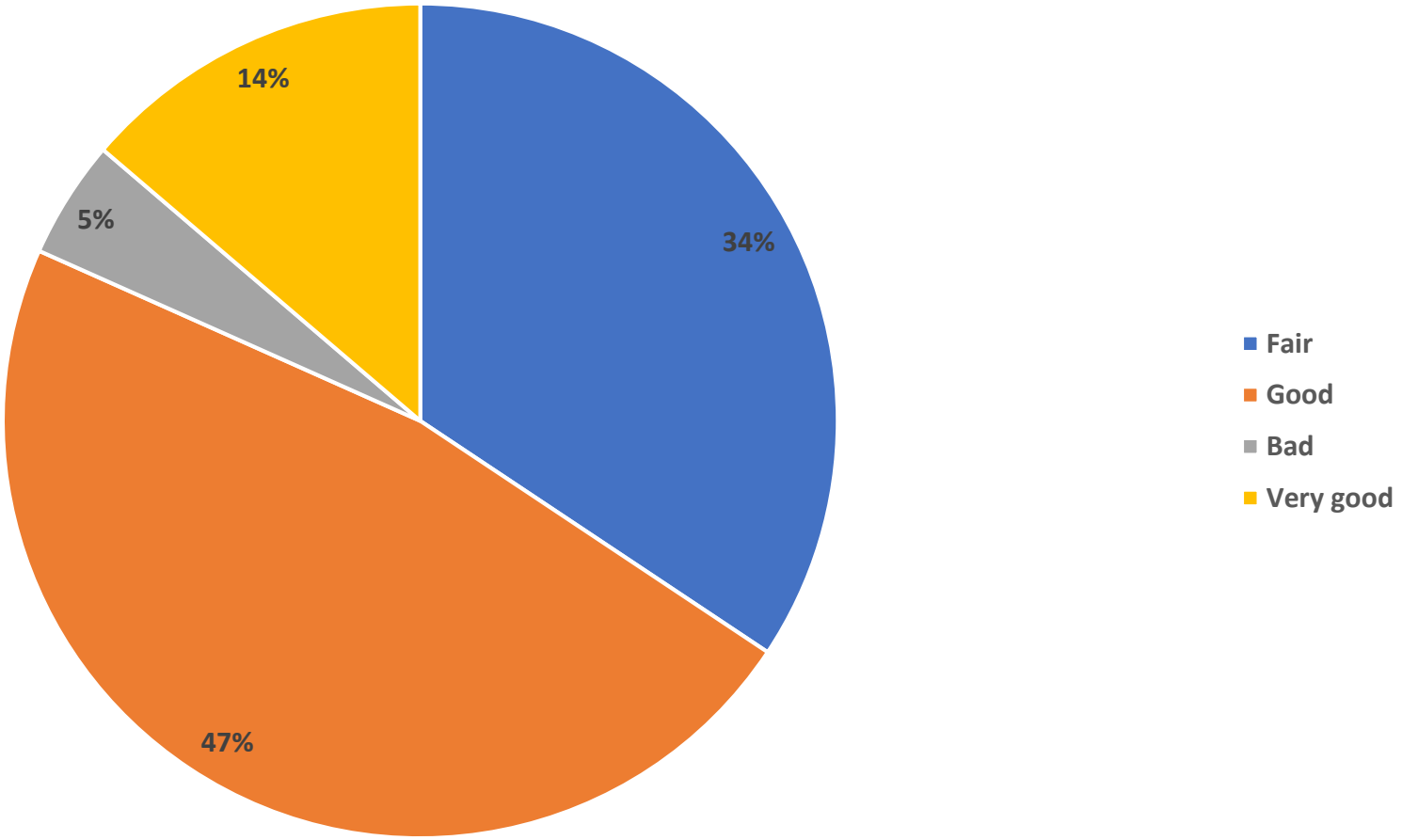
17. The study environment assisst students in improving English skill

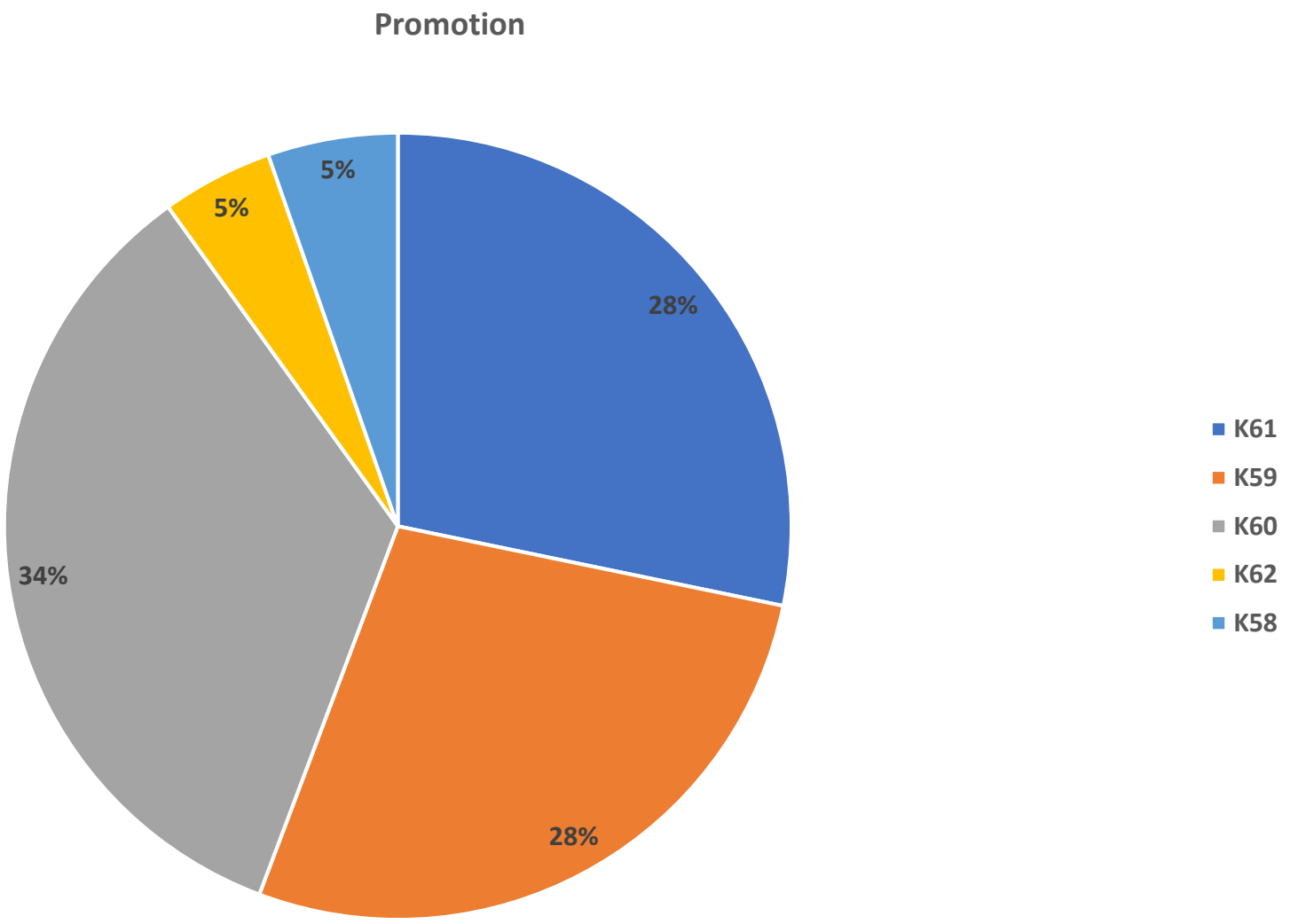


17. The study environment boost your confidence level



17. General assessment of your study environment




Promotion
28%
28%
34%
5%
5%
K61
K59
K60
K62
K58

BRIEF DESCRIPTION OF THE SURVEY

(Industry feedback on the Expected Learning outcomes for the new training programs)

1. Objectives

The objectives of this survey is to take feedback of industry partners who are also prospective employers on the revised Program Learning Outcomes. This survey serves as input for the Curriculum Design team to determine the society needs regarding the students knowledge and skills.

This survey is performed by the SEE.

2. Respondents

Industry partner from various sectors were invited to the workshop, organized on 13 july 2017. 32 companies and organization answered.

3. Methodology

This is a paper based survey. It was later digitalized for analysis.

4. Key findings

- All respondents agree with the new majors in EE that are introduced by SEE, namely "power systems", "renewable energy", and "industrial and commercial power systems"
- Most respondents have high demand on the learner skills. On the Bloom's taxonomy scale, most respondents require that students have ability to synthesize in all aspect (disciplinary knowledge, personal skills, interpersonal skills, conceiving-designing-implementing in the enterprise-social-environmental context).
- Also, during the discussion (see also Evidence EE 10.02.02 in the SAR), most respondents are more used to the Engineer degree of the 4+1 program. SEE and HUST need to communicate more about the new training model which focuses on the Bachelor degree and the Master degree.

QUESTIONAIRE SURVEY ON OUTCOME STANDARDS

To whom it may concerned,

Your survey feedback will contribute to building up the training program of the School of Electrical Engineering, with the aim of meeting your requests when using the human resources trained by our School.

Survey results will be presented in the form of statistical data. We would like to guarantee the information you provide will be completely confidential and used for the right purpose mentioned above.

Thank you for your cooperation.

*Obligatory

A. PERSONAL INFORMATION

5. Full Name
6. Phone number
7. Email
8. Enterprise/Organization
9. Are you an alumnus of Hanoi University of Science and Technology?

Only tick one answer

Yes
No

10. Number of years you are on working?

Only tick one answer

0-5 years
5-10 years
10-15 years
More than 15 years

11. How many Alumni of School of Electrical Engineering are working in your business?

Only tick one answer

Less than 5 people
From 5-10 people
From 10-20 people
More than 20 people

B. COMMENTS ON THE AREAS OF TRAINING PROGRAM

We intend to open different areas of training program according to the following directions:

11. Your opinion is on which area of training:

Only tick one answer

Electrical Engineering – refer to question 13
Control and Automation - refer to question 15

Orientations of the area of Electrical Engineering

Please read the description of each orientation before you continue the survey.

ELECTRIC POWER SYSTEM

After graduating, the learner has a solid foundation in basic math and science and a competent level of foreign language to participate in international integration, have in-depth knowledge of production and transmission systems, power distribution in order to be able to plan, design, and operate power transmission systems and power plants and substations in the most reliable, safe, quality and economical method.

Intensive blocks of knowledge:
• Power transmission grid
• The electric market
• Power plants and substations
• Protect and control electric systems
• Planning power source and grid
• Operate the power system
• Managing power demand
• Distributed power sources connected to the power transmission system

ELECTRICAL AND ELECTRONICS EQUIPMENT

After graduating, the learner will have

- Firm knowledge base to adapt well to different jobs in the field of electrical engineering, such as: designing, manufacturing, operating, maintaining, consulting and installing industrial and civil electrical equipment, power supply, industrial and civil lighting.
- Skills of knowledge discovery, problem solving, systematic thinking and personal and professional qualities career
- Social communication skills needed to work effectively in a multidisciplinary team and in an international environment
- Capacity to design, build, manufacture systems / products / technical solutions in the field of research, manufacture and use of electrical equipment in the economic, social and political context

Intensive blocks of knowledge
• Implementation of calculating and designing electrical equipment

• Implementation of calculating and designing control devices
• Industrial and civil lighting engineering
• Industrial maintenance

INDUSTRIAL AND CIVIL ELECTRIC SYSTEMS

After graduating, the learner has a solid foundation in basic math and science and a competent level of foreign language to participate in international integration, have in-depth knowledge of medium-voltage and low-voltage equipment and systems in order to be able to design, manage and operate industrial and civil power supply systems in the most reliable, safe, quality and economical method.

Intensive blocks of knowledge
• Power distribution grid
• Electric safety
• Power reliability and quality
• Managing load and power demands
• Distributed power sources
• Industrial power supply systems
• Power supply systems for buildings

NEW AND RENEWABLE ENERGY

After graduating, the learner has a solid foundation in basic math and science and a competent level of foreign language to participate in international integration, have in-depth knowledge of renewable energy sources in order to be able to design, manage and operate renewable energy sources effectively, reliably and economically.

Intensive blocks of knowledge
• Wind power
• Solar power
• Biomass and geothermal power
• Energy storage and modification equipment
• Integrating new and renewable energy sources in transmission and distribution networks
• Energy policies
• Financial analysis of renewable energy projects

13. Practical level of orientations of the area of Electrical Engineering

Only tick one answer for each row

Very practical
Practical
Not practical

Electric Power System
Electrical and Electronics Equipment
Industrial and Civil Electric System

New and Renewable Energy

14. Other comments on orientations of the area of Electrical Engineering

Orientations of the area of Control and Automation

At the bachelor's degree, students in the area of Control and Automation are able to operate or maintain industrial automation systems. Up to engineer and master level, students can choose intensive or multidisciplinary area as follows:

Please read the description of each orientation before you continue the survey.

INDUSTRIAL AUTOMATION

After graduating, learners are able to apply scientific and managing principles in forming and building an Automation system that meets the aggregate requirements of a system in industry such as optimizing operability, combining human resources with investment in modern machinery and equipment. Based on scientific thinking, learners are able to design systems that meet the requirements for control, energy saving, balance between goals of reducing equipment investment costs and system operating costs. Learners are capable of consulting, supervising and owning projects in building an automation system

Intensive blocks of knowledge:
- Integrate automation system
- Electric drive control
- Power electronics
- Robot technology
- Digital control system
- Simulation of production systems

AUTOMATION OF ELETRIC POWER SYSTEM

After graduating from school, learners are able to apply scientific principles, management principles in formulating and building automation systems that meet the general requirements of a system such as optimizing operability, combining human resources with investment in modern machinery, technology and saving energy.

Intensive blocks of knowledge:
- Integrate automation system
- Electric power system (grid, protection)
- Electric drive control

• Power electronics
• Digital control system
• System simulation

INSTRUMENTATION AND INDUSTRIAL INFORMATICS

After graduating, the learner has a solid foundation in basic math and science and a competent level of foreign language to participate in international integration, have in-depth knowledge of sensors, measurement techniques in order to be able to design, install, evaluate, operate and maintain industrial measurement equipment and systems. Learners are capable of participating in activities related to standards and calibration. In addition, students can participate in the simulation process, study the characteristics of new types of sensor.

Intensive blocks of knowledge:
• Measuring and designing measuring equipment
• Signal and algorithm processing
• Sensor
• Micro system
• Measuring device in biomedical engineering
• Environment measuring equipment
• Electronic measuring device
• Standards and national measurement assurance systems

INDUSTRIAL COMPUTING

After graduating, the learners will have a solid foundation in basic math and science and a competent level of foreign language to participate in international integration, have in-depth knowledge of measurement, automatic control, industrial communication network, wireless sensor network, embedded system in order to be able to design, install, operate, maintain monitoring and data-collecting equipment and systems. Leaners are also capable of participating in activities related to designing software for fault diagnosis, industrial systems, and production management.

Intensive blocks of knowledge:
• Computer networks, Internet, industrial networks
• Supervisory Control And Data Acquisition (SCADA)
• Wireless sensor network
• Embedded System
• Neural networks and applications in signal processing

• Digital control system
• Production management system
• Human-Computer Interface
• IoT basic

CONTROL TECHNIQUES AND APPLICATIONS

After graduating, learners will have:

- Professional ethics, health and ability to implement independent research and team working, as well as communicate and present specialized issues.
- Ability to understand, operate, analyze and correct devices, control automation systems in a variety industrial areas, defense-security, construction, transportation, health and civil.
- Ability to design, execute, transfer automatic production lines, automatic control system in industry, including various types of process control systems, hydraulic and compressed air systems, robot as well as industrial monitoring and control systems using computers, PLCs.
- Equipped with knowledge of automatic control theory from basic to modern to be able to implement independent research, as well as being able to join groups of researching and developing high technologies that can be applied into real life.

Intensive blocks of knowledge:

- Advanced control theory
- Optimization and optimal control
- Control system design
- Digital control system
- Design of embedded control system
- Controlling electromechanical systems
- Artificial intelligence and application (AI and Applications)
- Network control system
- Computer Vision
- Motion control
- Process control
- Control renewable energy

13. Practical level of orientations of the area of Control and Automation

Only tick one answer for each row

Very practical
Practical
Not practical

Industrial Automation
Automation of Electric Power System
Instrumentation and Industrial Informatics
Industrial Computing
Control Techniques and Applications

14. Other comments on orientations of the area of Control and Automation

EVALUATE THE OUTCOME STANDARD

The assessment of the output standard is divided into 4 contents: (1) Knowledge and Ability of Making Arguments; (2) Personal Professional Quality; (3) Teamwork Skills; (4) Professional Competence

1. Knowledge and Ability of Making Arguments

17. 1.1 Ability to apply basic maths, physics, informatics knowledge to describe, calculate and simulate technical systems, processes and products related to technical applications of the area of Electrical Engineering

Only tick one answer for each row

Knowledgeable at a limited level
Knowledgeable/able to participate
Able to apply
Able to analyze
Able to summarize
Able to evaluate

Master of science
Master of engineering
Engineer
Bachelor of engineering
Bachelor of industry

18.1.2 Ability to apply knowledge of circuit, electronics, control techniques, measurement and automation to analyze technical problems, products and equipment related to applications of the area of Electrical Engineering

Only tick one answer for each row

Knowledgeable at a limited level
Knowledgeable/able to participate
Able to apply
Able to analyze

Able to summarize
Able to evaluate

Master of science
Master of engineering
Engineer
Bachelor of engineering
Bachelor of industry

19.1.3 Ability to apply knowledge of application-oriented domains, combined with possibilities using modern calculation methods and tools to participate in designing and evaluating solutions, production lines and technical products in the field of application

Only tick one answer for each row

Knowledgeable at a limited level
Knowledgeable/able to participate
Able to apply
Able to analyze
Able to summarize
Able to evaluate

Master of science
Master of engineering
Engineer
Bachelor of engineering
Bachelor of industry

2. Personal Professional Quality

20.2.1 Ability to analyze and solve technical problems

Only tick one answer for each row

Knowledgeable at a limited level
Knowledgeable/able to participate
Able to apply
Able to analyze
Able to summarize
Able to evaluate

Master of science
Master of engineering
Engineer
Bachelor of engineering
Bachelor of industry

21.2.2 Ability to design and implement experiments, research, and ability to analyze results

Only tick one answer for each row

Knowledgeable at a limited level
Knowledgeable/able to participate
Able to apply
Able to analyze
Able to summarize
Able to evaluate

Master of science
Master of engineering
Engineer
Bachelor of engineering
Bachelor of industry

22.2.3 System thinking and critical thinking

Only tick one answer for each row

Knowledgeable at a limited level
Knowledgeable/able to participate
Able to apply
Able to analyze
Able to summarize
Able to evaluate

Master of science
Master of engineering
Engineer
Bachelor of engineering
Bachelor of industry

23.2.4 Personal skills to succeed in technical practices: proactive, flexible, creative, able to explore and manage time

Only tick one answer for each row

Knowledgeable at a limited level
Knowledgeable/able to participate
Able to apply
Able to analyze
Able to summarize
Able to evaluate

Master of science
Master of engineering
Engineer
Bachelor of engineering
Bachelor of industry

24.2.5 Understanding of professional ethics, intellectual property

Only tick one answer for each row

Knowledgeable at a limited level
Knowledgeable/able to participate
Able to apply
Able to analyze
Able to summarize
Able to evaluate

Master of science
Master of engineering
Engineer
Bachelor of engineering
Bachelor of industry

25.2.6 Understanding of management, including trade regulations, society, legal framework in the area of electrical engineering

Only tick one answer for each row

Knowledgeable at a limited level
Knowledgeable/able to participate
Able to apply
Able to analyze
Able to summarize
Able to evaluate

Master of science
Master of engineering

Engineer
Bachelor of engineering
Bachelor of industry

26.2.7 Understanding contemporary issues and lifelong awareness

Only tick one answer for each row

Knowledgeable at a limited level
Knowledgeable/able to participate
Able to apply
Able to analyze
Able to summarize
Able to evaluate

Master of science
Master of engineering
Engineer
Bachelor of engineering
Bachelor of industry

3. Teamwork Skill

27.3.1 Skills of organization, leadership and teamwork, in a multidisciplinary working environment

Only tick one answer for each row

Knowledgeable at a limited level
Knowledgeable/able to participate
Able to apply
Able to analyze
Able to summarize
Able to evaluate

Master of science
Master of engineering
Engineer
Bachelor of engineering
Bachelor of industry

28.3.2 Effective communication skills in writing, presentations and discussions, using electronics and media means

Only tick one answer for each row

Knowledgeable at a limited level
Knowledgeable/able to participate
Able to apply
Able to analyze
Able to summarize
Able to evaluate

Master of science
Master of engineering
Engineer
Bachelor of engineering
Bachelor of industry

29.3.3 Skills to use English effectively at work

Only tick one answer for each row

Knowledgeable at a limited level
Knowledgeable/able to participate
Able to apply
Able to analyze
Able to summarize
Able to evaluate

Master of science
Master of engineering
Engineer
Bachelor of engineering
Bachelor of industry

4. Professional Competence

30.4.1 Capacity to identify problems and formulate ideas for technical solutions, participate in building projects that are related to economic, social and environmental factors in the globalized world

Only tick one answer for each row

Knowledgeable at a limited level
Knowledgeable/able to participate
Able to apply
Able to analyze

Able to summarize
Able to evaluate

Master of science
Master of engineering
Engineer
Bachelor of engineering
Bachelor of industry

31.4.2 The capacity to participate in designing systems, processes, products and offering technical solutions related to the area of electrical engineering

Only tick one answer for each row

Knowledgeable at a limited level
Knowledgeable/able to participate
Able to apply
Able to analyze
Able to summarize
Able to evaluate

Master of science
Master of engineering
Engineer
Bachelor of engineering
Bachelor of industry

32.4.3 Capacity to participate in implementing, manufacturing and deploying systems, products and technical solutions related to the area of electrical engineering

Only tick one answer for each row

Knowledgeable at a limited level
Knowledgeable/able to participate
Able to apply
Able to analyze
Able to summarize
Able to evaluate

