



**CARREER GUIDELINES
STUDENT OF BIOLOGY DEPARTMENT**



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INTRODUCTION

The guidelines of career is written to provide information to student and alumni of Biology Department UB so that they understand the profession of biologist and the competence needed in the profession. This book gives description about profile of Biology graduates, kinds, and profession as well the competence needed for the profession. Since the competence may change, therefore this book is open-change.

We would like to present a gratitude to Prof. Dr. Yatim Riyanto, M.Pd, who has given consultation and information for competency needed in stakeholder, Drs. Bahrul Ulum, HRD of Nestle Ltd who have given presentation and simulation of interview to the students and alumni, all stakeholders and alumni who have participated in questionnaire test, and other parties who helped this book writing.

Hopefully, this book is beneficial for the enhancement of link and match between Biology Department and job world (stakeholder) as the manifestation to development of high quality human resources.

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Writer

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INTRODUCTION

1.1. Background

Biology department as the integral part of high education system is supposed to become an institution that can produce high quality graduates needed in job world. Job opportunity in formal institution as civil servant, national company, private company, is getting less and it has tight competition. Therefore, Biology graduates should have good-appropriate provision in job world.

To answer this challenge, Biology Department will expand competence needed to face the job world. The step done is the mapping of graduate profile and competence needed in stakeholder by doing tracking and analysis of stakeholder feedback. The result of tracking is used as the foundation of drawing graduate profile and competence. Information about the profile and competence that are relevant are the foundation of this book writing.

Information in this career book will be integrated in carrier development system (CDS) and academic management as the basic of inter-discipliner learning regulation. It gives opportunity to students in getting such competence by taking a subject of other study program that is relevant in job world.

1.2. Objective

This book is written to provide information to student, alumni, and lecturer at Biology Department UB, so that they can understand Biology profession and know the competence needed by a profession.

1.3. Significance

Information available in this book hopefully could:

1. Give contribution to the development of academic skill, soft skill, and technical skill that are owned by student and alumni in order to plan their future based on their potency and competency.
2. Provide guidelines to lecturer in developing subject and learning process supporting soft skill, academic skill, and technical skill needed in job world.
3. Give guidelines to the head of department in making policy of science discipline accross lecture.

1.4. Writing Basic

This book is written as the implementation of strategic plan UB in 2006-2011 about the curriculum development for the subject integration program in order to achieve the competence holistically and comprehensively (BAPSI, 2006)

CHAPTER II

BIOLOGY AND GRADUATE PROFILE

2.1. Why Biology needed?

Human future depends on the science development, including Biology. In recent years, molecular and conservation biology are one of the fast growing sciences instead of others. They mostly become the basic of biotechnology development, an interesting study since it raises positive hope of the food availability and medical technology development.

Many environmental issues occurred in Indonesia recently such as forest damage, illegal logging, pollution, water quality and quantity change, and climate change are bad issues giving great impact to either Indonesia or other countries. The life quality is decreasing for the environment damage such as flood and slide caused by human. Moreover, the pursuit sent by international institutions for the environmental improvement has not been anticipated well. Besides, Indonesia is one of the big countries having wealth of diversity yet used properly. Therefore, a biologist has a big role in supporting technology development to make good living.

2.2. Stakeholder that needs Biology graduate

From the survey, some institutions that need biology graduates are

1. Research institution: LIPI, National Park (Bromo Tengger Semeru), Balai Benih Ikan (Institution for Fish seed), Balai Penelitian Kacang-Kacangan dan Biji-Bijian (Institution for Nut and Seed), and Balai Penelitian Tanaman Kapas dan Serat (Insitution for Cotton and Fiber).
2. Industry: Nestle Ltd, Otsuka Ltd, Bio Farma Ltd, AIT Biotech Ltd, and Bintan Resort Cakrawala Ltd.
3. Education institution: Universities, Elementary and High schools.
4. Government institution: Department of Education, Forestry, etc.
5. Environmental institution: LEM, Profauna/P-WEC, Sehati foundation, and Raban Foundation.
6. Entrepreneurship.

Softskill needed in stakeholder

Soft skill	Rank
Creative, Innovative and rapidly shifting	1
Honest, patient, and optimist	2
Being able to analyze and solve problems	3
Being able to work in group	4
Being able to control and adapt	5
Curious	6
Suitability of background of study	7
Oral communication	8
Being able to learn new things	9
Skill suitability	10
Having vision	11
Being able to decide	12
Management ability	13
Work under pressure	14
Polite, humorist, and friendly	15

Good at Negotiation	16
Written communication	17
Achievement index	18
Developing an institution	19
Good at English	20

Source: result of tracer study that was conducted by Biology Department to 25 stakeholders in June 2008

2.3. Profile of Biology Graduates

2.3.1. Main Competence

- Having good understanding about Modern Biology Concept and Conservation
- Having basic ability to develop the competence to be an entrepreneur.
- Being able to conduct research in developing human welfare and social service.
- Having good academic.
- Being able to communicate in English both oral and written and operating computer.