Master of science
Master of engineering
Engineer

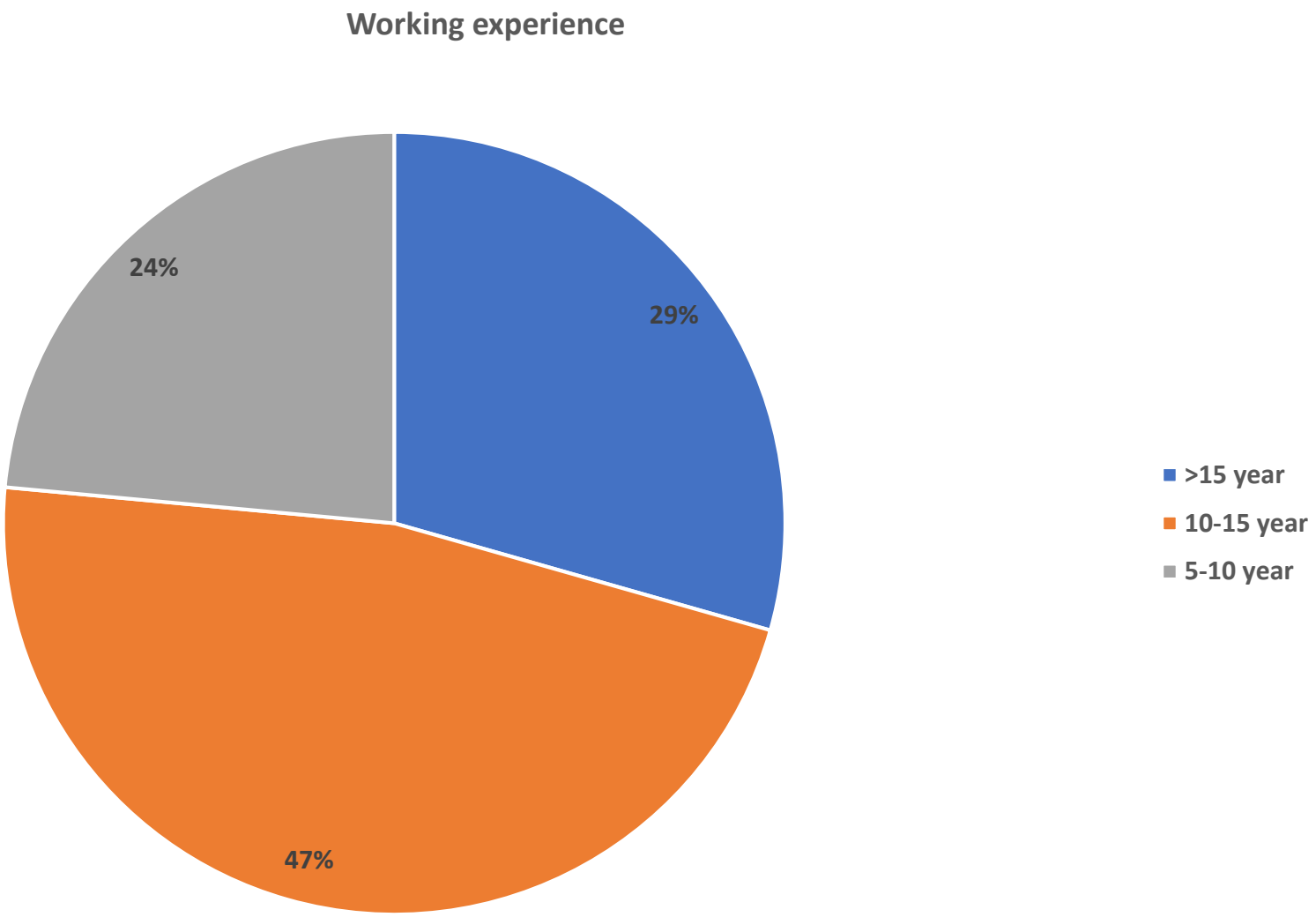
Bachelor of engineering
Bachelor of industry

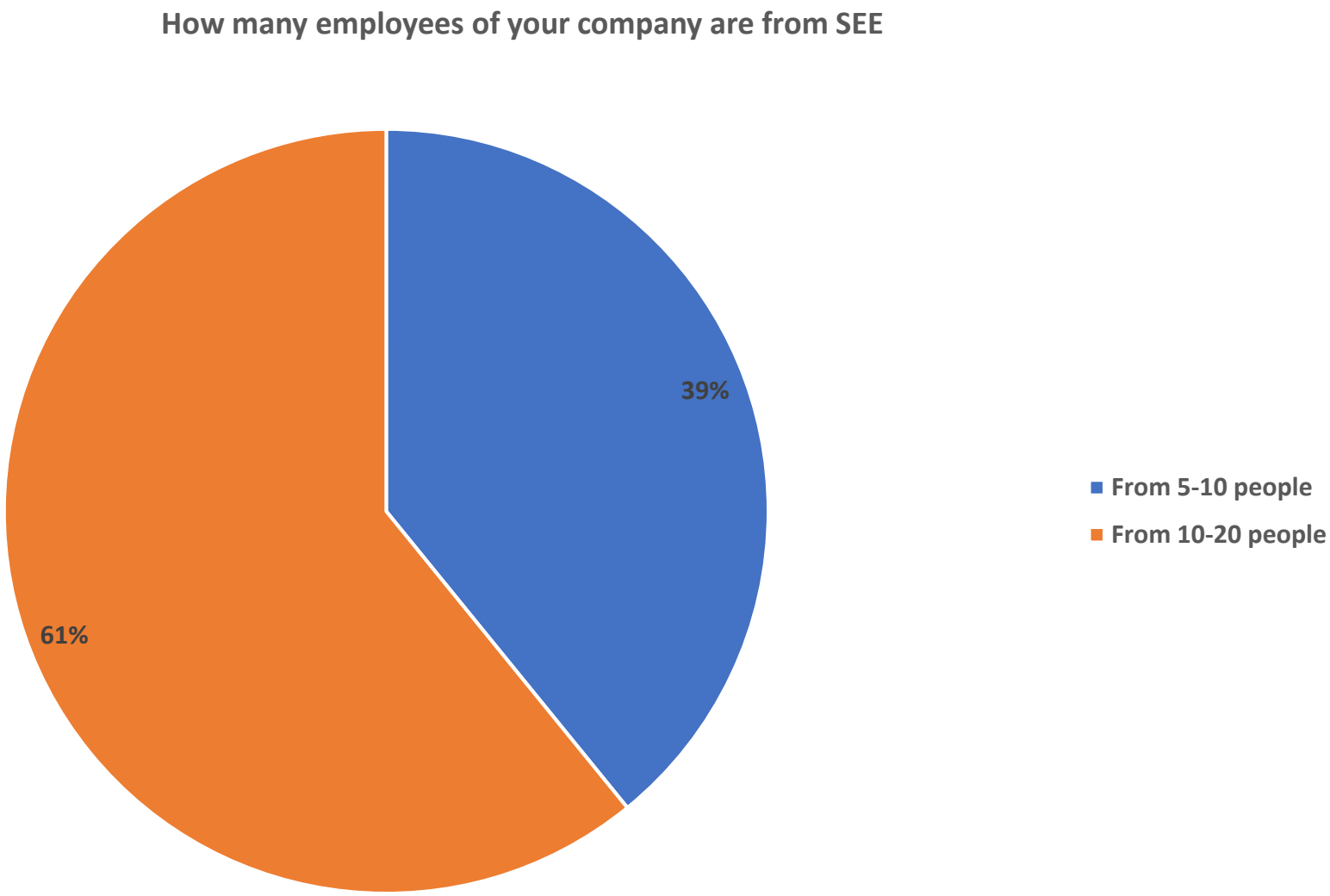
33.4.4 Ability to operate, use and exploit systems, processes and products related to application area

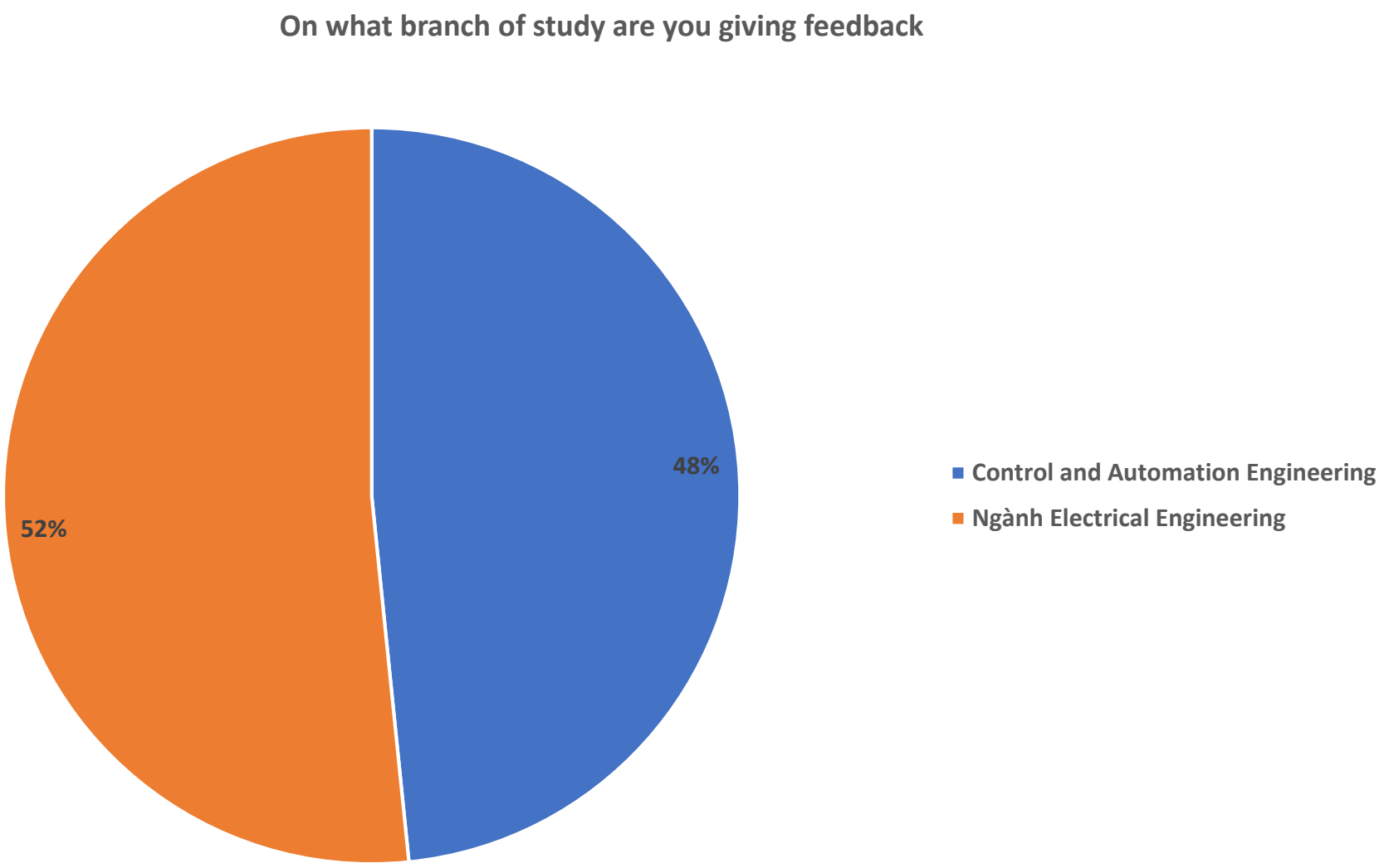
Only tick one answer for each row

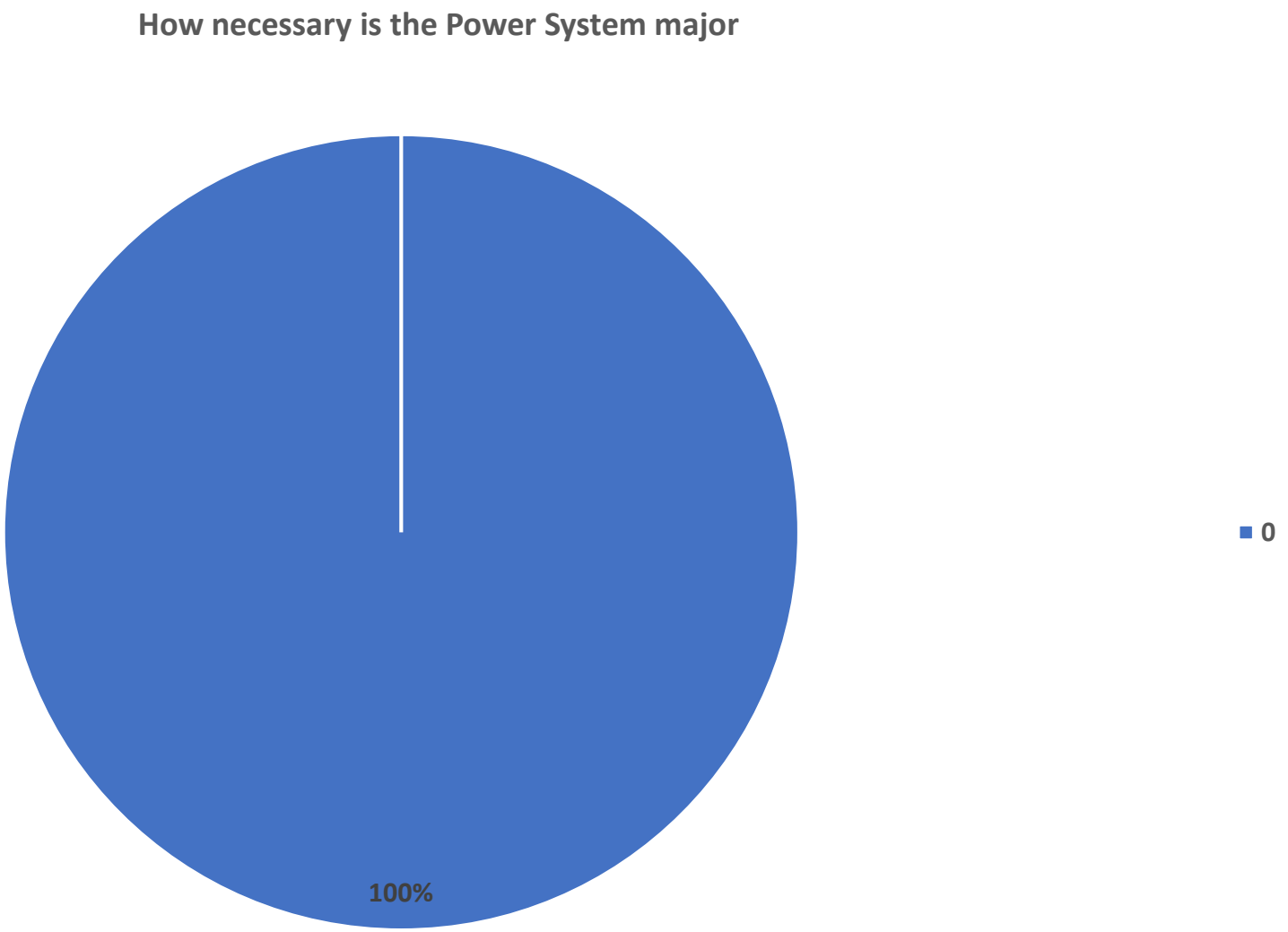
Knowledgeable at a limited level
Knowledgeable/able to participate
Able to apply
Able to analyze
Able to summarize
Able to evaluate

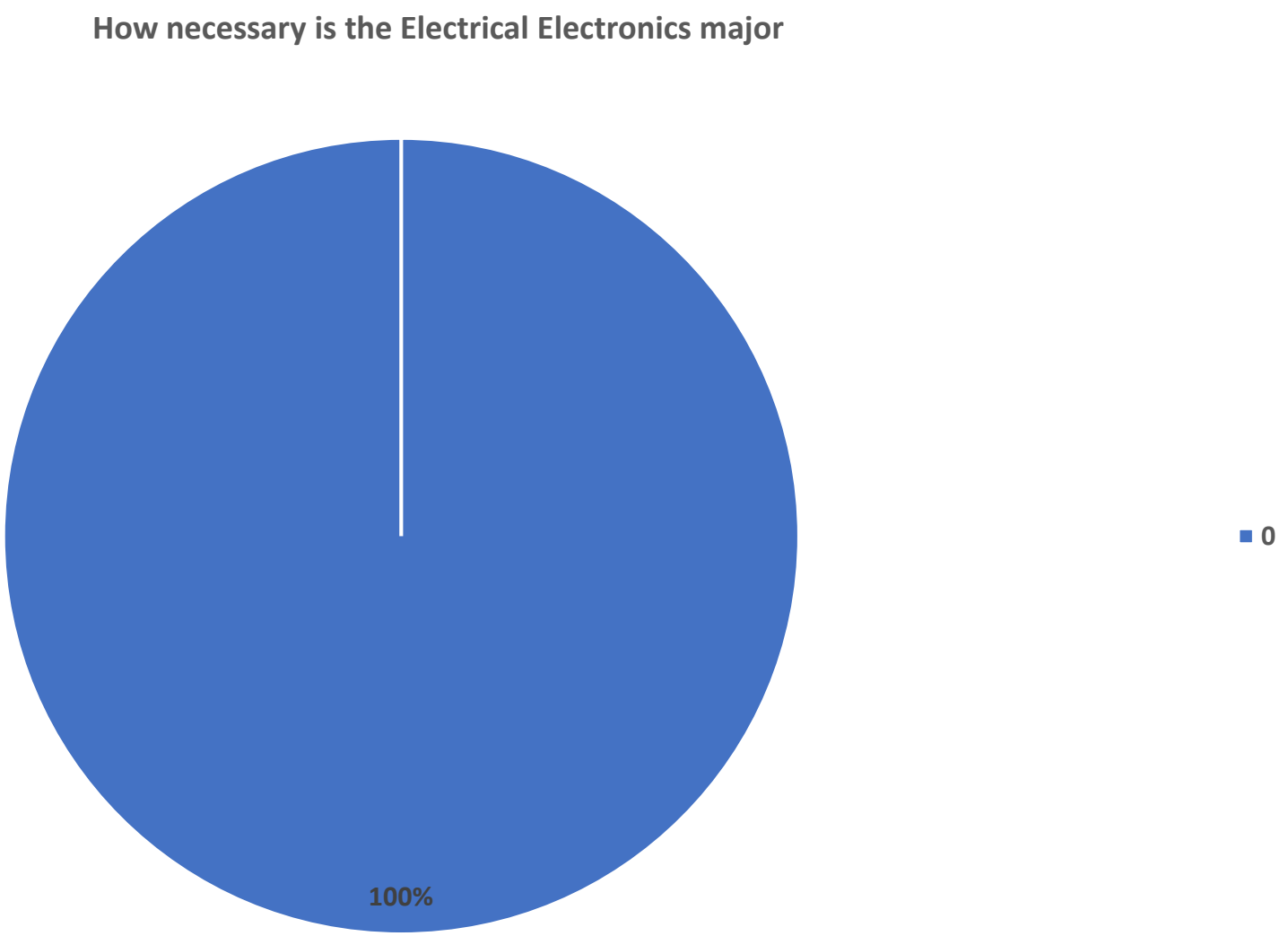
Master of science
Master of engineering
Engineer
Bachelor of engineering
Bachelor of industry

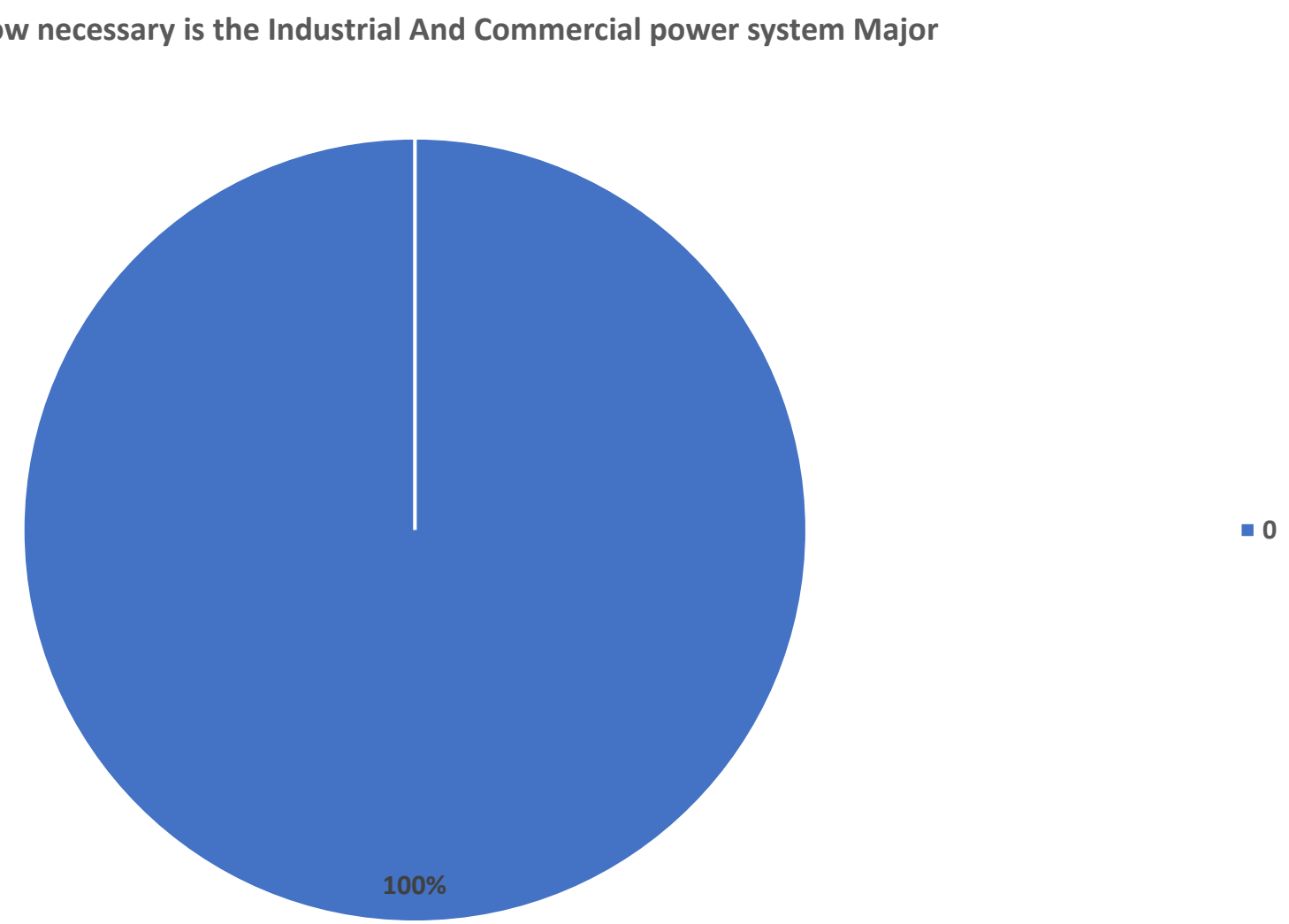

Working experience
24%
29%
47%
>15 year
10-15 year
5-10 year

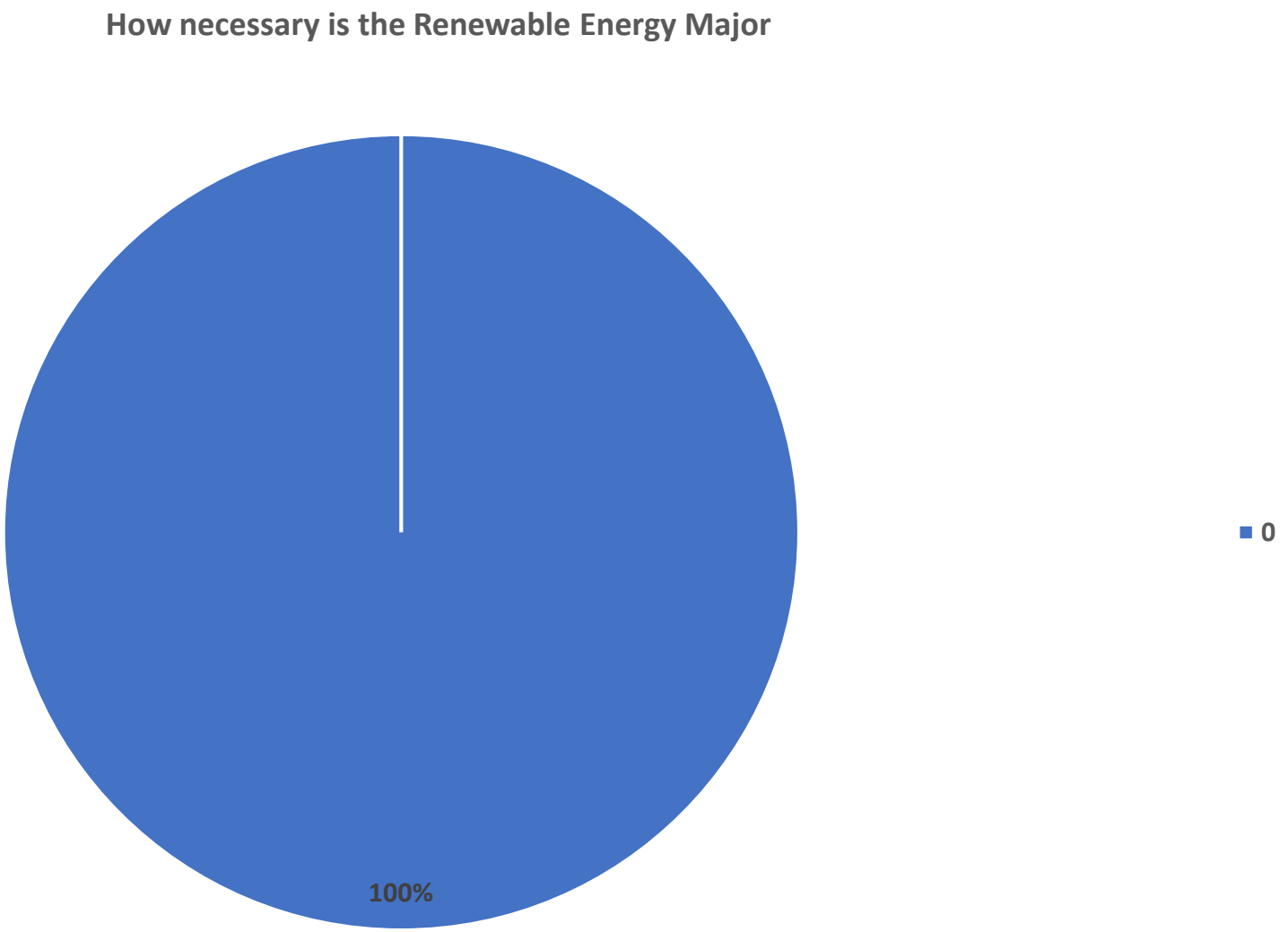

How many employees of your company are from SEE
39%
61%
From 5-10 people
From 10-20 people


On what branch of study are you giving feedback
48%
52%
Control and Automation Engineering
Ngành Electrical Engineering

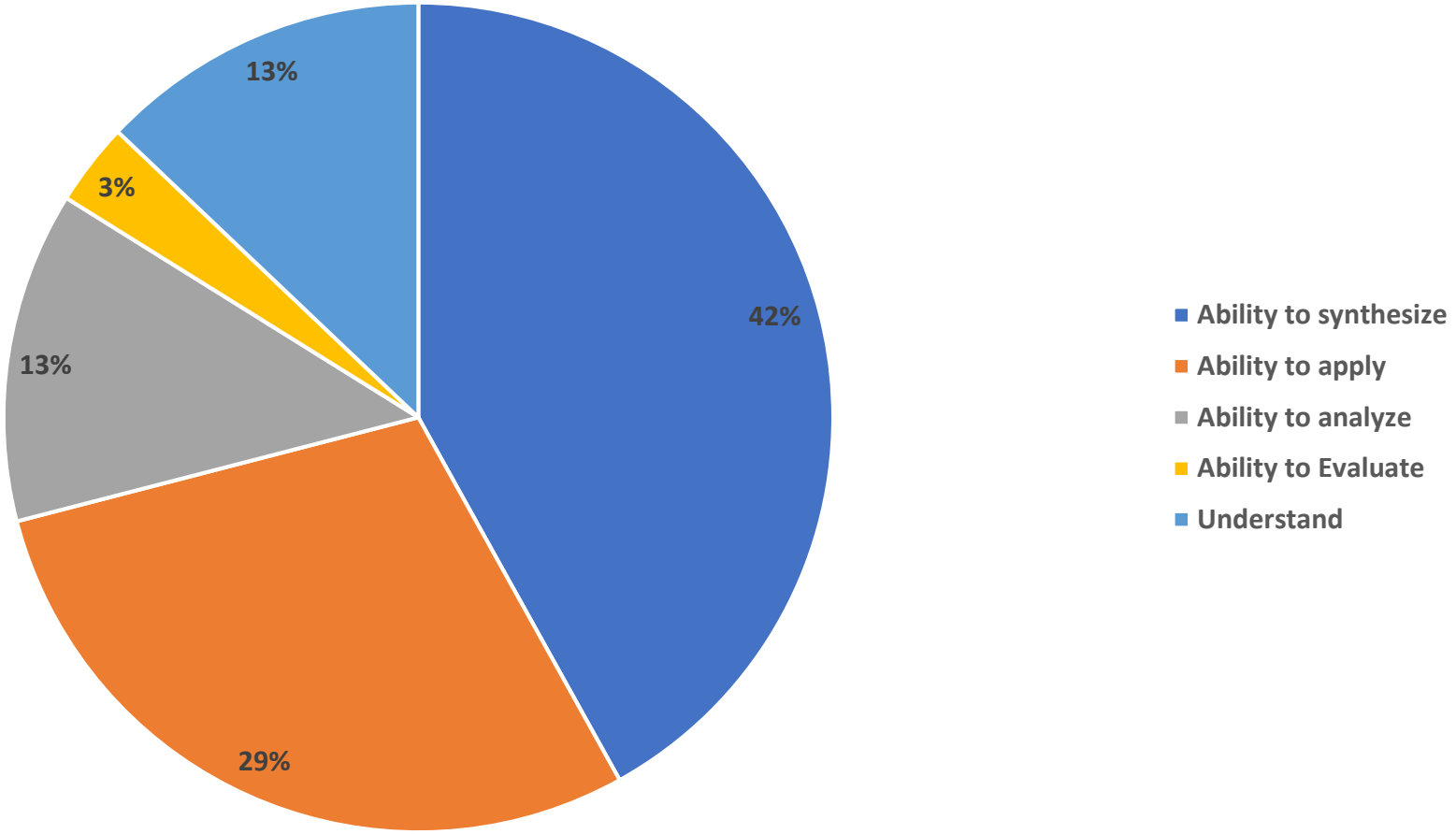

How necessary is the Power System major
100%
0


How necessary is the Electrical Electronics major
100%
0

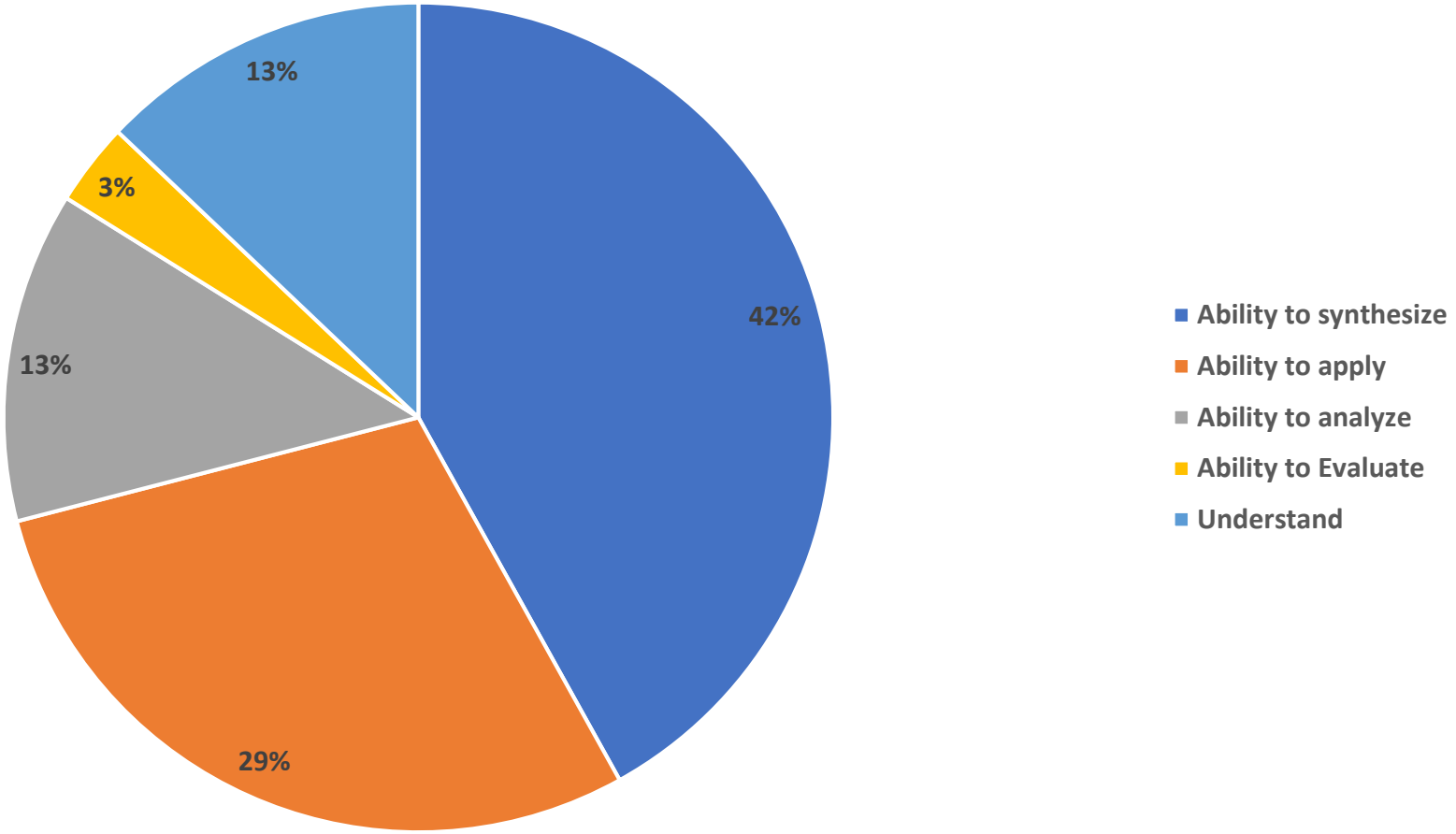

How necessary is the Industrial And Commercial power system Major
100%
0


How necessary is the Renewable Energy Major
100%
0

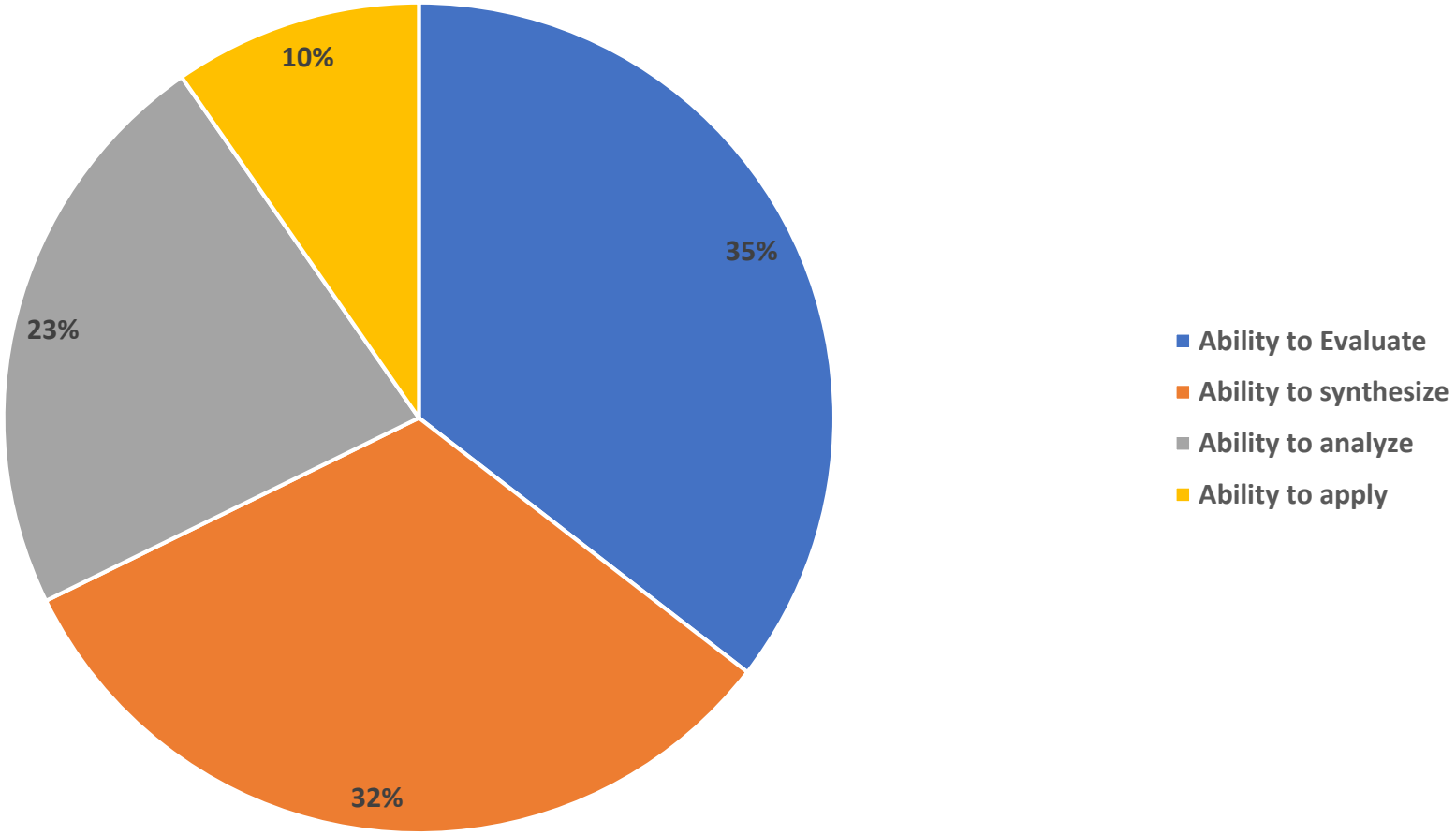
1.1 KNOWLEDGE OF UNDERLYING MATHEMATICS AND SCIENCES



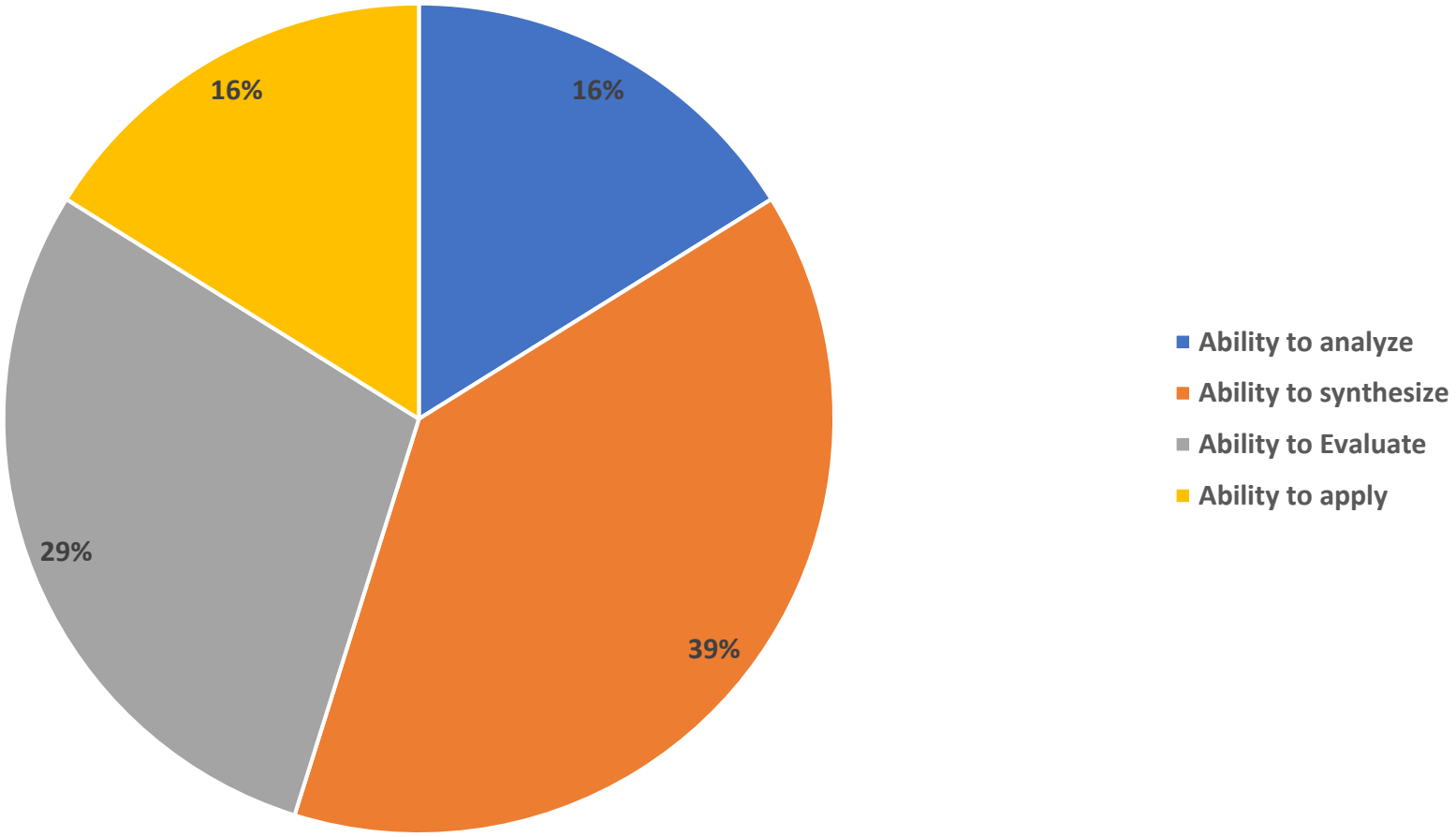
1.2 CORE ENGINEERING FUNDAMENTAL KNOWLEDGE