2.3.2. Description of Biology Graduates and Alumni

Biology graduates in recent five years (2003-2008) have good academic that is shown by GPA average is 3, 16 and TOEFL>450 rises 34%, computer skill (programming, office, and statistic analysis) rises 48%. In recent five years, 66% of male graduates and 52% of female were accepted in stakeholder. Waiting time for a job was less than 6 months was around 34 %. On the other hand, entrepreneurship ability is minus. Considering Indonesian economy, appreciation to Biology graduates and natural resource conservation, so entrepreneurship must be increased (Anonymous 1, 2007)

In general, Biology graduates mostly work in East Java. Since the existence of Biology Department UB that is still new, people do not really know about Biology graduates well. However, in some aspects, Biology UB has better quality (cognitive and research) than Institute of Technology Bandung, UGM, and IPB. It is proved by student and alumni achievement in scientific work competition and national research grant (PKM, Bogasari Nugraha).

One of the weakness belong to Biology graduates in stakeholder is soft skill problems (less confidence, bad leadership, not good at taking a risk, work together, less independent, less motivation and not really good at English) (Anonym 3, 2007).

CHAPTER III

KINDS AND DESCRIPTION OF BIOLOGIST PROFESSION

3.1. Profession in Industry

Biology graduates have high opportunity in stake holder because of the various job in which they can take a part. Some kinds of profession and job description are described below. It is a tracer study in stakeholder and benchmarking to some information of job vacancy. (Anonymous 3, 2007).

3.1.1. Kinds and Description of Profession in Industry:

a. **Becoming *Microbiology Laboratory Operator***

To test the quality of raw materials and final product in laboratory

b. **Becoming *Microbiology Laboratory supervisor***

- To manage the control of quality of raw material and final product, to process control quality system as a regulation on microbiology.

- To give guidance of quality test

c. **Staff of *research and development***

- To identify the raw materials

- To collect the data for policy

- To conduct research and development of product

d. **Staff of *quality control***

- To make sure that production process, quality of raw material and final product, package material and package process are running well so the result is appropriate with the standard.

- To make sure the availability of raw materials and package.

- Being able to analyze and work under pressure

e. ***Plant Technician***

To manage the operational process and drying process, maintenance of plant.

f. ***Entomology operator/specialist***

- To be a technician of anti creep in before and after building construction (basement and real estate). Fumigator (fumigant gas applicator) to disinfect agriculture product, ship, plane, machines, etc

- *Pest Management* to disinfect and to prevent contamination in industry with category ISO/HACCP
Hygiene Pest Control: Rat , cockroach, insect in hotel, restaurant, industry, etc.

g. **Waste Control**

- To operate waste control installation

- To control waste control process

3.1.2. Competence Needed in Industry:

- Being able to test the quality of raw material and final product.
- Being able to analyze the evaluation of raw material and final product quality.
- Knowing about Quality Regulation (ISO/International Standard Organization, CPOB/Cara Produksi Obat yang Baik, SUK/Satuan penjaminan mutu, HACC/Hazard Analysis Critical and Control Point)

- Understanding the microbe contribution in providing food product and industry, factors that impact microbe growth in providing product and production process.
- To be able to process *quality control*/according to regulation in microbiology.
- To give guidance for quality test.
- Having knowledge and skill about identifying raw materials
- Having knowledge and skill about data collection for policy.
- To conduct research and development of new product.
- To be able to control production process, raw material and final product quality, package material and packaging.
- Good at analysis
- Working under pressure

Relevant Study:

Quality Control, Microbiology, Pharmacology, animal cell and tissue culture, Plant tissue culture, General Botany, Quality Regulation (ISO/International Standard Organization, CPOB/Cara Produksi Obat yang Baik, SUK 3/unit for quality, HACCP/Hazard Analysis Critical and Control Point, quality standard for food), Molecular Biology, Cell Biology, entrepreneurship, English. Vaccine, Basic Biology, Immunology, Formulation, data analysis, cGMP/ *Good Manufacturing Practices* Quality System

3.1.3. Competence of *academic skill, softskill* and *technical skill* in Industry

Competence		Priority Scale
<i>Academic Capacity</i>		
	Suitability of background of study	1
	Suitability of skill	3
	GPA	4
	English ability	5
	Learning new things	2
<i>Personality capacity</i>		
	Creative, innovative and mutable	1
	Working under pressure	3
	Entrepreneurship skill	5
	Honest, patient, optimist	2
	Polite, friendly, and humorist	4
<i>Leadership</i>		
	Making decision	2
	Having future vision	4
	Developing institution	5
	Ability to analyze and solve problems	1
	Management skill	3
<i>Interpersonal relation</i>		
	Good at oral communication	3
	Good at written communication	5
	Working together	1
	Self control and adapt	2
	Negotiation ability	4
<i>Technique capacity</i>		
	Operating machine	3

	To monitor process and result of production	1
	Good at computer operation, Information technology and data process	4
	To test the input and output quality	2

Source: result of tracer study in 7 industries on June 2008

3.2. Profession of Researcher

3.2.1. Description

- To design the research
- To conduct research and finding in a certain field.
- To publish scientific works in seminar, journals and books.
- To develop science and technology
- To develop technology works
- To develop research finding to be patent

3.2.2. Competence needed in research:

- To be able to explain and apply the Biology theory and laws in research method and scientific writing
- Skill to prepare and conduct research, interpret research finding in oral and written media, and evaluate the understanding theoretically.
- Ability to present the research well in seminar.
- Ability to publish the research finding in seminar, journals and books.
- To develop science and technology.
- Ability to develop technology works
- Skill to develop research finding to be patent

Relevant Study:

Plant Purification, Ecophysiology, Biotechnology, Plant Tissue Culture, General Botany, Taxonomy, Conservation Biology, Plant Physiology, Ethnobotany, Ecology, Evolution, Molecular Biology, Cell Biology, Ecotoxicology, Animal Reproduction, Vegetation analysis, Community analysis, Biodiversity analysis, mapping and genetics.