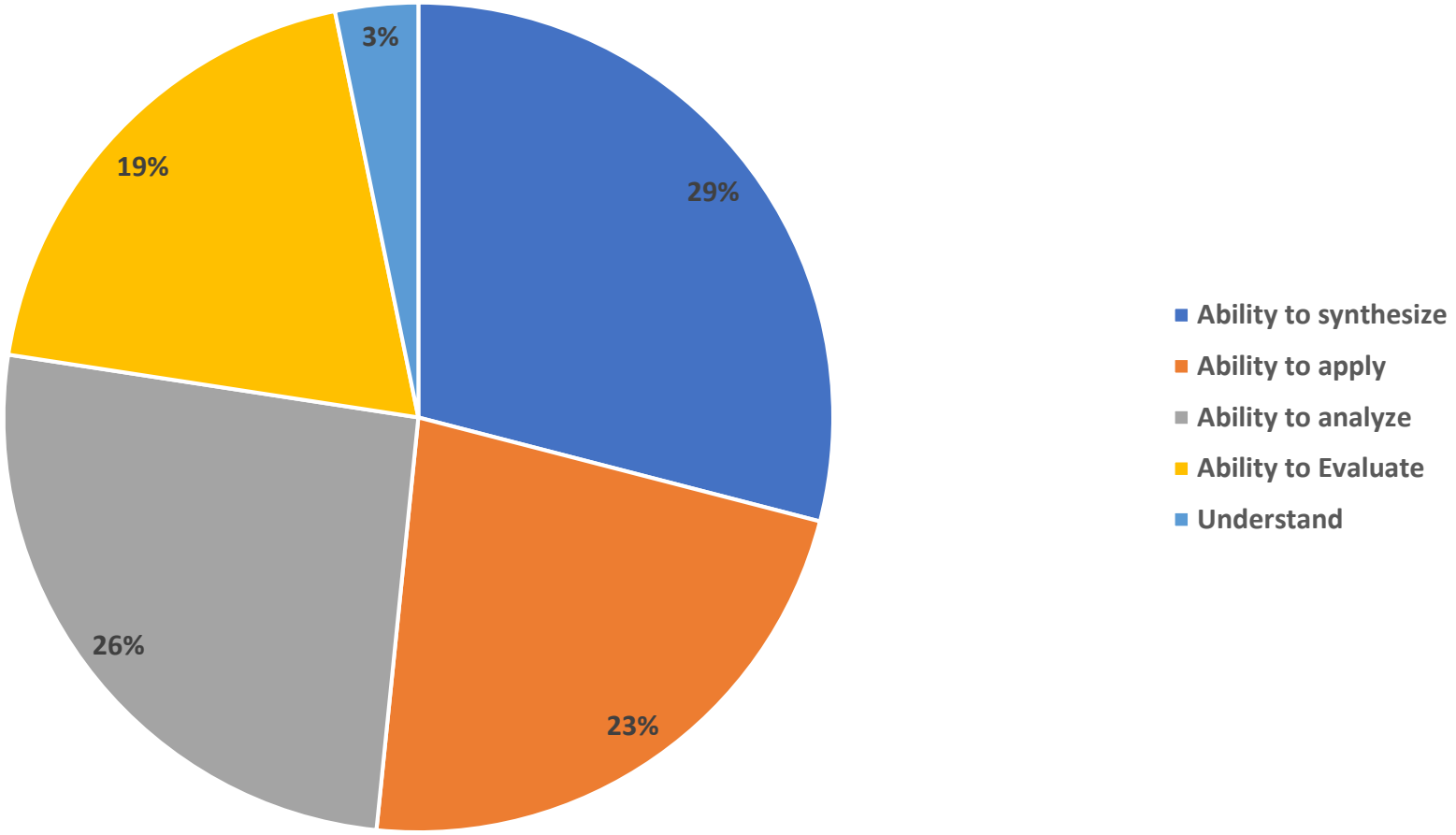
1.3 ADVANCED ENGINEERING FUNDAMENTAL KNOWLEDGE, METHODS AND TOOLS



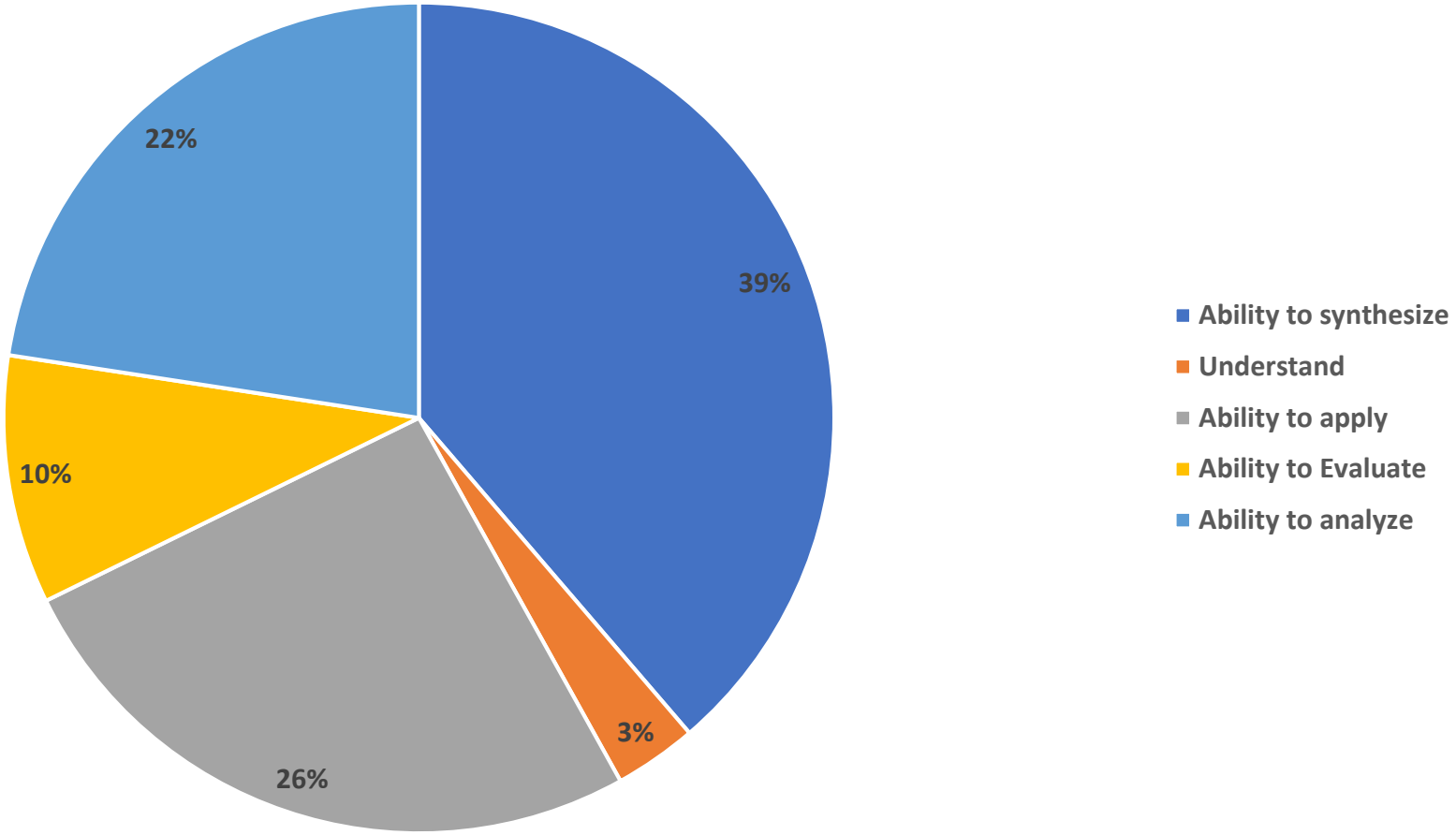
2.1 ANALYTICAL REASONING AND PROBLEM SOLVING