3.2.3. Competence of *academic skill, softskill* dan *technical skill* needed in research

Competence		Priority scale
<i>Academic capacity</i>		
	Suitability of background of study	1
	Suitability of skill	2
	GPA	5
	English ability	4
	Learning new things	3
<i>Personality capacity</i>		
	Creative, innovative, mutable	1
	Working under pressure	4
	Entrepreneurship	3
	Honest, patient, optimist	2
	Polite, humorist, friendly	5
<i>Leadership</i>		
	Making decision	2

	Future vision	3
	Developing institution	5
	Analyze and solve problems	4
	Management skill	1
<i>Interpersonal relation</i>		
	Oral communication	2
	Written communication	3
	Working together	1
	Self control and adapt	4
	Good at negotiation	5
<i>Technique capacity</i>		
	Scientific skill (choose and design method)	1
	Operating computer and processing data	2
	Information technology	3
	To control class and teaching plan and material	5
	To plan agenda, proposal and report	4
	<i>Bioassay skill</i>	6

Source: result of *tracer study* in five research institutions on June 2008

3.3. Profession of Academic and Government Officer

3.3.1 Kinds and Description

a. Academic (teacher and lecturer)

- To educate students and public
- To develop science and present it to society
- To conduct research
- To plan teaching material, learning method and system.
- To give social service

b. Government Officer

- To give public service
- To help government in many aspects
- To write proposal, agenda and report.

3.3.2. Competence and Skill Needed

Academic and Government Officer:

- To be able to develop skill in sending information and educate students, college students and public.
- Developing science and present to public.
- Ability to conduct research
- Skill to plan teaching material, learning method and system.
- Being able to give public service
- Being able to understand people characteristic and give service
- To be able to develop skill in helping government
- Ability to write proposal, agenda and report

Relevant Study:

Social Psychology, Psychology, Education Management, Medical science, Ethic education, plant purification, Ecophysiology, Biotechnology, plant tissue culture, general botany, taxonomy, conservation biology, plant physiology, ethnobotany, ecology, evolution, molecular biology, cell biology, ecotoxicology, animal reproduction, vegetation analysis, Community analysis, Biodiversity analysis, mapping and genetics.

3.3.3. Competence of *academic skill, softskill* and *technical skill* needed

Competence		Priority scale
<i>Academic capacity</i>		
	Suitability of background of study	2
	Suitability of skill	3
	GPA	4
	English ability	5
	Learning new things	1
<i>Personality capacity</i>		
	Creative, innovative, mutable	1
	Working under pressure	3
	Entrepreneurship	5
	Honest, patient, optimist	2
	Polite, humorist, friendly	4
<i>Leadership</i>		
	Making decision	5
	Future vision	1
	Developing institution	4
	Analyze and solve problems	2
	Management skill	3
<i>Interpersonal relation</i>		
	Oral communication	3
	Written communication	4
	Working together	1
	Self control and adapt	2
	Good at negotiation	5
<i>Technique capacity</i>		
	Scientific skill (choose and design method)	5
	Operating computer and processing data	1
	Information technology	2
	To control class and teaching plan and material	4
	To plan agenda, proposal and report	3
	<i>Bioassay skill</i>	6

Source: result of *tracer study* in education and government in June 2008

3.4. Profession of Pioneer and Public Motivator (activist)**3.4.1. Kinds and Description****a. As a Consultant**

- Providing education and training to the public by conveying information and education to the public how to have the mindset, insights and actions that contribute positively to environmental sustainability
- Conducting conservation and protection of flora, fauna and natural resources
- Preparing an agenda and a strategy to build support for policy in term of environment

b. As Researcher and Specialist

- Conducting a survey, looking for data, research of environmental issues related to certain fields, for example in forestry research, water resources, biodiversity, etc.
- Being a specialist in a particular field of expertise

c. Field operator

- Motivate communities to field action
- Did the job / field action
- Assist the implementation of the agenda / program community development

d. Analyst of Justification Technique

- Providing advice and input analysis contained in the program development plan
- Designing innovative programs

3.4.2. Competence of Science Needed

- Ability to provide education and guidance to the community in a way to inform and educate the general public how to have the mindset, insights and actions that contribute positively to environmental sustainability
- Skill to develop activities of conservation and protection of flora, fauna and natural resources
- Being able to set an agenda and a strategy to build support for policy in term of environment
- Ability to do a survey, looking for data, research environmental issues related to their respective fields, for example in the study of forestry, water resources, biodiversity, etc.
- Ability to become a specialist in a particular field of expertise
- Skill to develop leadership skills to motivate the community to field action
- Being able to design innovative programs

Relevant Study:

Cultural Anthropology, Communication technique, technology information, Environmental Biology, Wild animal research, social psychology, biology control, water ecosystem management, Taxonomy, Ecotoxicology, Animal Reproduction, Vegetation analysis, Community analysis, Biodiversity analysis, mapping and genetics.