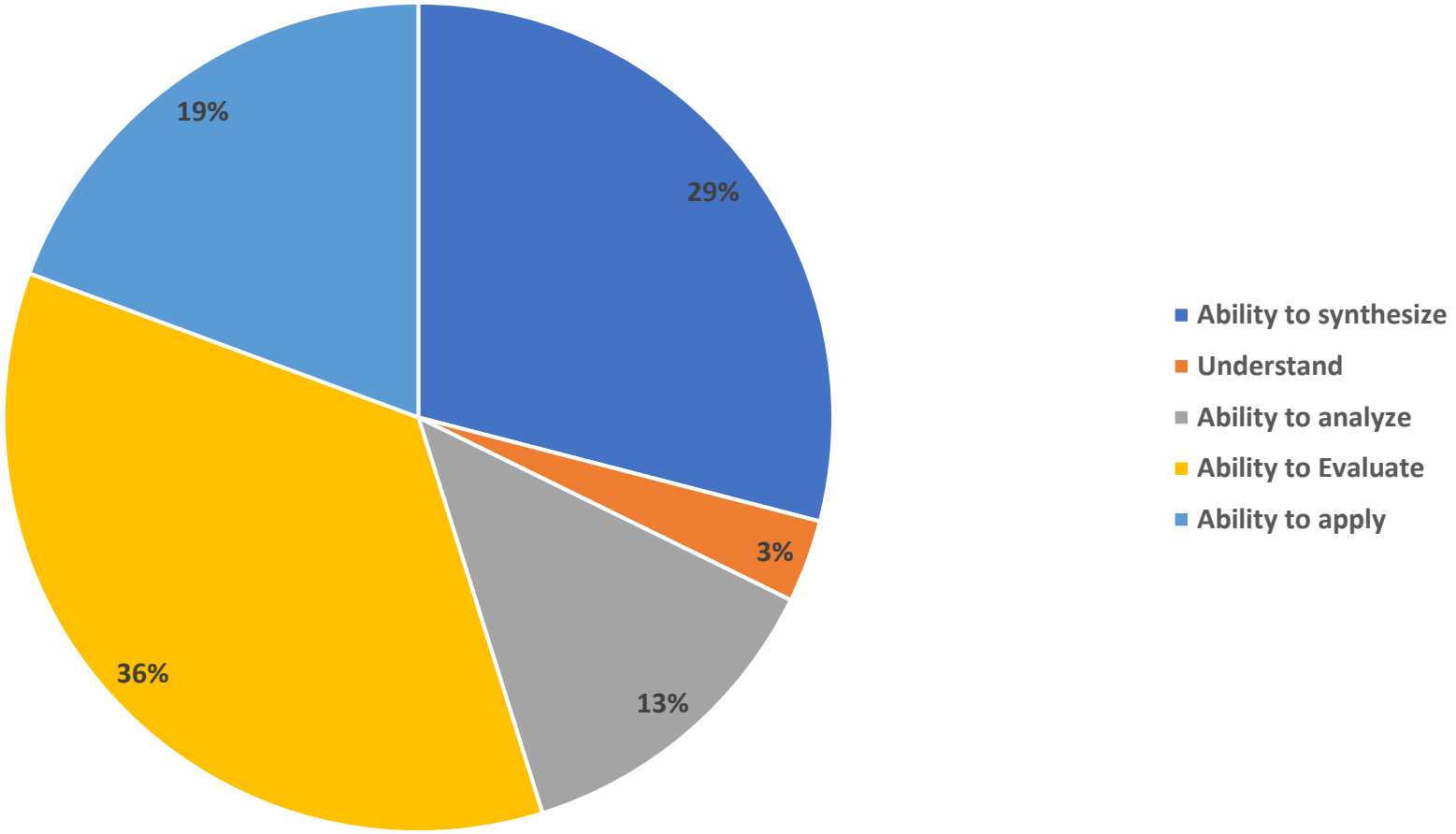
2.2 EXPERIMENTATION, INVESTIGATION AND KNOWLEDGE DISCOVERY



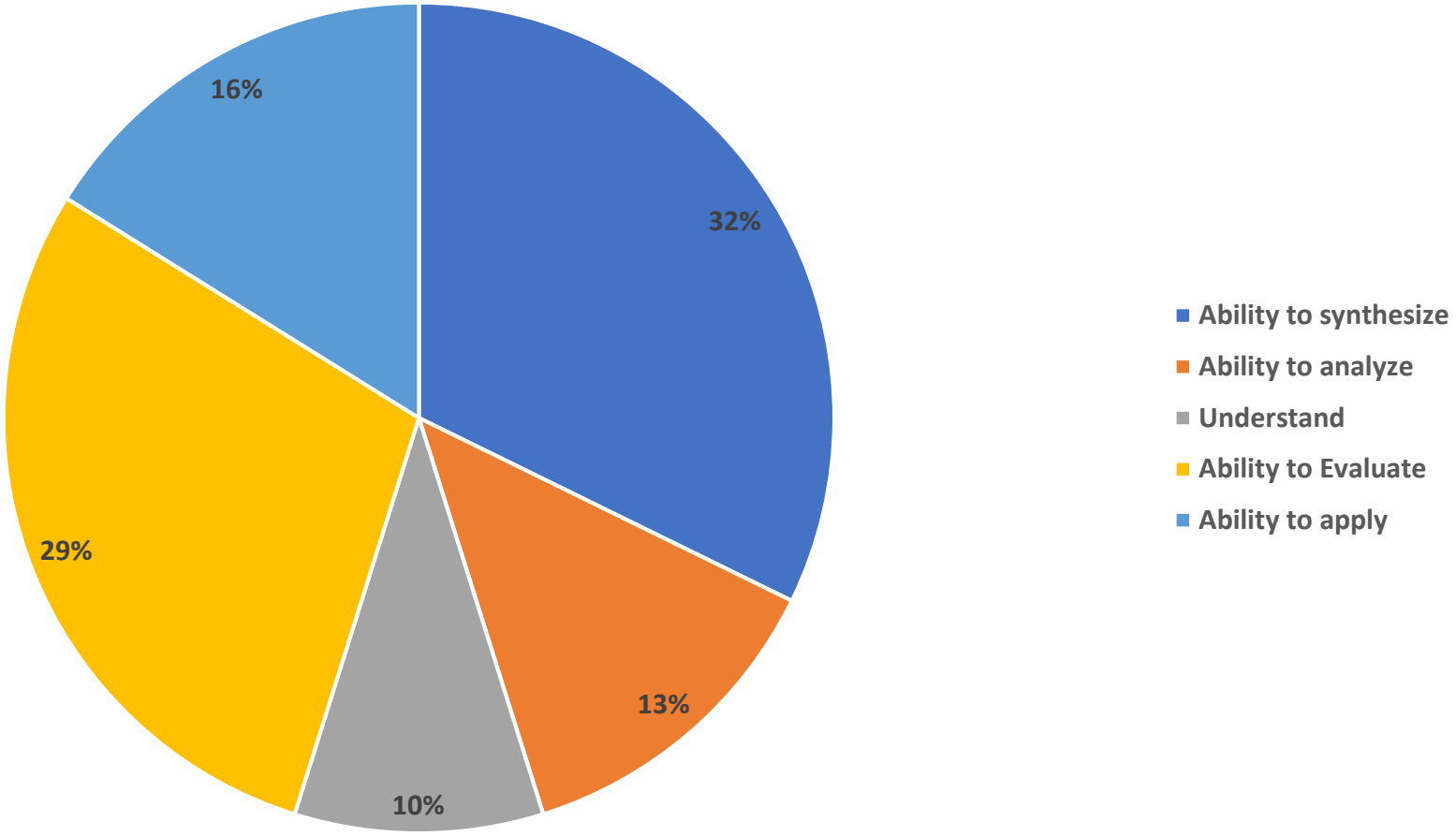
2.3 SYSTEM THINKING



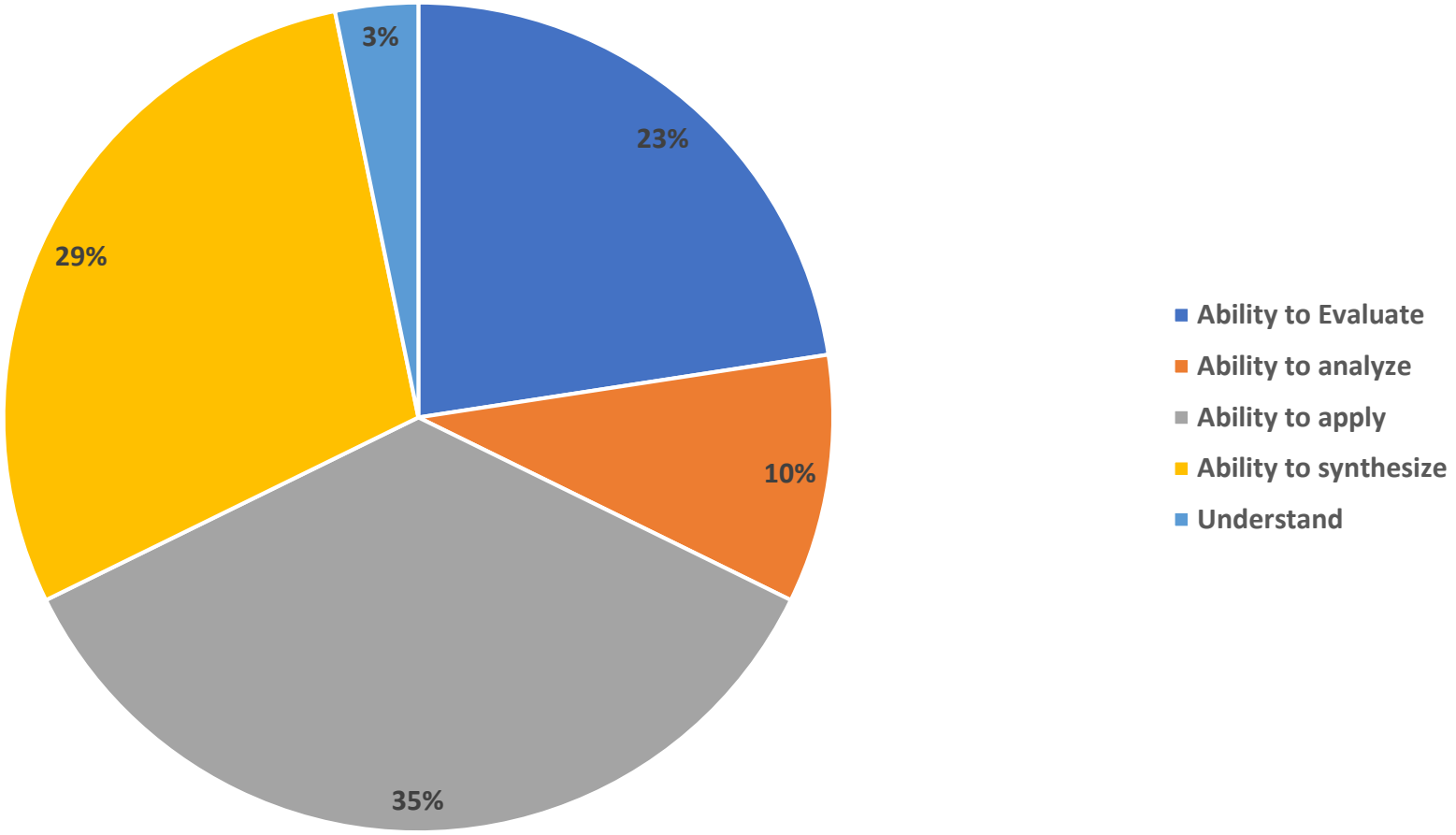
2.4 ATTITUDES, THOUGHT AND LEARNING



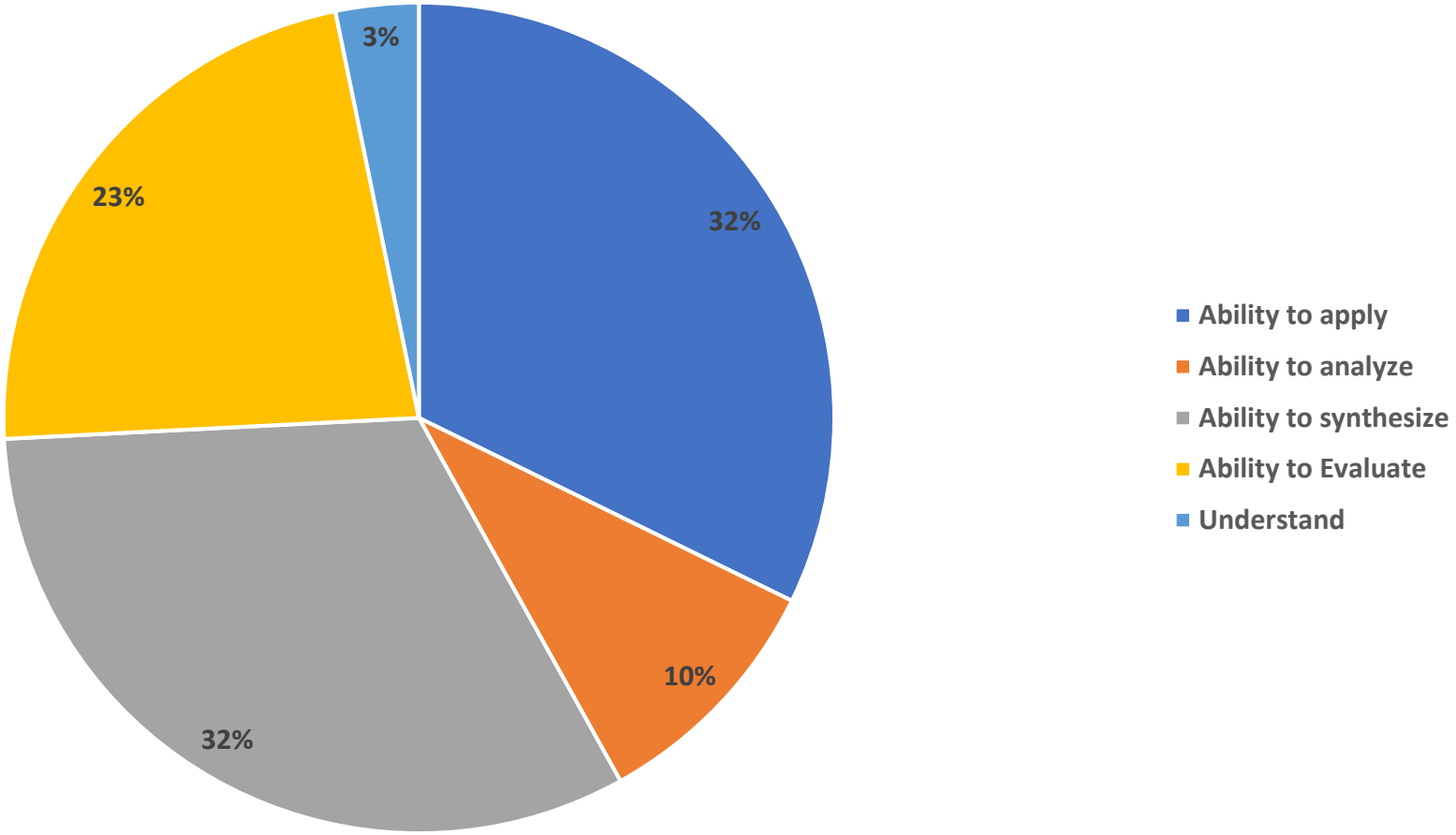
2.5 ETHICS, EQUITY AND OTHER RESPONSIBILITIES



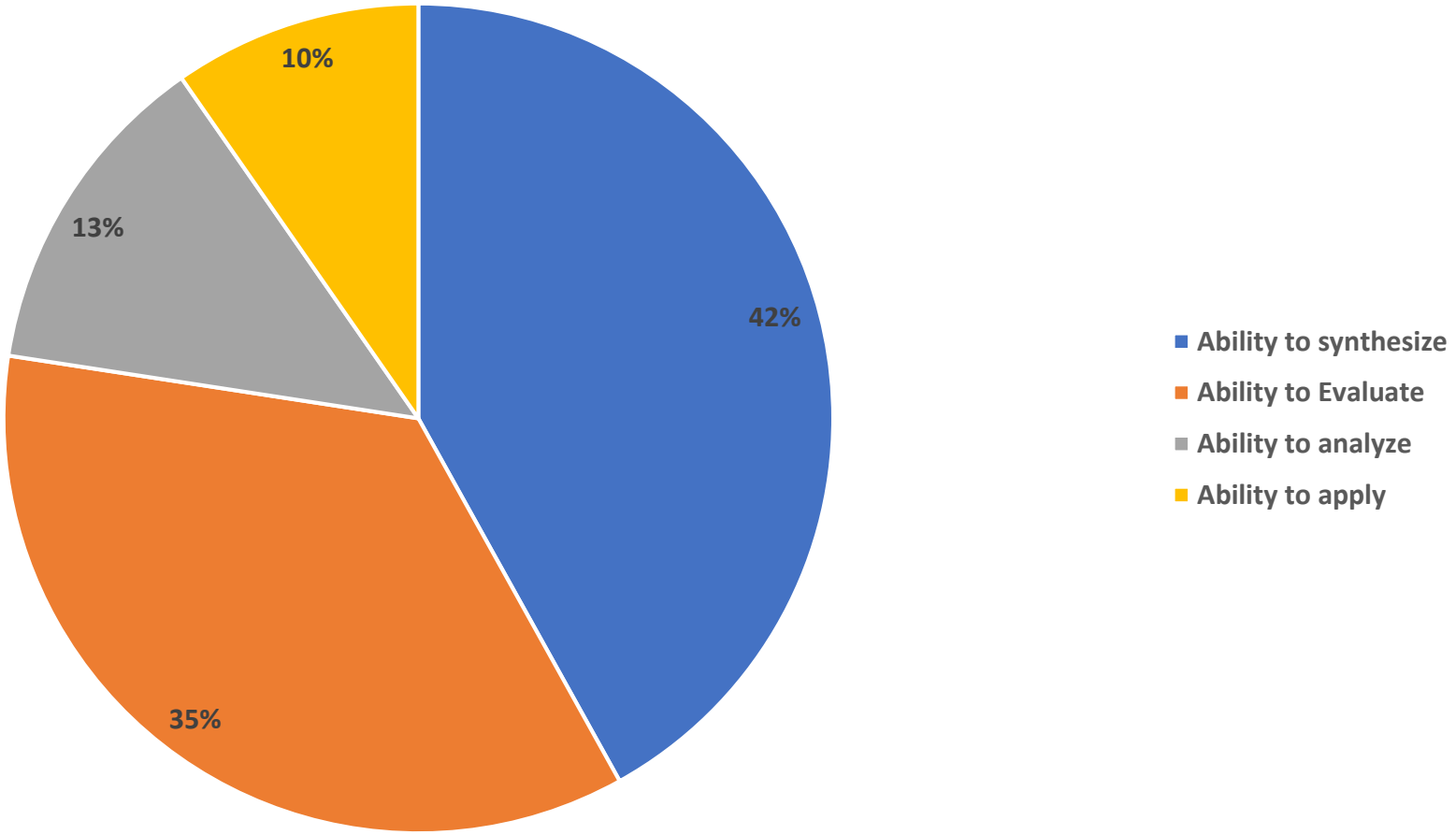
2.6 LAW AND REGULATIONS IN THE ENGINEERING FIELD



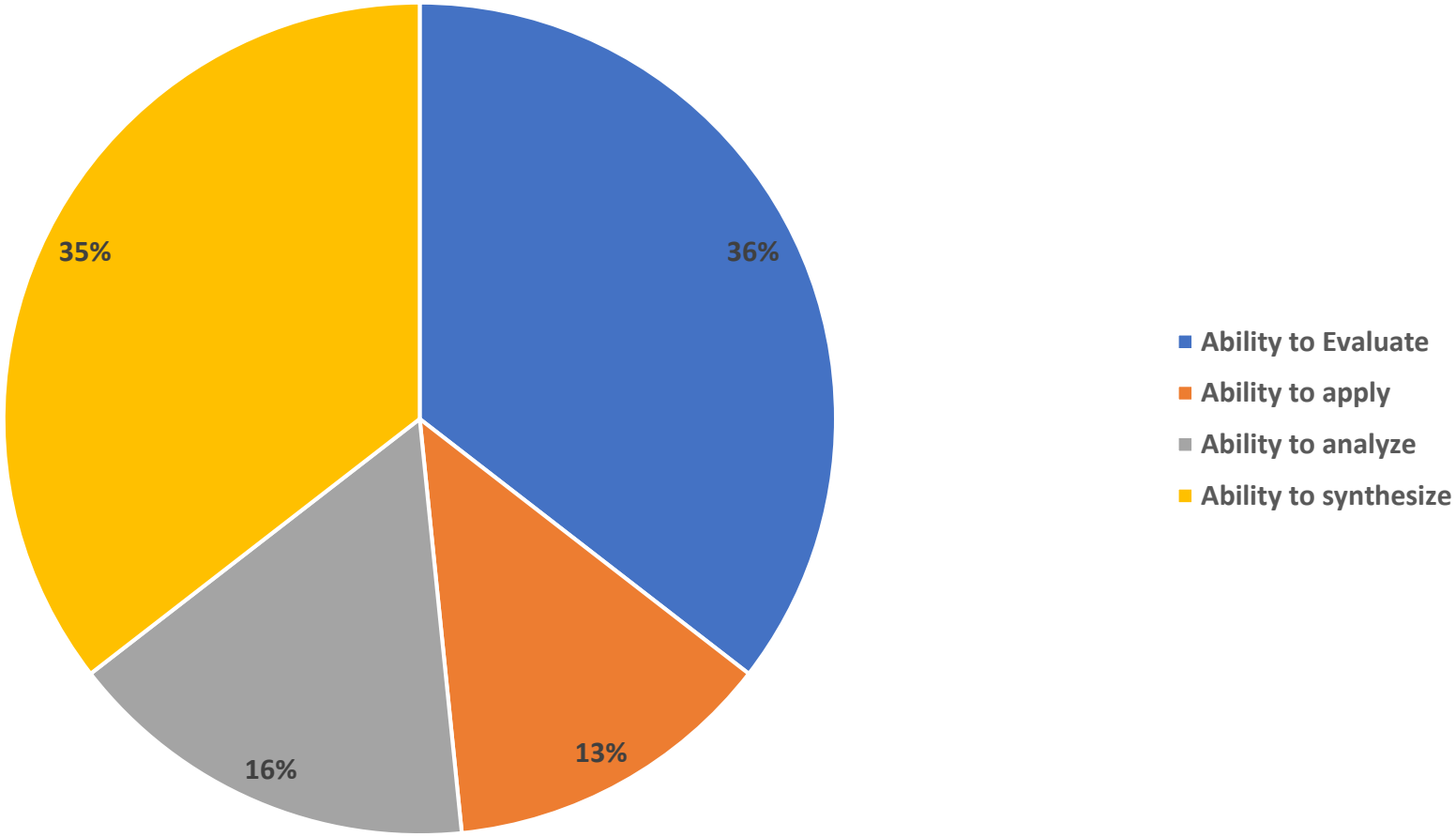
2.7 UNDERSTANDING OF CONTEMPORARY ISSUES AND LIFE LONG LEARNING



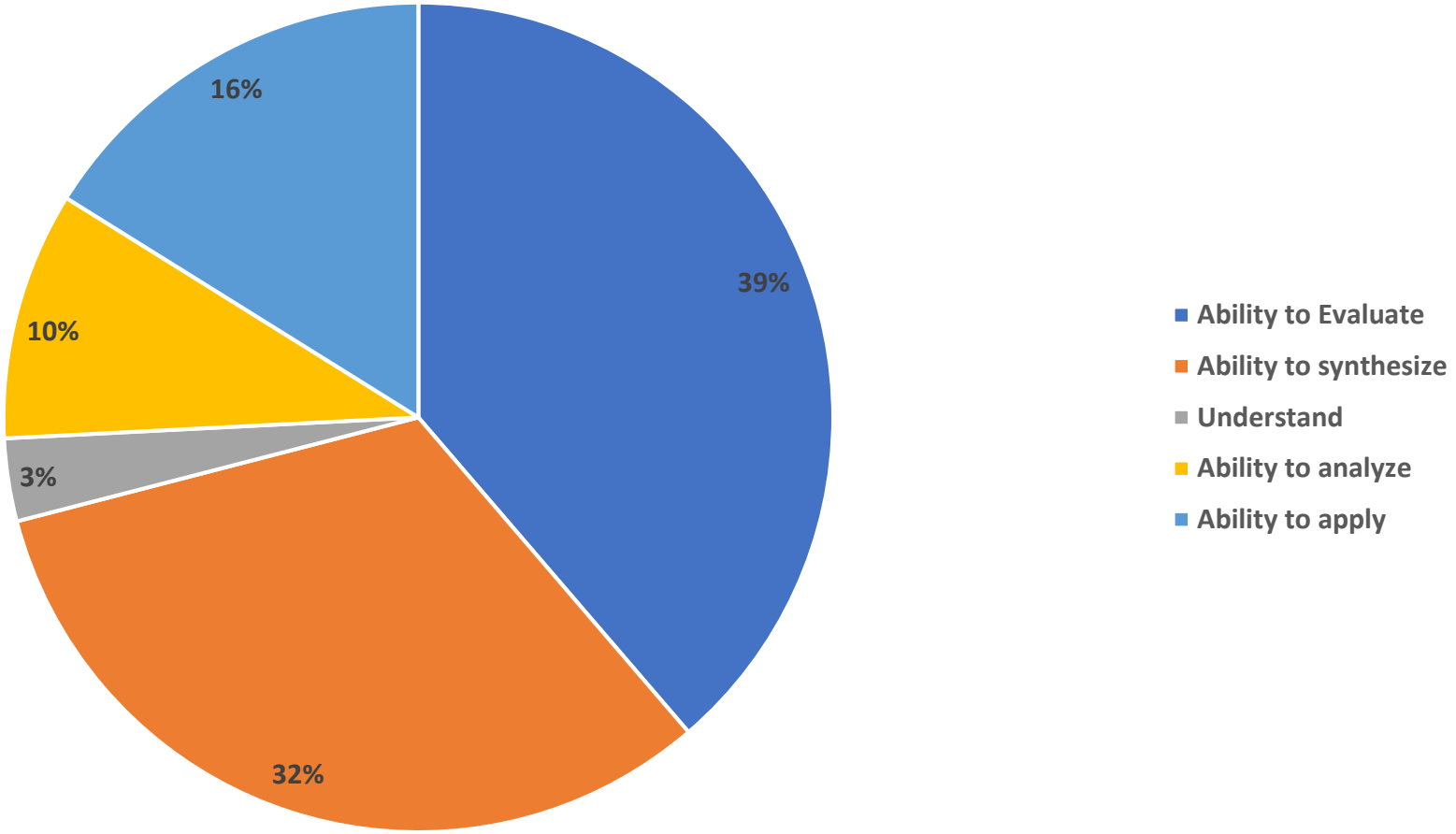
3.1 TEAMWORK


10%
13%
42%
35%
Ability to synthesize
Ability to Evaluate
Ability to analyze
Ability to apply