3.4.3. Competence of *academic skill, softskill* and *technical skill*

Competence		Priority scale
<i>Academic capacity</i>		
	Suitability of background of study	2
	Suitability of skill	3

	GPA	4
	English ability	1
	Learning new things	5
<i>Personality capacity</i>		
	Creative, innovative, mutable	4
	Working under pressure	2
	Entrepreneurship	5
	Honest, patient, optimist	1
	Polite, humorist, friendly	3
<i>Leadership</i>		
	Making decision	5
	Future vision	1
	Developing institution	4
	Analyze and solve problems	2
	Management skill	3
<i>Interpersonal relation</i>		
	Oral communication	1
	Written communication	4
	Working together	2
	Self control and adapt	3
	Good at negotiation	5
<i>Technique capacity</i>		
	Scientific skill (choose and design method)	4
	Operating computer and processing data	2
	Information technology	5
	To control class and teaching plan and material	3
	To plan agenda, proposal and report	1

3.5. Profession of Entrepreneurship

3.5.1. Description

- Building a Network / business relations, to improve sales performance or to seek business opportunities.
- Looking for venture capital, creating and managing finances
- Develop short-term and long-term plans and business strategy
- Being a manager of a business
- Finding sources of raw materials quality
- Supervision of business systems
- Building healthy communication to the multi-stakeholder

3.5.2. Competence of Science needed:

- Ability in Building a Network / business relations, to improve sales performance or to seek business opportunities.
- Looking for venture capital, creating and managing finances
- Skill to develop short-term and long-term plans and business strategy
- Skill of Being a manager of a business
- Ability in Finding sources of raw materials quality
- Ability for Supervision of business systems

- Being able to build healthy communication to the multi-stakeholder

Relevant Study:

Society analysis, leadership communication technique, entrepreneurship, business opportunity, production process, social psychology, *Marketing, Sales, Accounting, Communication & Management.*

3.5.3. Competence of *academic skill, softskill* dan *technical skill* Needed

Competence		Priority scale
<i>Academic capacity</i>		
	Suitability of background of study	4
	Suitability of skill	2
	GPA	5
	English ability	3
	Learning new things	1
<i>Personality capacity</i>		
	Creative, innovative, mutable	2
	Working under pressure	1
	Entrepreneurship	5
	Honest, patient, optimist	3
	Polite, humorist, friendly	4
<i>Leadership</i>		
	Making decision	3
	Future vision	4
	Developing institution	1
	Analyze and solve problems	2
	Management skill	5
<i>Interpersonal relation</i>		
	Oral communication	1
	Written communication	4
	Working together	2
	Self control and adapt	3
	Good at negotiation	5
<i>Technique capacity</i>		
	Operating system	6
	Operating computer and process data	5
	Operating information technology	4
	Marketing	1
	Plans and finance	3

CHAPTER IV

PROFESSION OF ALUMNI

Since its foundation in 1987, the Department of Biology has graduated more than 500 alumni in various working world. From the results of tracer study conducted continuously for more than five years were traced to a variety of fields that can be classified in five main professions such as: Researchers, Employees of companies / industries, lecturer, teacher, Laboratory Analysts, government officials, NGOs and entrepreneurs.

4.1. Researcher:

LIPI (Purwodadi Park), LIPI (KR Eka Karya, Bali), LIPI Limnologi, LIPI Oseonografi, BPPT Serpong

4.2. Company Employees:

Nestle Ltd. Antar Mitra Sembada Surabaya, Ltd. Bio Pharma, Ltd. Citra Nusa Insan Cemerlang, Ltd. Finosol Prima, Ygy, Ltd Mandala, Ltd. Maspion, Ltd. Ocean, Ltd. Orang Tua Group, Ltd. Otsuka Indonesia, Ltd Pulau Sambu Kuala Enok, Ltd Pulau Sambu Kuala Enok, Riau, Perusahaan Air Minum Alamo, Perusahaan Asuransi Bintang, Perusahaan Farmasi, Jkt, Perusaan Swasta di Batam, Ltd Andi Champion Muffler Indonesia, Biofund, Mlg, Ltd. Cipta Andita, Ltd. Tiara Perdana Jakarta Utara, Ltd Agro Multi Biotek, Ltd. Sehat Sukses Makmur, Ltd. Miwon Ltd.

4.3. Company Employee as Quality Control

Sumber Tani Ltd, QC Gudang Garam, Ltd QC Bromo Tirta Lestari Ltd, QC Eka Timur Raya, Ltd Nongkojajar.

4.4. Lecturer and teacher

Lecturer of University of Brawijaya, Unlam, Stain Malang, Medical faculty UB. teacher at Alfalah Surabaya, teachers of Bina Vokalia, Malang, teacher of SMAN 3, SMAN 4, SMAK Dempo Malang, MA Singosari, MAN Kembang Sawit, Madiun, SMA 1 Bangorejo, SMIP Bina Cendika Malang, SMP, SMPN 1 Tempeh Lumajang, LBB Jakarta, LBB Primagama, LBB Primagama Surabaya, LBB Primagama, Serang, Teacher of KUMON Surabaya, LBB Primagama, Primagama, YLC.

4.5. Bank Employee

BRI Tarakan, Bank HSBC, BRI Lumajang, BI Jakarta

4.6. Laboratory Analysit

Doctor assistant in Surabaya, SMA, SMUN 3 Malang, lab assistant. Biologi SMUN 4 Malang, teacher, Operator, Geography Information system.

4.7. Government Official

Bappedal, Malang government, Pasuruhan government, TNI

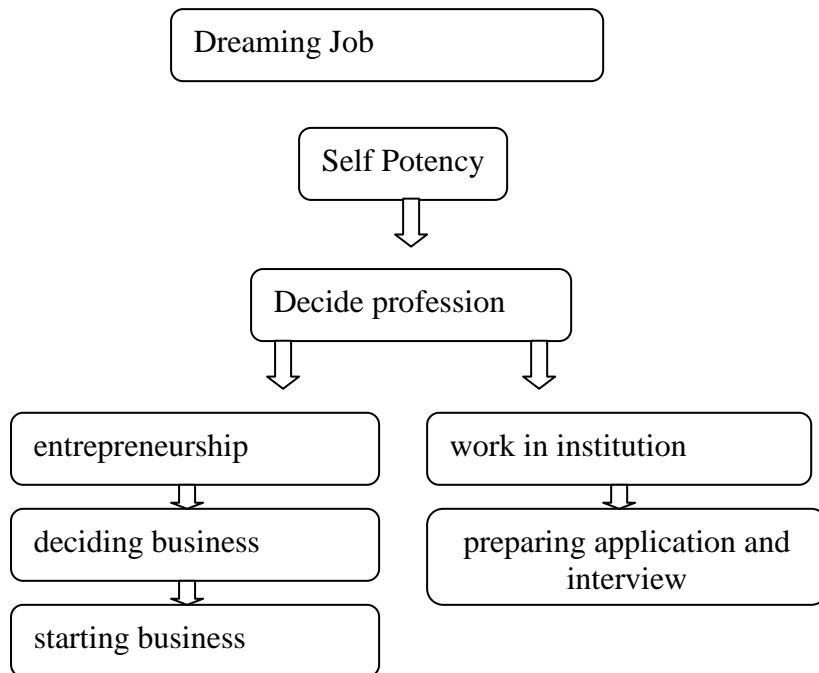
4.8. Public Service Institution

Local Environmental Management, Profauna/P-WEC, LSM (Service institution) LingkunganHidup, LSM in Surabaya, LSM in Bogor, LSM in Jakarta

4.9. Enterpreneurship

CHAPTER V STRATEGY OF GETTING INTO JOB WORLD

Each graduate definitely want to get a decent job, and according to which all aspire after completing his studies. However many job seekers are not prepared to enter the workforce with a culture and a different system than the college culture. It leads to job seekers do not know what they should do when competing for suitable work. In fact, by the time they had graduated, they still do not know what they should do. To successfully enter the workforce, a graduate should know beforehand what they should prepare.



5.1. Dreaming Job

A graduate entering the college has set a goal or desired type of profession. This is very important so that graduates can organize the next strategy. Desired goals should be tailored to the potential or ability, respectively, both intellectual (IQ), emotional intelligence (EQ) and spiritual intelligence (SQ), the ability of the economy, and other capabilities that support these goals.

In setting goals, graduates should also consider the labor market which are much needed by the community, for example, today many prospective students flock to be a teacher because the field is wide opened by the government and the guarantee of life seems better with the Law of Teachers and Lecturers. In addition, business opportunities and industrial world also has a tendency to increase. It must be considered by Biology students.

5.2. What Must be Prepared?

The first step is to be prepared by the graduates is to follow the learning process in higher education as good as possible, so that students not only learn the material, but also learn the life skill (especially soft skills) needed in the future. Life skill (especially soft skills) are often not taught in the curriculum, so that students have to learn independently through existing organizations at campus and working with another student.

After steps of achieving the goals set, the graduates should prepare certain things to meet the existing requirements. If after graduation they want to become an employee, they should prepare the requirements. From the mental preparation, preparation for written tests, psychological tests, the interview and so forth.

5.3. Interview

Tampil apa adanya tanpa persiapan sama sekali adalah kesalahan terbesar mereka yang datang untuk proses wawancara. No preparation at all is the biggest mistake if they come to the interview process. The interview is an important step for both parties to get to know one another. Therefore, good preparation will give more satisfactory results. A few things to note when the interview is as follows:

Talk in detail during the interview. Find out more about the positions on offer, the company and the products / services offered. The more graduates know about the position you are applying for, the better. In addition, the preparation will make graduates appear confidently as they are asked about specific matters related to the company or the job.

Bring copies of resume. The goal is for back up and keep watch, just in case needed.

Showing eye contact. When interviewed, make eye contact, do not look down. Applicants should look the interviewer in the eye every time you want to give an answer. By doing this, applicants will be considered as someone who is confident and focused on the goal. In addition applicants must demonstrate an interest and enthusiasm for the company.

Dressed professionally. The meaning of the word 'professional' here can mean many things, especially in today's times. If applicants are confused, just wear black and white suit as it is commonly worn by people who apply for jobs. The most important thing is to look neat and polite.

Answer the question within 60 seconds. Any questions can be answered long or short. Applicants should use about one minute to answer each question. The answer given must be clear, unequivocal, and right on target.