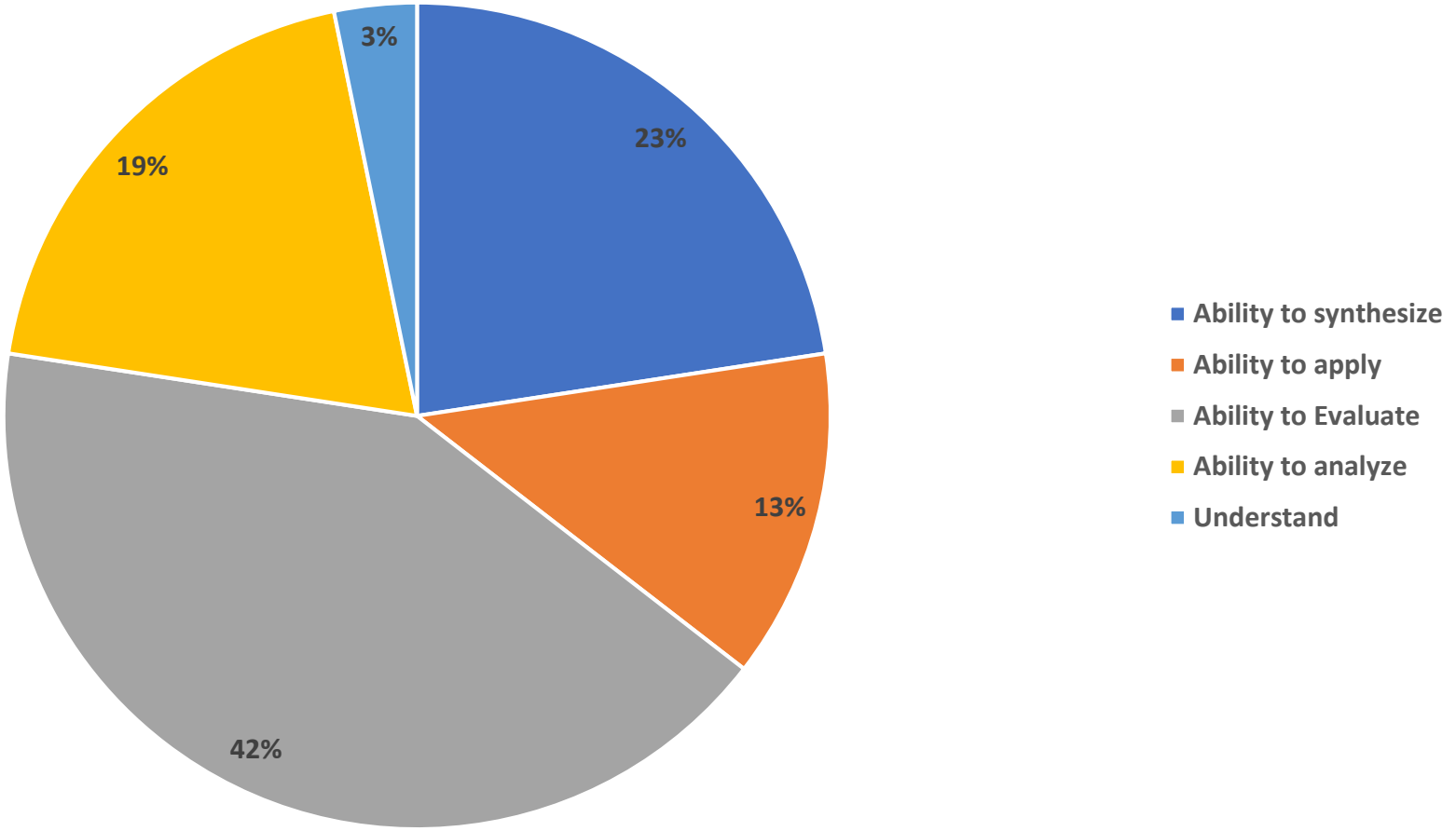
3.2 COMMUNICATIONS



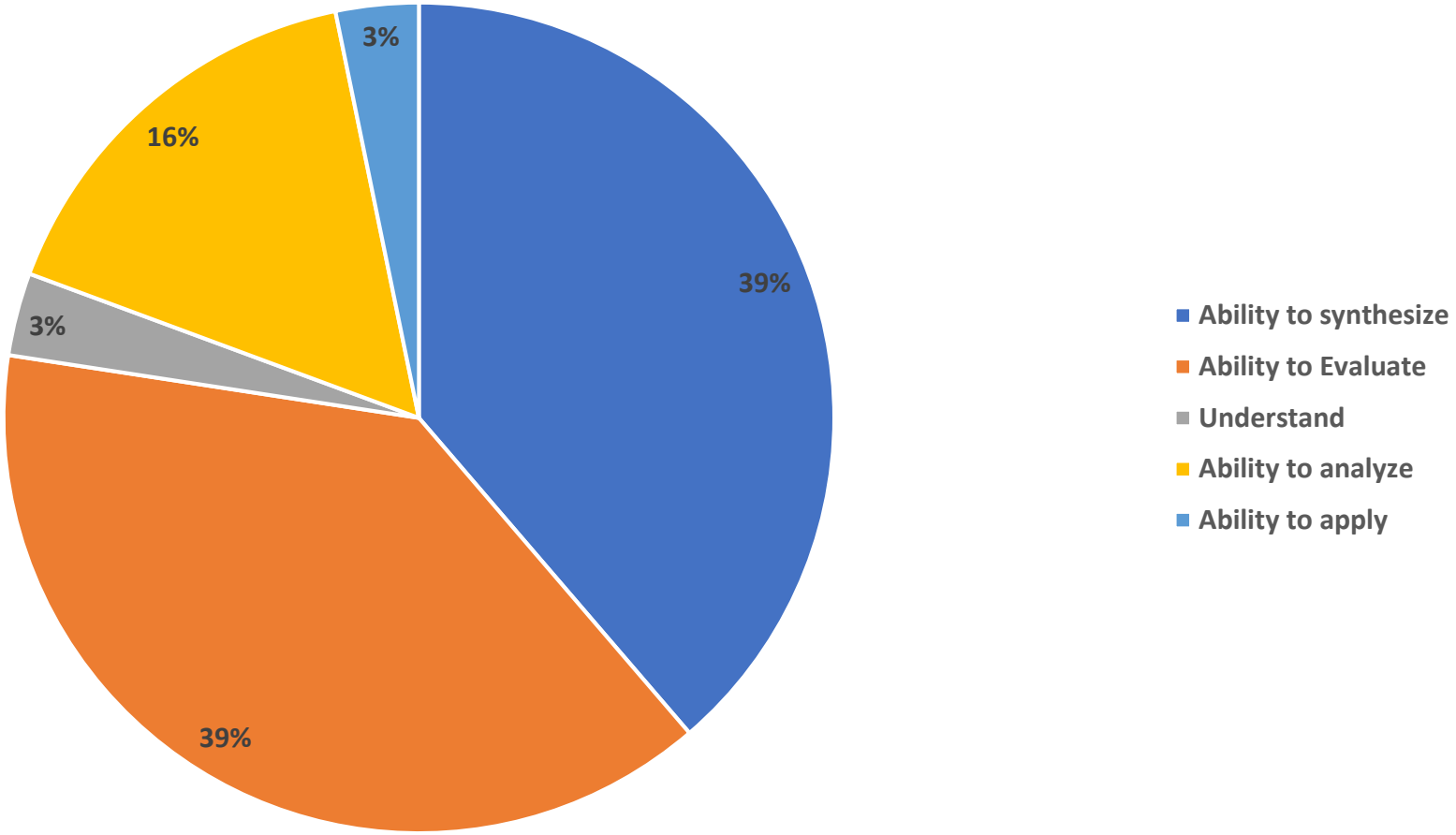
3.3 COMMUNICATIONS IN FOREIGN LANGUAGES



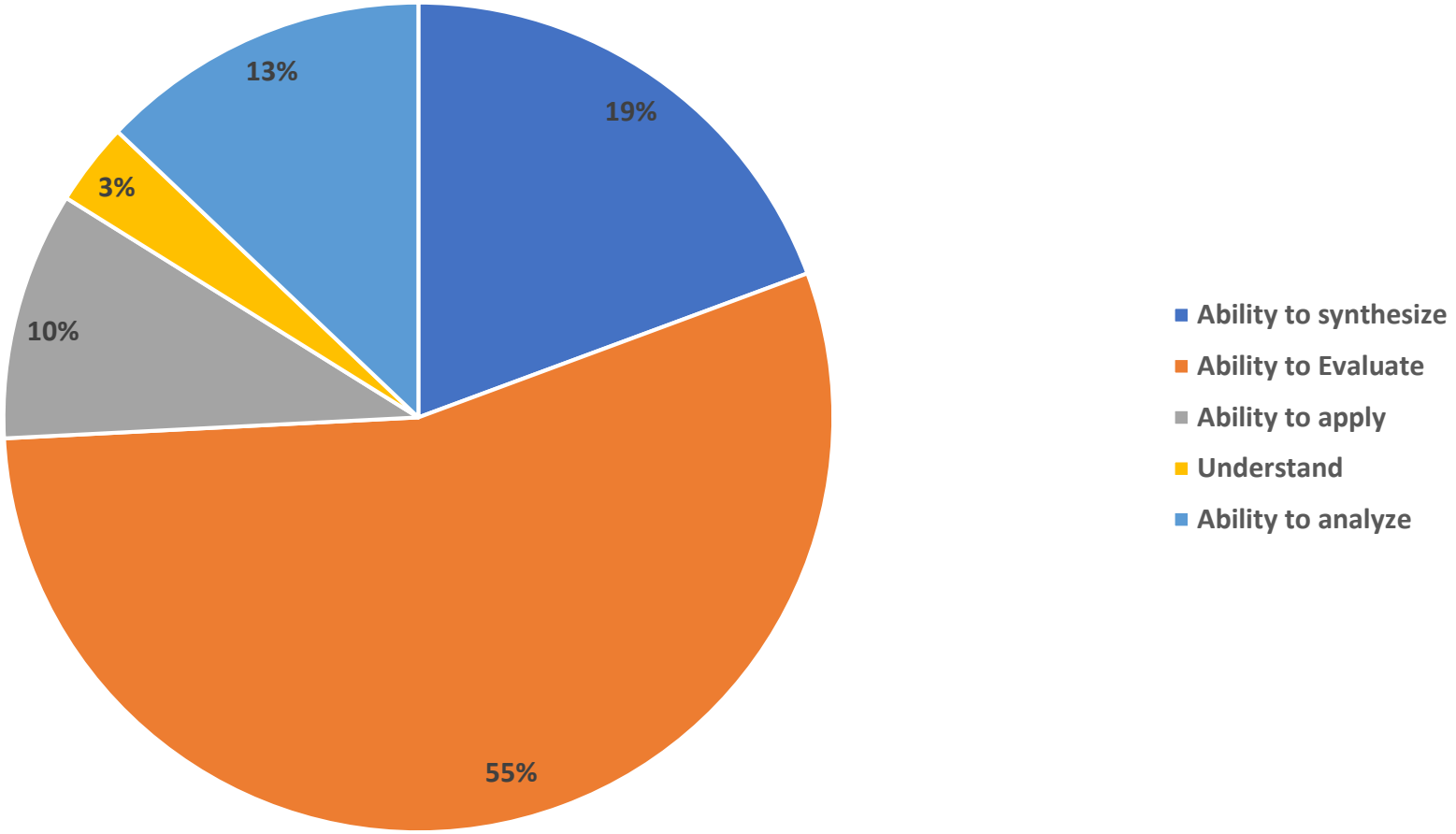
4.1 CONCEIVING, SYSTEMS ENGINEERING AND MANAGEMENT



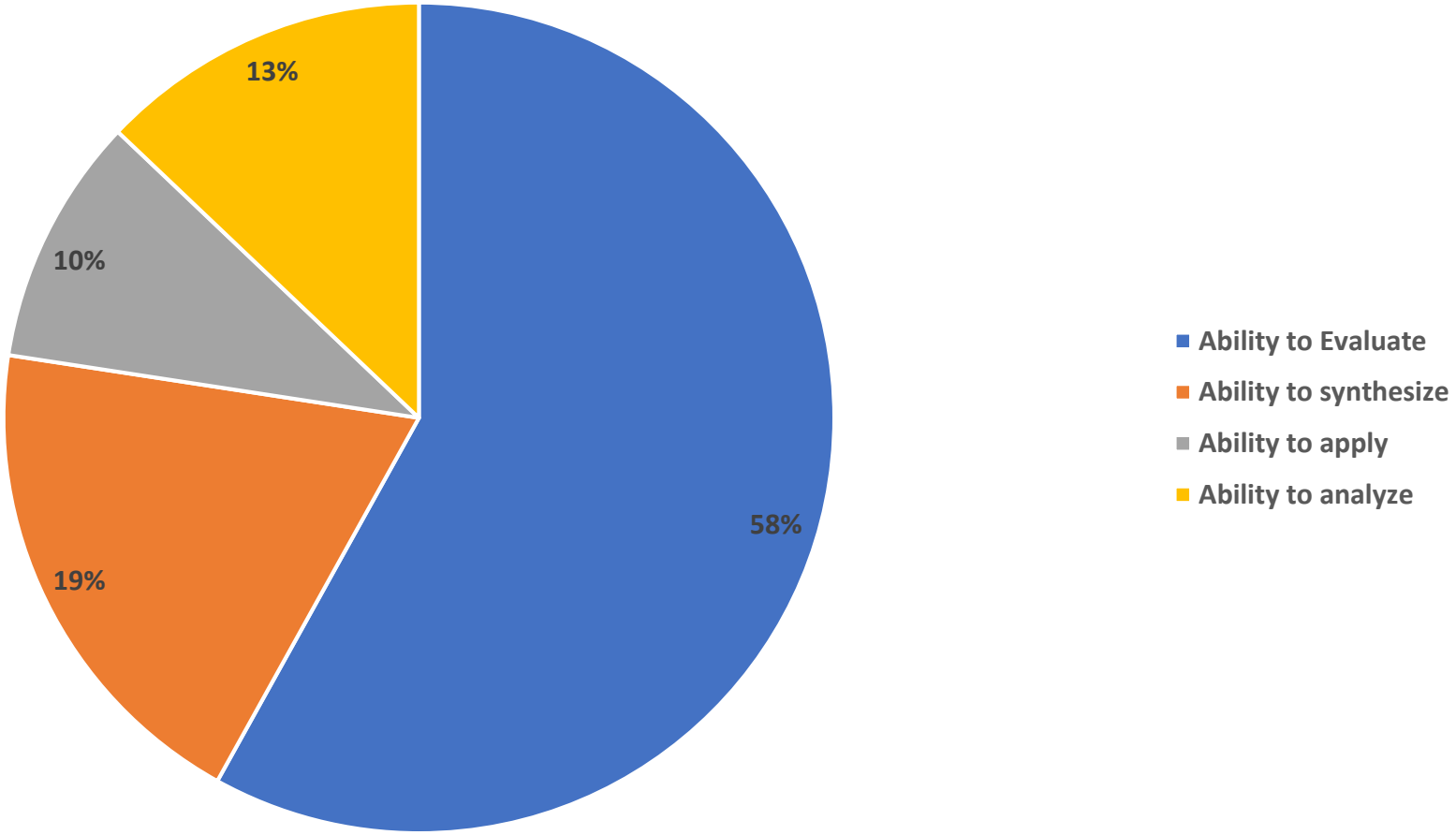
4.2 DESIGNING ENGINEERING SOLUTIONS



4.3 IMPLEMENTING ENGINEERING SOLUTION



4.4 OPERATING ENGINEERING SYSTEMS



BRIEF DESCRIPTION OF THE SURVEY

(Students survey on the courses they have taken in the last semester)

1. Objectives

The objectives of this survey is to take feedback of students about various aspects of the courses that they have taken. This study is carried out at the end of every semester.

This survey is performed by the Academic Office of HUST. The survey results are afterwards extracted and sent to institutions in charge of the courses.

2. Respondents

This brief presents results of the survey for 20181 semester. 635 courses were surveyed. All students must fill the survey form.

3. Methodology

Student need to fill this online survey after each semester. The Academic Office send the survey results to the Heads of School.

4. Key findings

- Most students give positive feedback about: course importance and relevance, teaching and pedagogical skills, lecturers' ethics.
- Question 4 receives feedbacks with the least variation. Most students are satisfied with the quality of lectures and personal guide sessions.
- There are a few courses that receive some negative feedback on Question 1 (importance), Question 4 (Quality of lecture). SEE will gathered feedback on this courses in other semester and take action if the responses are consistent.

Survey : Course evaluation

Carried out by the Academic Office after each semester

Question 1. How do you rate the importance of this course in the training program

a. Very important
b. Important
c. Quite important
d. Not important
e. Don't know

Question 2. Teaching methods, including lectures, online content, project, experiments and excercises are well designed and effective?

a. Very effective
b. Effective
c. Adequate
d. Not adequate
e. Very inadequate

Question 3. Are you adequately explained and guided to perform the self study, decide the learning methods and course materials

a. Very good
b. Good
c. Fair
d. Not good
e. Very bad

Question 4. How do you rate the quality of lecture and guides, including in-class lecture and personal guide sessions if applicable

a. Very good
b. Good
c. Fair
d. Not good
e. Very bad

Question 5. How do you rate the lecturer's pedagogical skills, his/her ability to use technologies in the lecture which enhance the learning efficiency

a. Very good
b. Good
c. Fair
d. Not good
e. Very bad

Question 6. How much time do you spend on self-study, compared to the lecturing time?

a. >=2 times
b. >=1.5 times
c. >=1 times
d. >=0.5 times
e. <0.5 times

Question 7. How do you rate your motivation to learn this course, compared to other courses?

a. Very high motivation
b. Higher motivation
c. About the same
d. Worse
e. Very bad

Question 8. Class attendance: According to you, what is the rate of class attendance, in percentage of the total number of registered students

a. >=90%
b. >=80%
c. >=70%
d. >=60%
e. <60%

Question 9. Lecturer's ethics. How do you feel about the lecturer ethics, responsibility and fairness

a. Exemplary
b. Good
c. Fair
d. Not good
e. Not acceptable

Question 10. Punctuality. Rate the lecturer punctuality

a. Very good
b. Good
c. Fair
d. Not good

e. Not acceptable

Question 11. Personal progress. Are you satisfied with your progress, in comparison with your effort and expectation

a. Very satisfied
b. Satisfied
c. Fair
d. Not satisfied
e. Very disappointed

Question 12. Exam and test: How do you rate the test methods (its relevance to the course outline and expected outcome)

a. Very good
b. Good
c. Fair
d. Not good
e. Inadequate

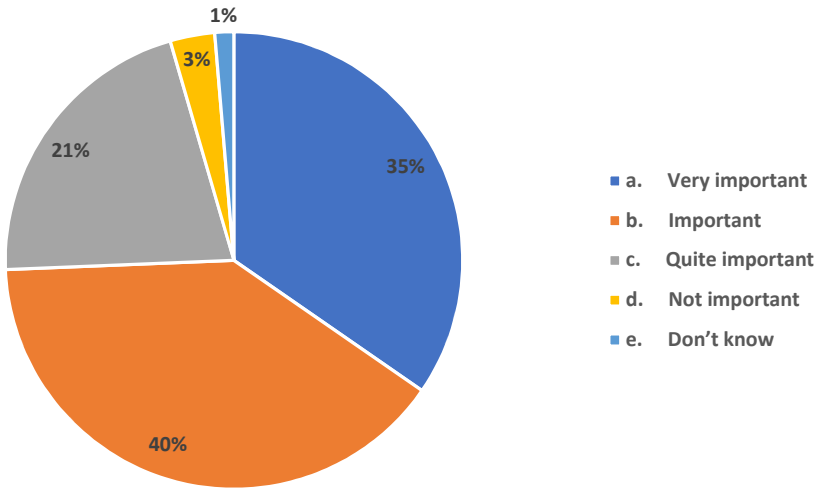
Question 13. Overall assessment. Are you satisfied with the quality and effectiveness of this course (or perhaps you could have learnt the course entirely yourself)

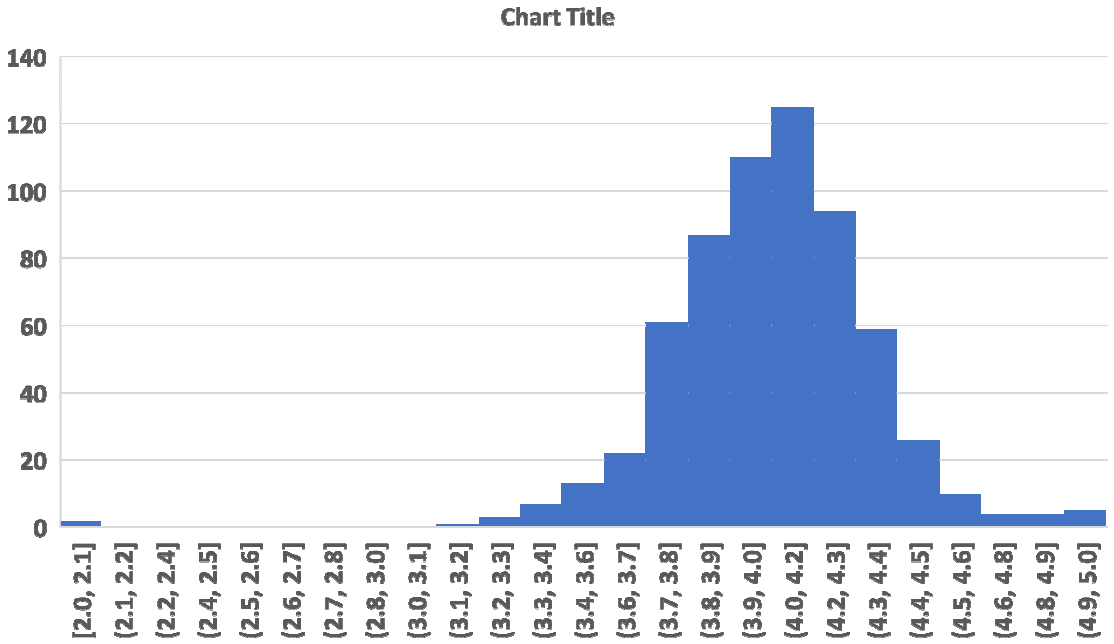
a. Very satisfied
b. Satisfied
c. Fair
d. Not satisfied
e. Very disappointed

Question 14. B-Learning: Do you agree that one part or all of this course content can be made online?

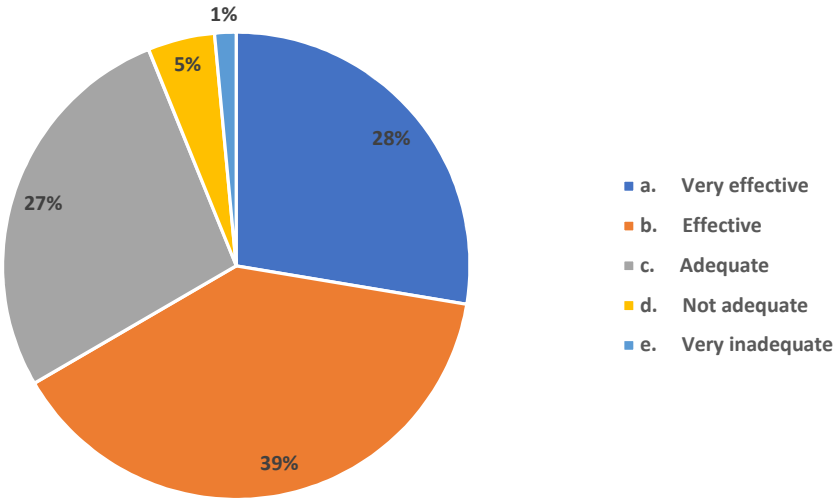
a. Completely agree
b. Agree
c. Whatever
d. Not very agreed
e. I don’t agree

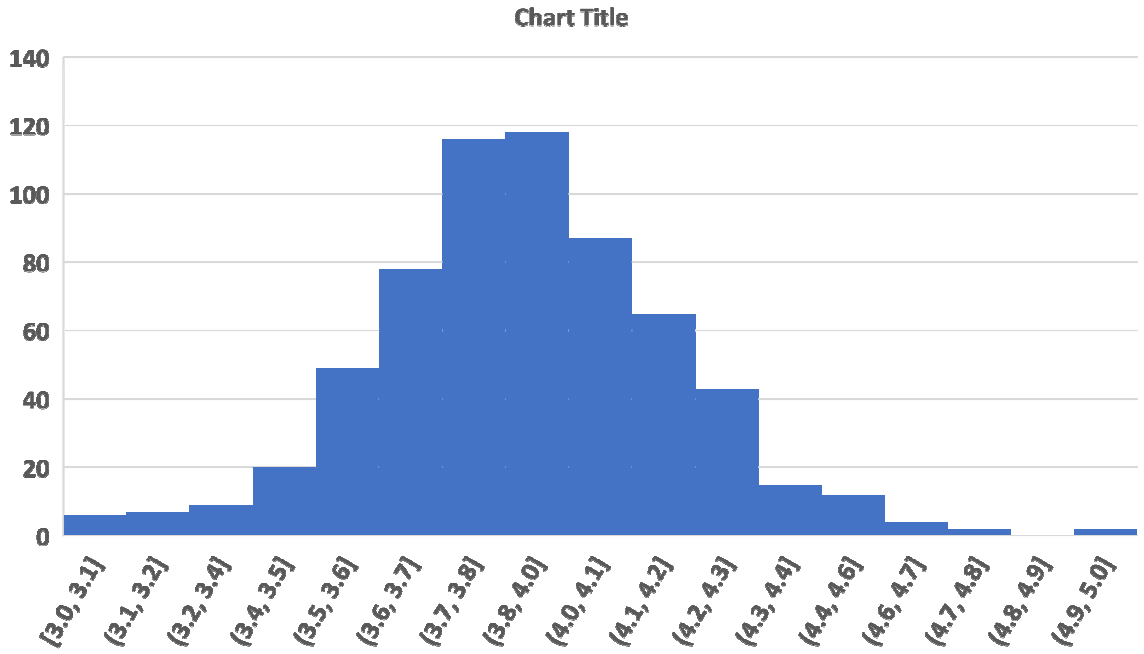
Question 1. How do you rate the importance of this course in the training program



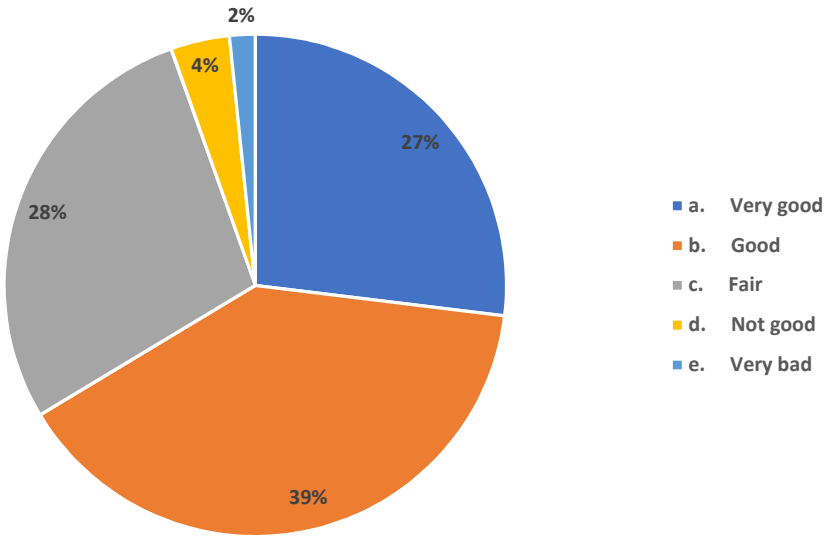


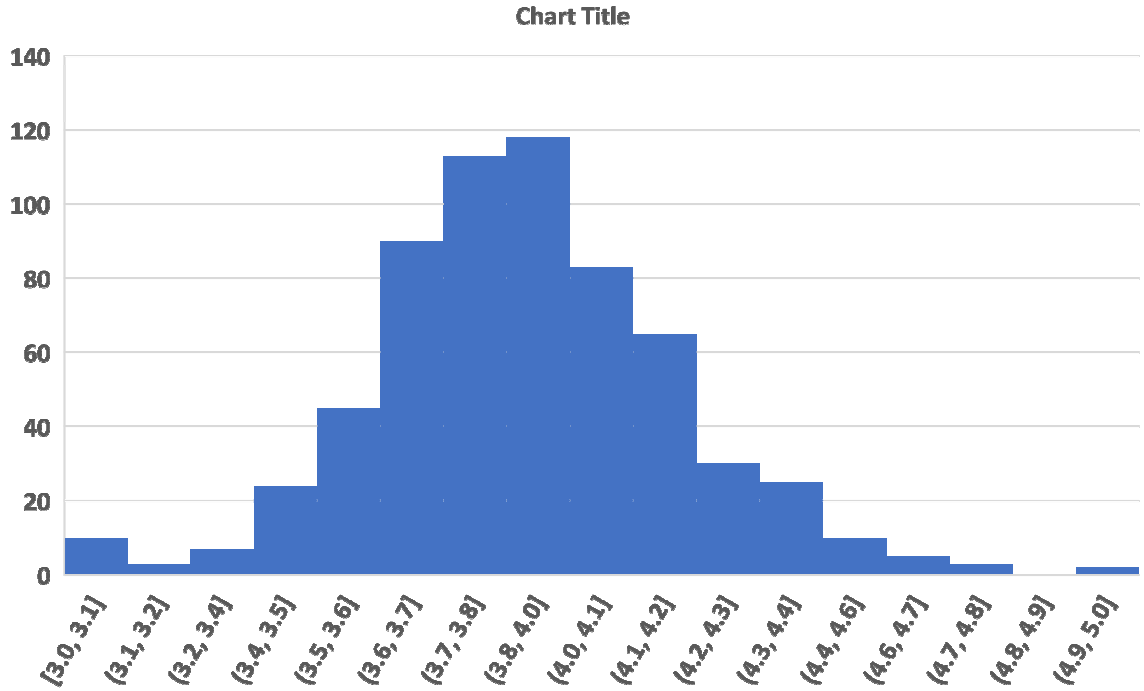
Question 2. Teaching methods, including lectures, online content, project, experiments and excercises are well designed and effective?



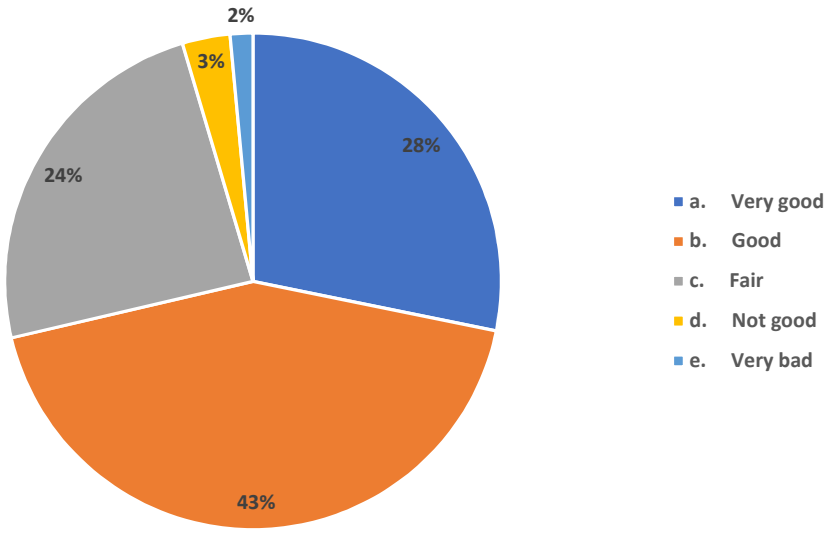


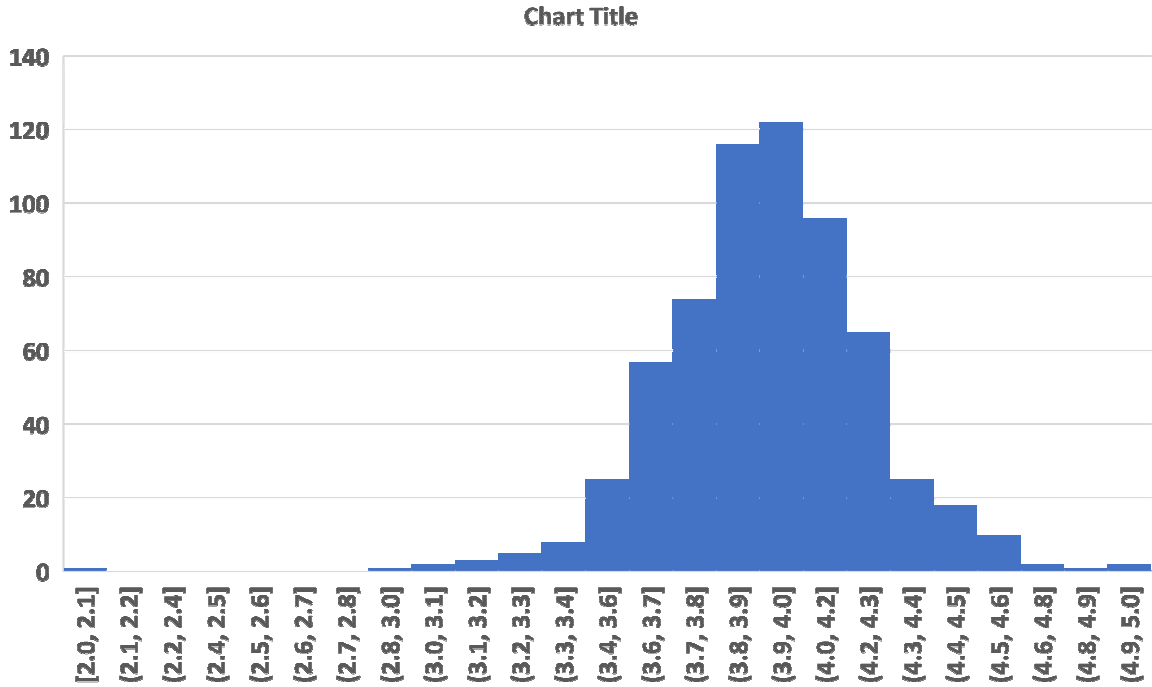
Question 3. Are you adequately explained and guided to perform the self study, decide the learning methods and course materials