Listen and answer the questions directly. If applicants feel there are things that are not clear. Applicants can ask directly for clarification. It is also useful to avoid future misunderstandings.

Explain achievement ever made. Do not ever hesitate to explain what the project applicant ever done in previous company. Preparing themselves to do the explanation will affect how the applicant's performance in the coveted job.

Asking. What is meant here is not to ask questions cliché. The critical and sharp questions will demonstrate that the applicant is a proactive (and gives the impression that the applicant is the right person and have a vision to promote the company).

5.4. Job Application and CV Writing

One of person's success through the world of work is the ability to describe himself so that the potential can be determined by the company. For applicants who work or want another the jobs, writing job application letter is one of the steps to be followed.

Often, the application letter prepared by the applicant is unattractive. The condition may lead to the applicants not received by the company. It's good, before sending an application letter, applicants should notice whether the vacancy is in line with its potential. This is done to adjust the contents contained in the letter. Therefore, making an application letter is required to be segregated art letter prepared not end up in the trash.

There are two things to note here. First, the letter should be in accordance with the rules, it is associated with physical mail, letter structure, and appearance. Second, the letter should have inner beauty, it is related to the way of writing, choice of language and meaning to be conveyed

Application letter must be well conceived and memorable to the company. It should be avoided drafting a letter that has been formatted in standard or plagiarized outright from the book. The letter sought to be brief, factual and interesting with clear language and attractive appearance in meaning: neat (no errors in spelling or grammar), clean (black ink on white paper, no such correction pen, it should be typed and reprint only) and always trying addressed to a certain person (name and / or position specific). An application is only one page maximum, is always accompanied by a resume / CV (Curriculum vitae) and it gives a positive first impression about applicants.

In preparing Curriculum Vitae (CV), they should consider several things. Here are some important things that should be considered in making the Curriculum Vitae (CV), for companies / institutions / agencies in Indonesia (both for corporate / local, national, and international).

5.4.1. Writing order of Curriculum Vitae (Resume, CV)

1. Identity

Identity includes: Full Name, Gender, Place and Date of Birth, Nationality, Religion, Marital Status, Height and Weight Loss, Full Address, Phone and HP, as well as e-mail (if any). Especially for e-mail, there should be.

2. Education

This section lists the formal education and training / courses have been followed; complete with year in and year graduated, major, level of study, and the name of the institution. The sequence begins formal education first, and the non-formal education (training, courses, etc.).

3.Skill

This section includes a brief description of the applicant's skills relevant to the job applied field. For example, applicants apply for work in the field of microbiology, then it is briefly explained that the applicant understands the general microbiology and food microbiology, used to work using the computer, etc. Of course, the abilities of applicants write to be completely owned. Do not include skills that are not.

4. Work Experience

This section includes a brief description of the applicant's work history at a previous company, complete with rank, position, type of work, achievements (if any), job responsibilities and authorities, as well as the work period, the month and year of starting and ending positions are occupied. The sequence starts from a last job (or a job or position).

5. Organization Experience (if any)

This section lists the relevant organizational experience (corresponding or associated) with the type of job applied. If there is no relevant, just skip this number 5.

6. Work Reference (if any)

If possible, include references, those who could be contacted by the selectors of job application to ask the important things about applicant (usually the name of the employer where the applicant worked before).

Important: In the case of the inclusion of the name of the person who will be used as reference, applicants must be very sure that the person really knows about the applicant and will provide positive information. If in doubt, the applicant does not need to include the job reference (just skip the number 6's).

7. Relevant Experiences (if any)

This section lists other experiences that support the "promotion of the applicant" and should be relevant to the type of job applied. If there are vacancies for the position of computer programmer, then the applicant's experience as Chairman of the RW or badminton champion, of course, irrelevant. So if there is no relevant, just skip this number 7.

5.4.2. Paper, Letter, Photo, and Supporting Documents

1. Use White paper

CV should not use a plain background image (the base image). You should not use the form CV that is sold in stores.

2. Type in Formal Letter

CV should not be handwritten, but typed. Use font sizes and types of standard (black), for example, font type Arial or Times New Roman.

3. Recent Photograph

Attach recent photograph size 3x4 or 4x6. We recommend using a color photograph, and dressed formally (eg suit complete with a tie).

4. Supporting Documents

Attach documents or evidence of the things written in the CV (resume), such as diplomas, transcripts, certificates or awards, etc. (supporting documents in the form of photocopy). Supporting documents attached should not be too many, the most important and relevant.

*Sample of Application
Letter*

Varanus komodoensis
Jl. Veteran Malang
Phone. 0341-575840
HP. 081931880145

To;
Bpk. Priyayi Gondokusumo
Personal Manager
PT. Bagi-bagi Uang
Jl. Raya Surabaya – Malang Km. 55, Pandaan

Regards,

Due to job vacancy information on Jawa Pos Daily Saturday Date August 3, 2008, I intend to apply for a job at the company in the position: Microbiology Lab. operator

I am a graduate of UB Malang, Department of Biology, and I'm waiting to graduate in October 2008. My education covers a wide field of biology, with a concentration in the field of microbiology.

My strength is that I can communicate in English both oral and written, highly motivated, be able to work under pressure and be able to run a computer program as required qualifications.

I hope, for your willingness to allow testing / interviews. I can be reached at phone number 0341-575840.

Yours sincerely,

Varanus komodoensis

Messages from alumni and stakeholders

Bandung E. Suseno, Director of LEM 21-JB-UB Alumni 1987:

Biology graduate must have the ability to learn from Biology, not only studied biology course.

Rosek Nursahid, Chairman JB-UB Alumni Profaun force 1988:

Biology graduate must have good oral communication skills and should be able to implement their knowledge in all aspects of life, because biology is the science of life.

Heroe Prastowo, Supervisor PT. Otsuka, JB-UB Alumni force 1993:

Biology graduate must have the ability and managerial skills, leadership, academic ability, good communication skills, the ability to be creative, and innovation.

Atiroh Nour, Chairman of the Department of Biology Unisma:

Biology graduate should be able to rule the world, the role of undergraduate biology have come to the surface, so that the community can be useful as much as possible. It is time for undergraduate to play an important role in policy development.

Djauhar Asikin BKT Head of Unit, Botanical Purwodadi LIPI:

Biology graduate must have good academic and non-academic skills, a good personality and mature, aspirations to develop themselves and their environment as well as being an agent or a motivator of change.

5.5. Department's Support in planning and career development

To support career planning and development, in collaboration with UB and IKA IKA Faculty of Math and Natural Science, Department of Biology will prepare Career Development System. This system starts from the embryo, form the alumni forum that has lasted. Additionally Biology Department also facilitates communication between alumni and stakeholders. In the meeting, graduate could interact with seniors. It is important to look for employment opportunities that may be opened. In addition, interaction between the alumni and graduate also provides an opportunity to exchange information that is important for career development.

The second support is the availability of a place to share job information to students and alumni, such as through communication boards in the lab and the department. From this activity, the information about the opportunities in the world of work can be seen by all parties.

CHAPTER VI

CLOSING

In order to achieve success in the world of work, one needs competence in accordance with the line of work. The competencies required is not only from academic ability of GPA and technical skills but also soft skills. Soft skills need to be developed is character, personality interesting, creative, innovative, willing to change, to be honest, patient, persistent, able to analyze and solve problems, to work together, able to control themselves, adaptable and curios.

Considering the level of competition for jobs is rising, it is important for students to understand the profession and career in the future. Thus, students can prepare from start to achieve what they want. Information provided in this book is expected to be material for the students to understand the profession of biologist and know the competencies required by each profession.

This book is expected to provide maximum benefits to increase link and match between the Department of Biology as an educational institution with the world of work (stakeholders). This is an effort to develop human resources (HR) quality to increase the competitiveness of nations.

Completion of this book should be done continuously, therefore the writers hope suggestions from all parties.

REFERENCE

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- Oktora, P.S. , 2008. Creating Cover Letters Job and Curriculum Vitae (CV). Vision Media Library.

APPENDIXES

Appendix 1. Writing Method

Stages of wring career guide book include observations on the appropriate method for tracking studies to identify profiles and competency, implementation and data analysis tracking results. in formulating the method and analysis, the writer team gets supervision from Technical Assistant.

The first stage, observation on methods for tracking study conducted by consulting the material disseminated questionnaires to stakeholders. The question is the description of the profession, the selection process, scientific competencies, soft skills and technical skills required by the job. The source of the attribute in question comes from the soft skill attributes to a survey conducted by the magazine Tempo, the National Association of Colleges and Employers. The understanding of these attributes match definition in psychology, considering that the questionnaire was personnel section.

The second stage, tracer study conducted through survey method through the distribution of questionnaires and interviews with alumni and stakeholders held from June 15 to July 1, 2008. A questionnaire was distributed to 56 stakeholders and 50 alumni. The questionnaire content is based on the types of professions surveyed, including: industry / company mainly related to food safety, researchers, academics and government officials, NGOs, and entrepreneurs. It is also conducted a self-evaluation of competence personality and fresh graduate with methods of analysis Biology Competency Test Personal entrepreneurship (PEC Test).

Furthermore, alumni, stakeholders and students are invited to participate in a workshop, so there will be a discussion of the survey results. Then, to fill in missing data, there will be benchmarking on the real needs of stakeholders through job vacancy section in the media.

Workshop on the identification and competency profiles and competency-based learning concept was conducted on June 21 and July 1, 2008. In this workshop, the speaker was Prof. Yatim Riyanto, Graduate Program Unesa and Drs. Bahr Uloom, S. Psi, Part HRD PT. Nestle. Analysis and preparing a survey report carried out on 2 July to 2 August 2008.

The third stage is data analysis questionnaire. Data were analyzed with the program excel simple. Score of soft skill is averaged and ranked based on the average score. Data were analyzed from 27 stakeholders who provide feedback on the questionnaire distributed. Considering the purpose of preparing a career guide book is to enrich the competencies in the area of food safety, so the company becomes an important target for the survey. There are eight companies that provide feedback include: PT. Nestle Indonesia, Pandaan, Surabaya 60272, East Java. PT. Bio Farma, Jakarta, PT. Otsuka, Singosari, PT. AIT Biotech, PT. Cheil Jedang PT. Bintan Resort Horizons, PT. Nalcodan ORANGUTAN FOUNDATION UK.