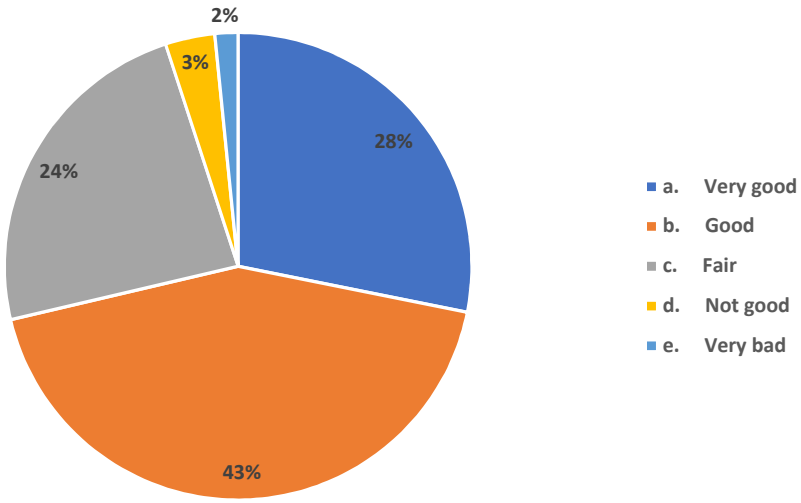


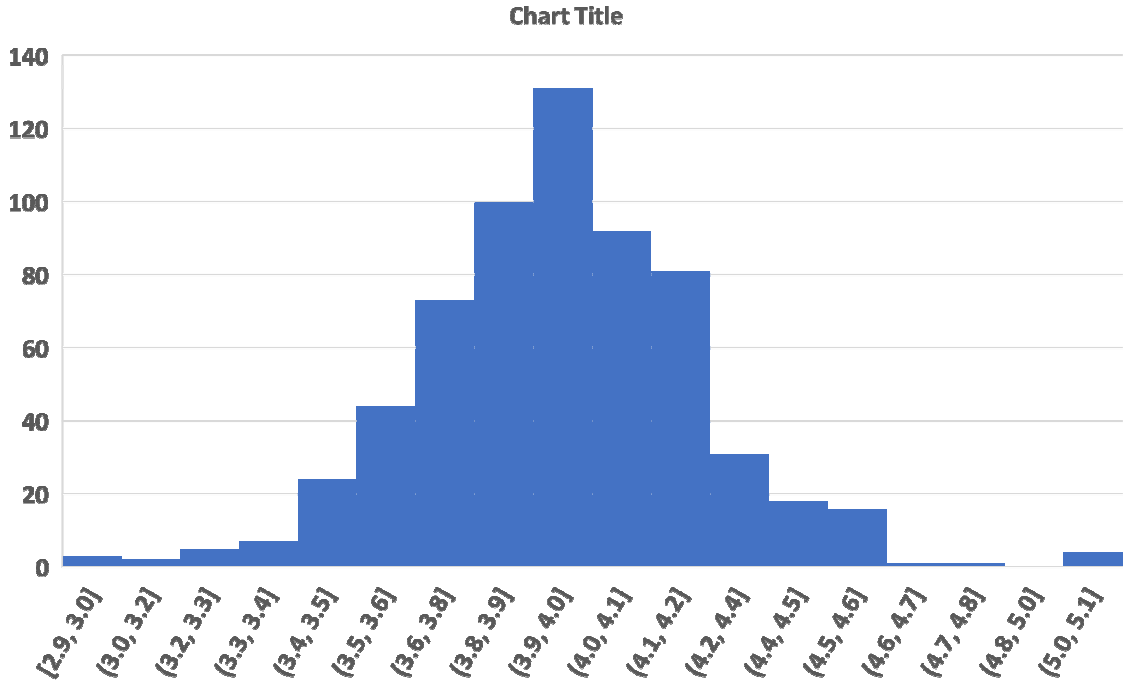
Question 4. How do you rate the quality of lecture and guides, including in-class lecture and personal guide sessions if applicable



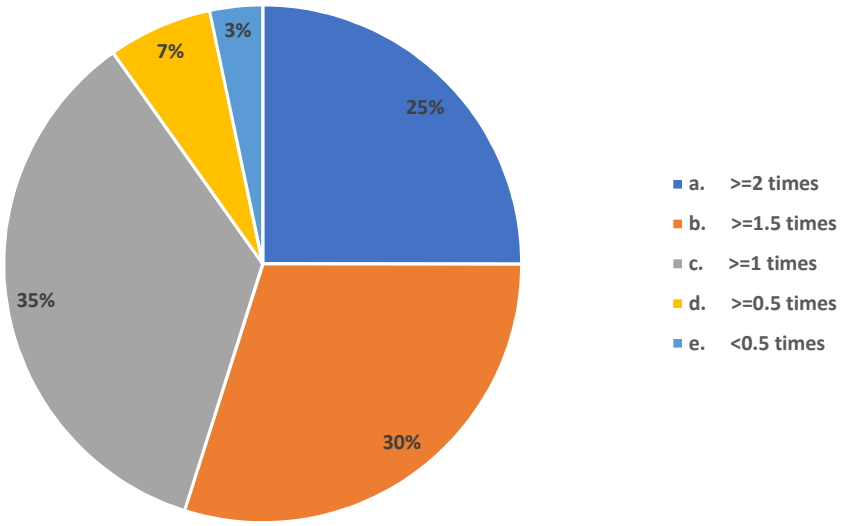


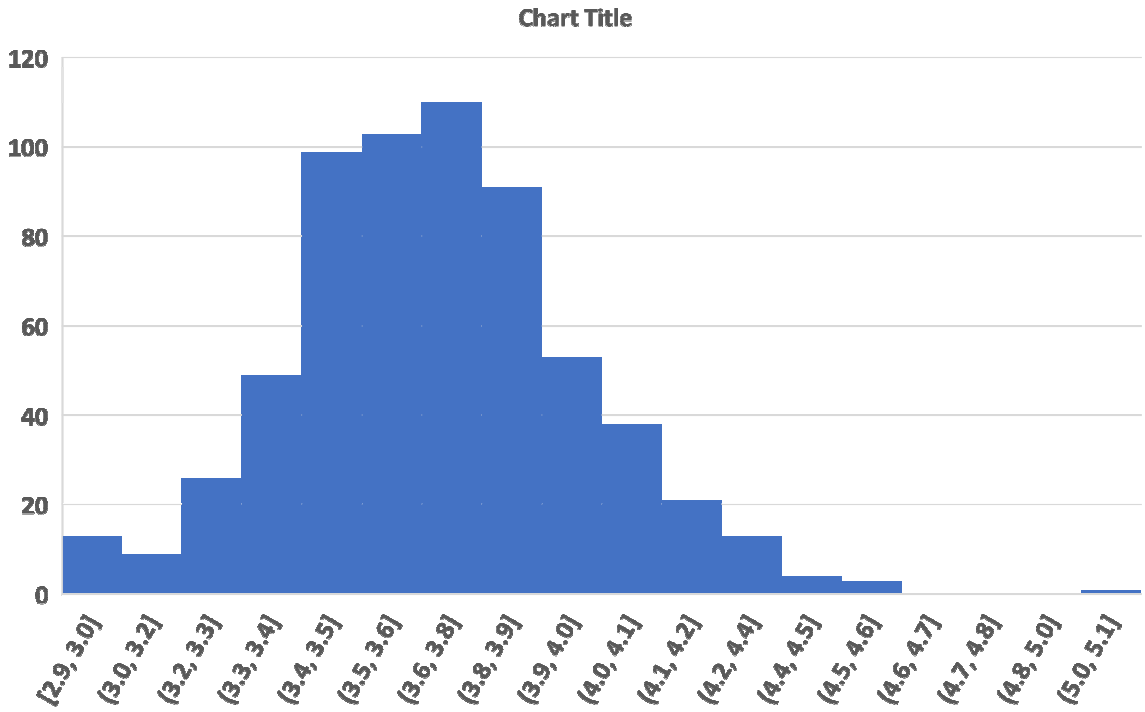
Question 5. How do you rate the lecturer's pedagogical skills, his/her ability to use technologies in the lecture which enhance the learning efficiency



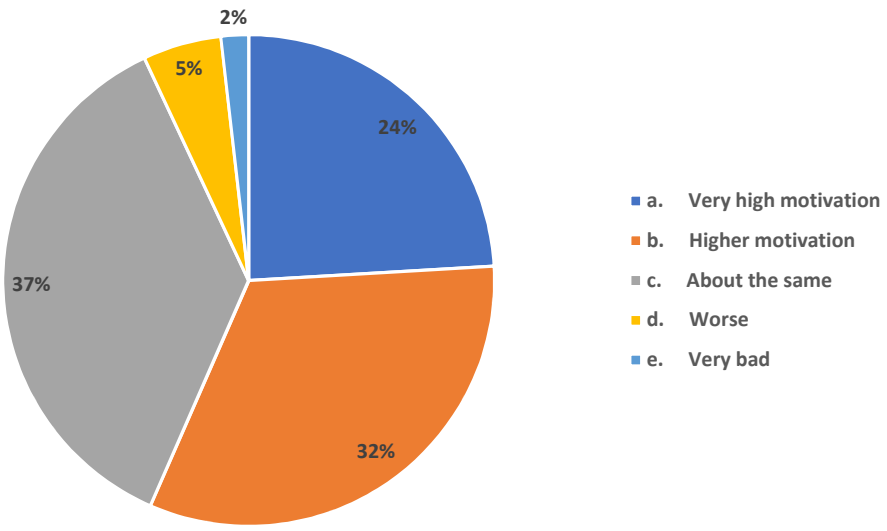


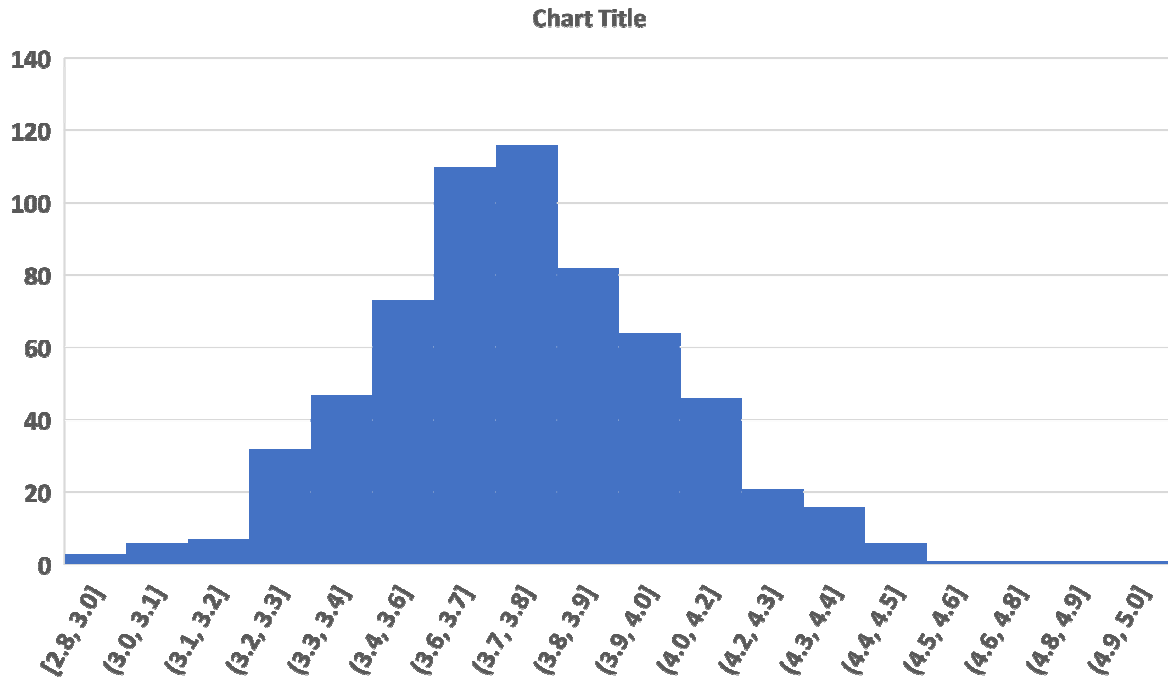
Question 6. How much time do you spend on self-study, compared to the lecturing time?



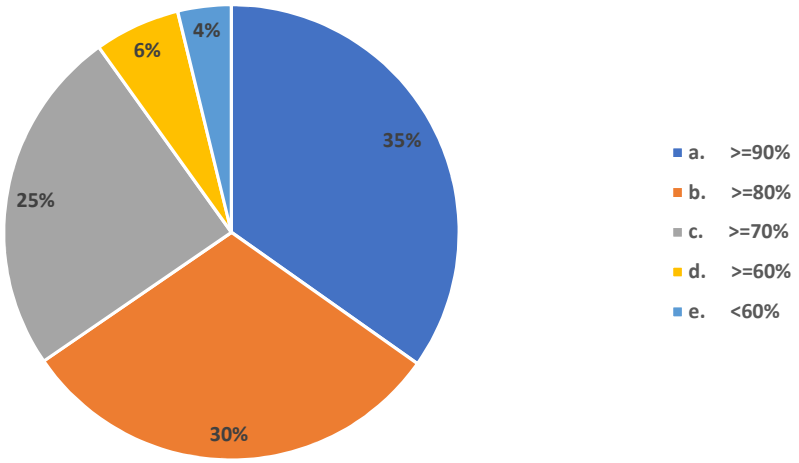


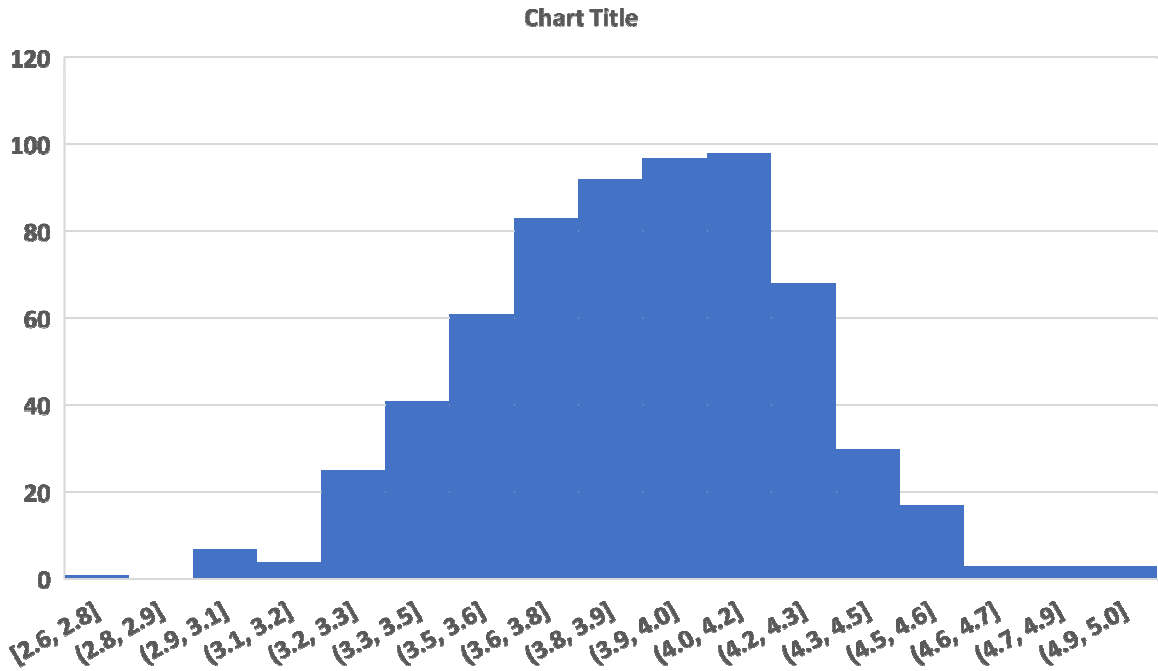
Question 7. How do you rate your motivation to learn this course, compared to other courses?



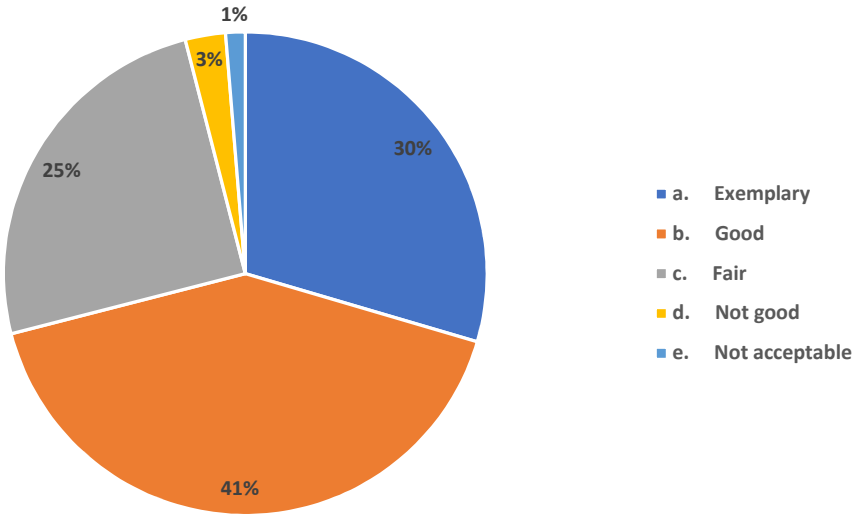


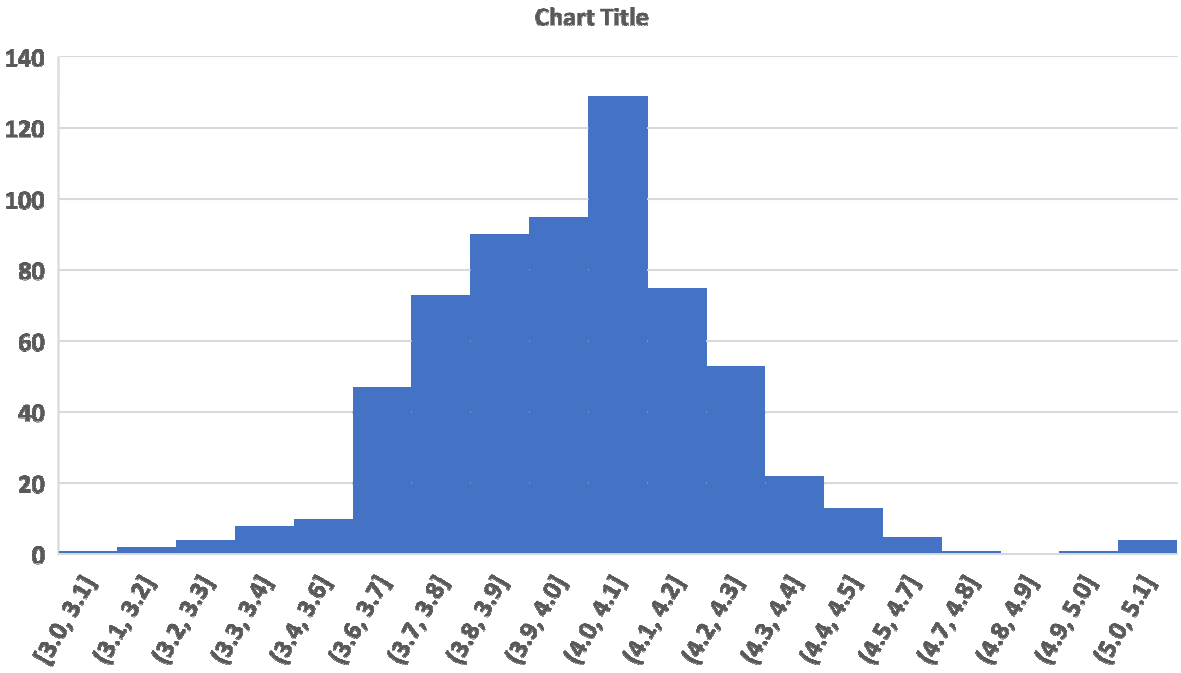
Question 8. Class attendance: According to you, what is the rate of class attendance, in percentage of the total number of registered students



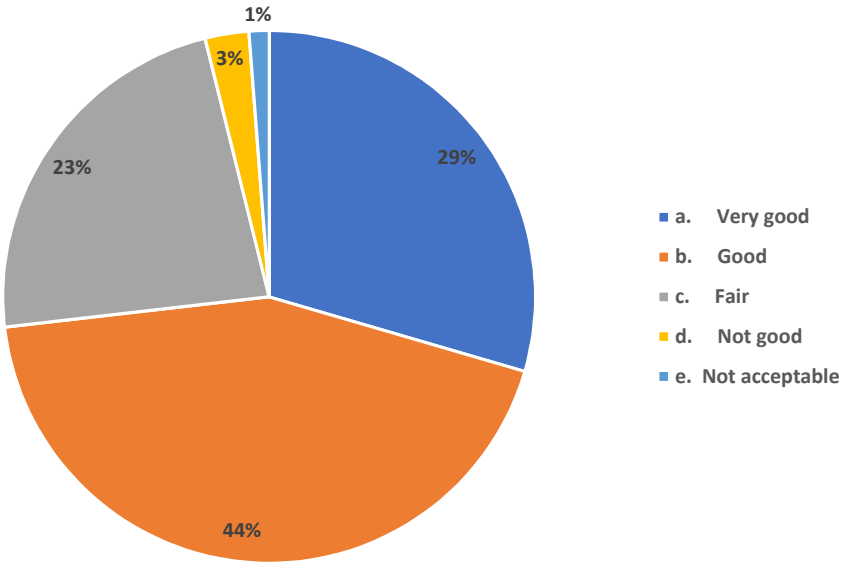


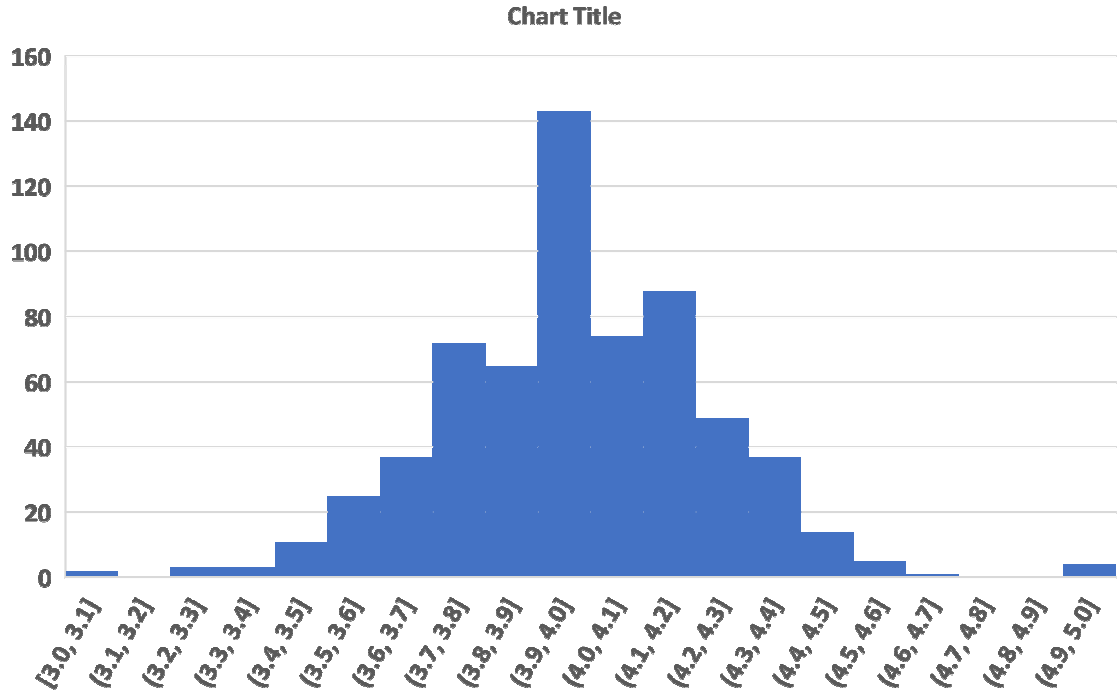
Question 9. Lecturer's ethics. How do you feel about the lecturer ethics, responsibility and fairness



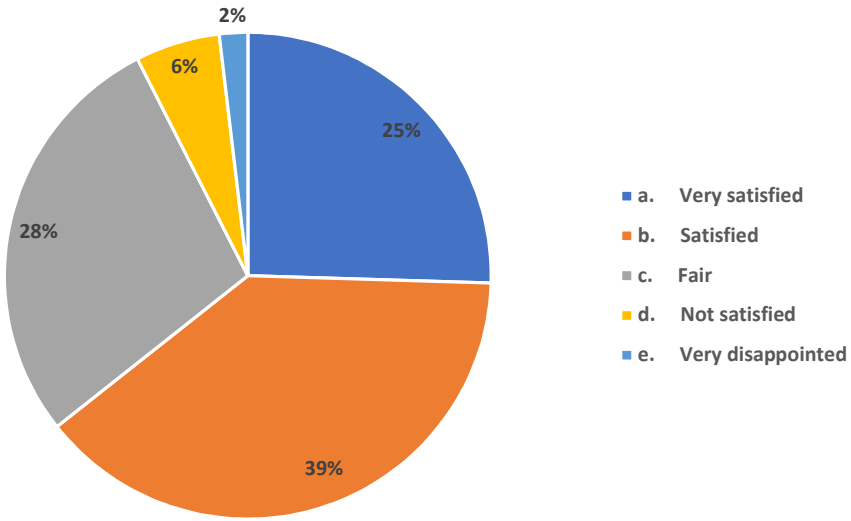


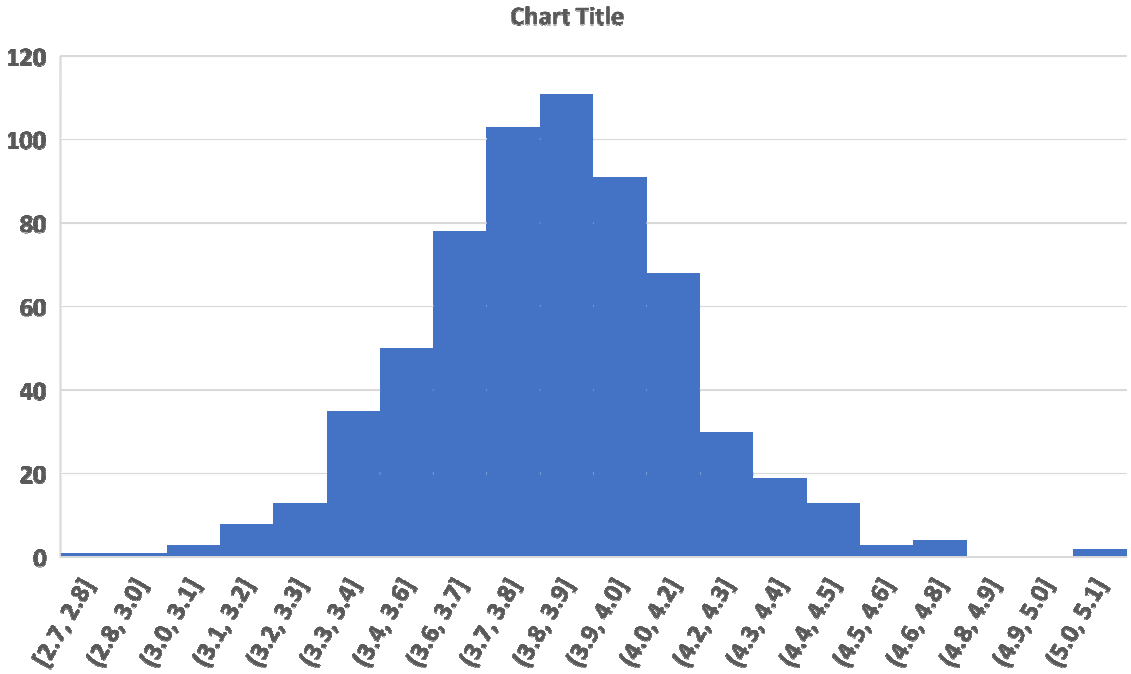
Question 10. Punctuality. Rate the lecturer punctuality



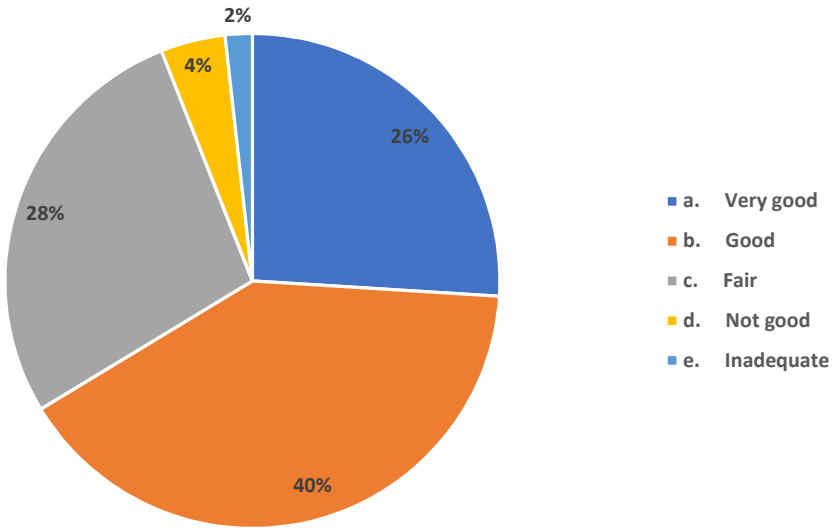


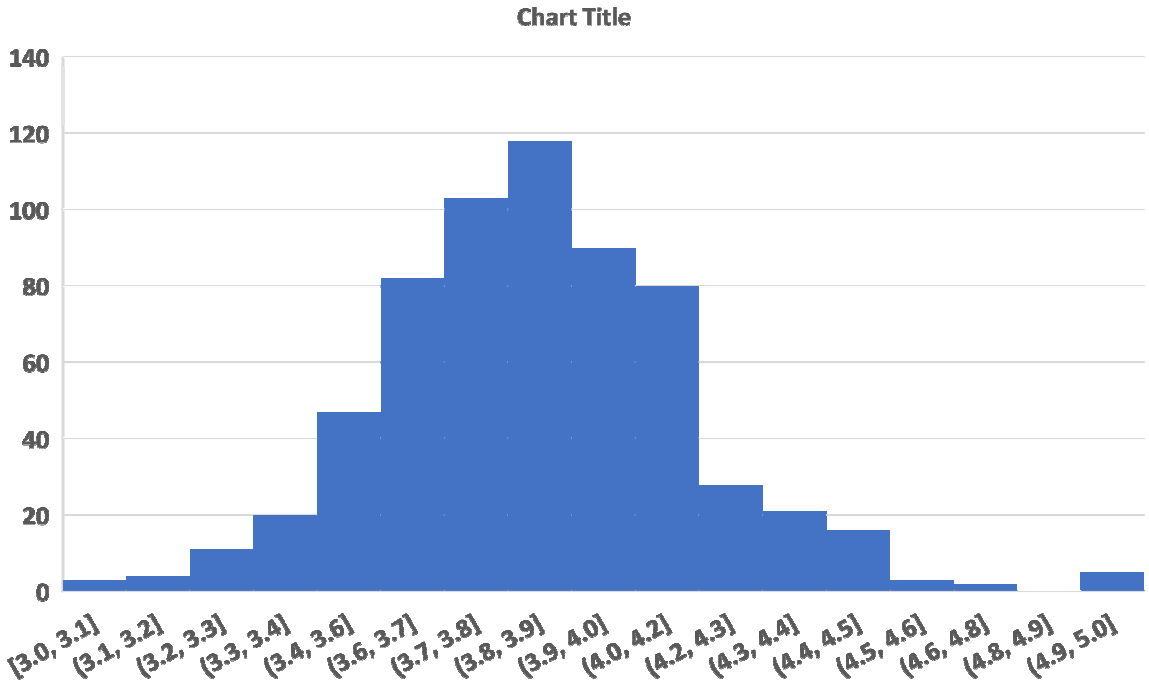
Question 11. Personal progress. Are you satisfied with your progress, in comparison with your effort and expectation



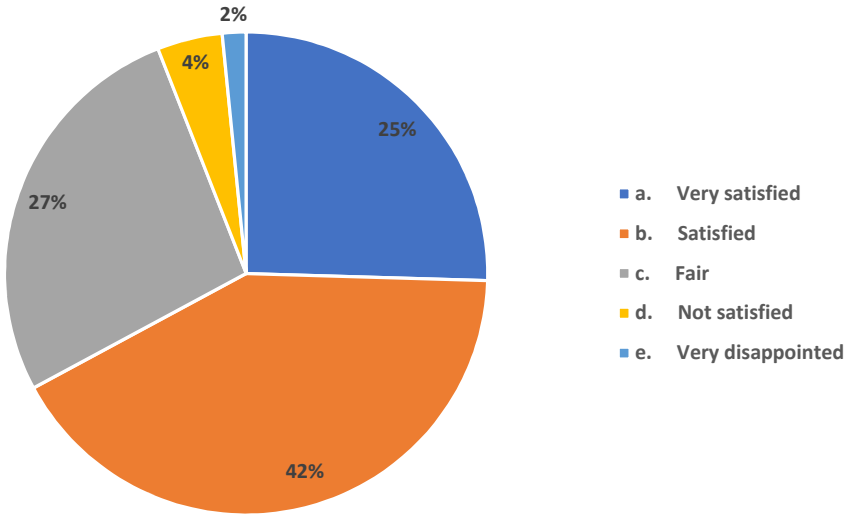


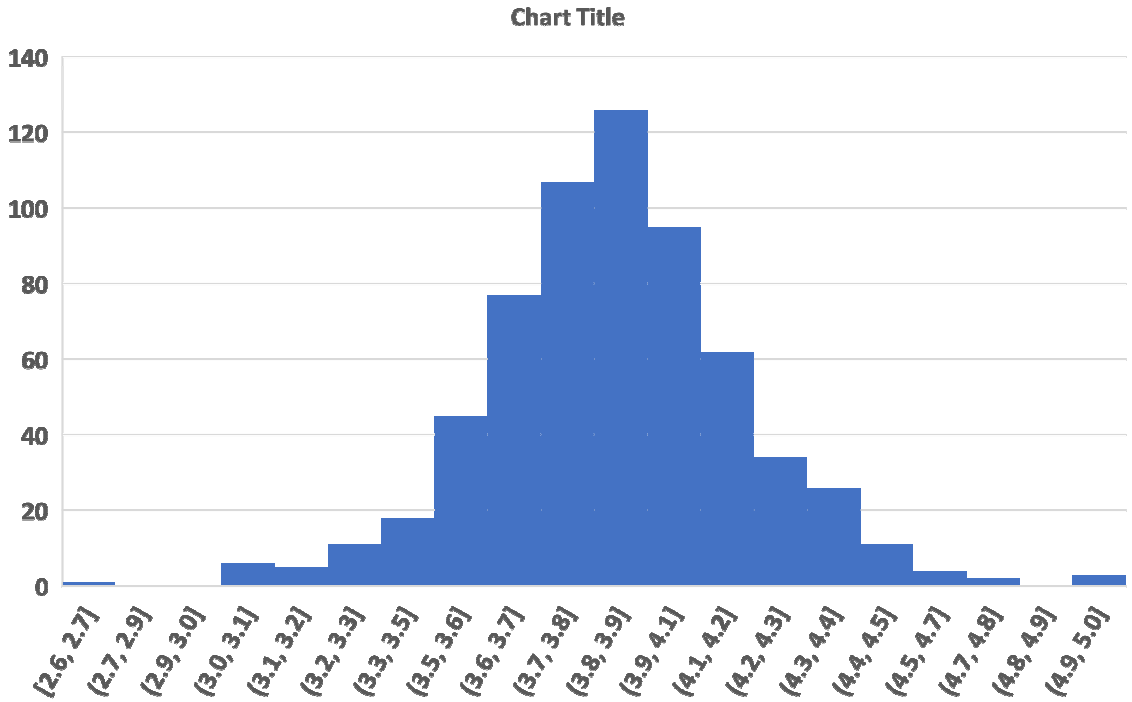
Question 12. Exam and test: How do you rate the test methods (its relevance to the course outline and expected outcome)



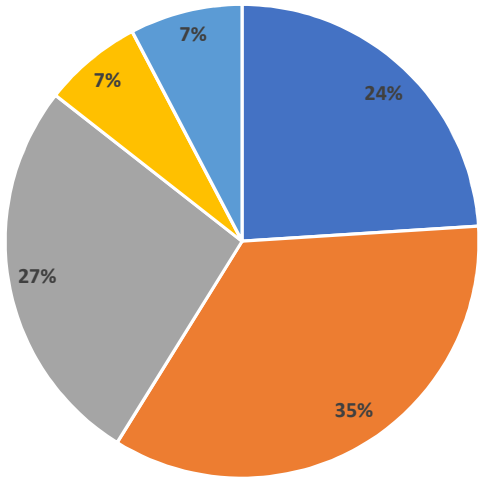


Question 13. Overall assessment. Are you satisfied with the quality and effectiveness of this course (or perhaps you could have learnt the course entirely yourself)

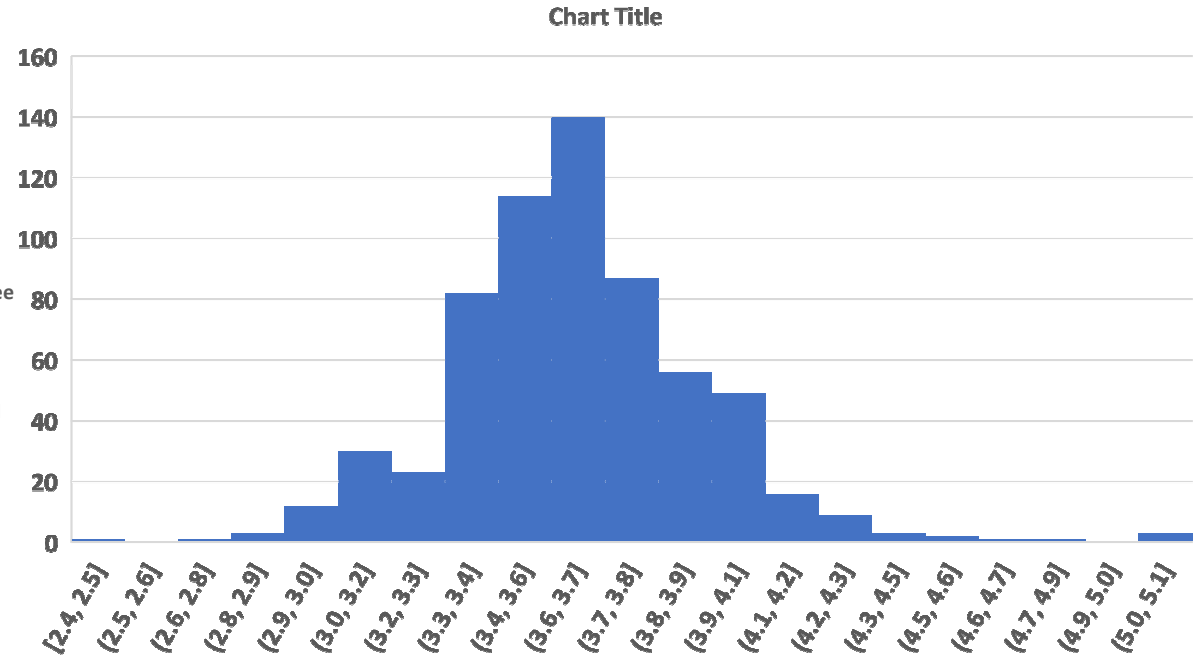




Question 14. B-Learning: Do you agree that one part or all of this course content can be made online?



a. Completely agree
b. Agree
c. Whatever
d. Not very agreed
e. I don't agree



HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY
QUALITY ASSURANCE CENTER

CLASSROOM OBSERVATION FORM

Faculty/School:……..

Type of classroom observation **Announced: ☐** **Unannounced: ☐**

I. Information of Staff:

Name :.....Academic title:.....Department:.....

Subject code:.....Subject name:…….Class : .....Place:.....

II. Information of Observers:

Name…….……. Academic title:……...Department:……

Level 1 – NOT APPLICABLE; 2 – BELOW THE AVERAGE; 3 – AVERAGE; 4 – CREDIT; Mức 5 – EXCELLENT

No.	Content rated	Level 1	2	3	4	Level 5
I	**Group 1. Pedagogy**					
1	Manage and cover classes	☐	☐	☐	☐	☐
2	Method of communicating clearly, clearly	☐	☐	☐	☐	☐
3	Teaching facilities (tables or / and projectors) are used in an effective combination	☐	☐	☐	☐	☐
4	Active teaching methods, attract students	☐	☐	☐	☐	☐
5	Time allocation of logical lessons (theory, for example, troubleshooting ...)	☐	☐	☐	☐	☐
II	**Group 2. Specialty**					
6	The lecture content fits with signed proposal of Faculty/School	☐	☐	☐	☐	☐
7	Logical integration of the lecture	☐	☐	☐	☐	☐
8	Ability of lecture cover	☐	☐	☐	☐	☐
9	The accuracy of the lesson information communicated to the student	☐	☐	☐	☐	☐
10	Students are taught to self-study (homework, research questions, reference documents)	☐	☐	☐	☐	☐
II	**Group 3: Assessment of lectures using teaching aids (*)**					
11	Format: Font, font size large enough, easy to see; the color used has the appropriate contrast; Images, effects, sounds are used sensibly, not abuse ...	☐	☐	☐	☐	☐
12	Content: To meet the goal of the lesson, emphasis of main point, each slide has corresponding topic name	☐	☐	☐	☐	☐
13	Teaching aids: have prepared materials corresponding to projected contents	☐	☐	☐	☐	☐
14	Effective teaching: Attract attention and excitement of students, enhance interaction in the classroom, make students more receptive.	☐	☐	☐	☐	☐
15	Technique used: Proficient use, harmonious combination of teaching aids.	☐	☐	☐	☐	☐

(*): *Only evaluate this content when the lecture uses teaching aids*

GENERAL COMMENT

Pedagogy::

Specialty:

Usage effectiveness of teaching aids(*):

GENERAL ASSESSMENT:

Pedagogy : Level …/5;

Specialty : Level …/5;

Usage effectiveness of teaching aids: Level …/5;

..., day month year 20

Assessor
(Signature and full name)

(*): *Only evaluate this content when the lecture uses teaching aids*

HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY
QUALITY ASSURANCE CENTER

EXPERIMENT & PRACTICE OBSERVATION FORM

Faculty/School:……..

Type of classroom observation **Announced: ☐** **Unannounced: ☐**

I. Information of Staff:

Name :.....Academic title:.....Department:.....

Subject name:.....Subject code:……Class : .....Time: ……..Place:.....

II. Information of Observers:

Name…….…… Academic title:……...Department:……

Level 1 – NOT APPLICABLE; 2 – BELOW THE AVERAGE; 3 – AVERAGE; 4 – CREDIT; Mức 5 – EXCELLENT

No.	Content rated	Level 1	2	3	4	Level 5
I	**Group 1. Pedagogy**					
1	Manage and cover classes	☐	☐	☐	☐	☐
2	Method of communicating clearly, clearly	☐	☐	☐	☐	☐
3	Teaching facilities (tables or / and projectors) are used in an effective combination	☐	☐	☐	☐	☐
4	Active teaching methods, attract students	☐	☐	☐	☐	☐
5	Experimental and practical organization for ensuring goals	☐	☐	☐	☐	☐
II	**Group 2. Specialty**					
6	Equipment and tool are prepared well for lesson	☐	☐	☐	☐	☐
7	Experimental and practical guide fits with lecture contents	☐	☐	☐	☐	☐
8	The lecture content fits with signed proposal of Faculty/School	☐	☐	☐	☐	☐
9	Sequence of experimental and practical steps is logic and scientific	☐	☐	☐	☐	☐
10	Students are taught to self-study (homework, research questions, reference documents)	☐	☐	☐	☐	☐
11	Ensure safety for people and equipment	☐	☐	☐	☐	☐

III. GENERAL COMMENT

1. Pedagogy::

2.Specialty:

IV. GENERAL ASSESSMENT:
Pedagogy : Level …/5;

Specialty : Level …/5;

..., day month year 20

Assessor
(Signature and full name)