The fourth stage is Structured career handbook contains a description of each profession, biologists profiles, competencies needed, and strategies for entering the workforce.

Enclosure 2. Definition of *softskill*

personality Capacity

competence	characteristics
Creative, innovative, mutable	Having a lot of new ideas, willing to create a new process or product, can design modifications or improve the performance of a process or product, flexible, versatile and willing to accept the opinions of others.
Working under pressure	Working under pressure for achievement, results-oriented, have perseverance and fortitude, have a strong determination, hardworking, energetic and easy to recover from the stress of work, and have the initiative.
Curiosity	Want to get the right information at the critical source, in assessing information and objective in considering issues
Honest, patient, optimist	Act honestly, not lying, not selfish, have confidence that life is equal to the work, not easily discouraged
Polite, humorist, and friendly	Could put himself in a different culture, appreciate other cultures, able to adjust the culture of organization, sociable, able to make others

	comfortable for her presence
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Leadership

Competence	Characteristics
Making decision	Confidence in the decision taken, independence, individuality, optimism.
Future vision	Perception and having the perspective / mindset oriented to the future, thinking about the best that can be achieved in the current state
Taking a risk	Confidence, independence, individuality, optimism
Analyze and solve problems	Can formulate the problem, to find the root of the problem, to analyze the problem and choose the right solution
Management skill	Can manage the organization based on the principles of modern management (POAC)

Interpersonal relation

Competency	Characteristics
Oral communication	to convey ideas in a forum that can be understood by the audience
Written communication	May present a written ideas that can be understood by the reader, according to the rules of writing
Working together	Working with many people, adaptation and contributing to the work
Self control and adaptation	Can appreciate others, to adapt to the culture of organization, not easily angered, it's easy to get a comfortable atmosphere
Negotiation skill	can assure somebody, confident, understand partner background.

Enclosure 3. Address of Alumni Instances JB-UB

Bio Pharma jl. pasteur no 28 bandung 40161, West Java Indonesia

CV Agro Multi Biotek. Jl Jend Gatot Subroto 68GEDANGAN 61254 031-8913478 Pandaan

CV Tiara Perdana Mediterania I Blok C.8 K - Pantai Indah Kapuk Jakarta Utara DKI Jakarta 14460 Indonesia

Medical faculty UB. Jl. Veteran Malang

Purwodadi Park- LIPI. Jln. Raya Surabaya - Malang KM. 65, Purwodadi, East java. phone: (0341) - 426046 / 424076 (0343) - 615033

'Eka Karya' park Bali-LIPI Candikuning, Baturiti, Tabanan 82191 Telp.: 0368-21273 / 22050 Fax: 0368-22051 email: kebunrayabali@yahoo.com

LBB Prestasi. Jl. Danau Sentani Sawojajar.

Laboratorium Sentral Ilmu Hayati UB. Jl. Veteran Malang.

LIPI UPT Biak. Bosnik Raya Biak Timur

MTs Darussalam. Jl. Gunung Tugel No. 400 Tongas Probolinggo.

Puslitbang Limnologi Kompleks LIPI Cibinong Jl. Raya Jakarta Bogor KM.46 Cibinong-Bogor phone. 021-8757071 Fax 021-8757076

Pusat Penelitian Oseanografi - LIPI, Jl. Pasir Putih I, Ancol Timur, Jakarta 14430, ... Tel. 62-21-64713850, Fax. 62-21-64711948, E-mail:meif001@lipi.go.id ...

PT. Andy Champion Muffler Industry » Category Other Location : Pakisaji, Malang
Jl. Raya Kebon Agung No. 117 Pakisaji, Malang Jawa Timur 65162 Telp : 62 (0341) 801404

PT. Antar Mitra Sembada Jakarta. Jl. Pos Pengumben Raya no. 8 Rt. 05/05, Kebon Jeruk - Jakarta Barat 11560 021-531 0445 / 0566

PT Asuransi Bintang, Tbk Jl. RS. Fatmawati 32 Jakarta 12430 Telp. 75902777, 7690000
PT. Bhakti Finance. Jl. Salak Raya Bengkulu

PT. BRI (Persero) Brebes. Jl. Dr. Wahidin No 1 Brebes.

PT. Bromo Tirta Lestari Perusahaan air minum ALAMO Jl. Raya Banjarsari km.7 Probolinggo, East Java INDONESIA Telp. 62-335-428384, 432166 Fax. 62-335-428260 E-mail : csa@alamowaters.com

PT. Citra Nusa Insan Cemerlang. alamat: Graha CNI Komplek. Green Garden A8/1 Jl. Arteri Kedoya Jakarta 11520 .

PT.Eka Timur Raya (Limited Liability Co.) Head Office / Factory : Jl. Raya Nongkojajar Km 1.4 Kec.Purwodadi Kab. Pasuruan 67163 East Java-Indonesia .

PT. Fajar Mas Murni. Jl Raya Narogong No. 214 Bekasi.

PT Gudang Garam Tbk., Jl. Semampir II No. 1,Kediri 64121,Indonesia

PT. Kharisma. Jl. Pahlawan Surabaya

PT Mandala.Permata Sidoarjo R2 No. 2Sidoarjo 61272, east java

PT. Maspion Transindo Jl. Kembang Jepun NO. 38-40 Surabaya emkl@maspion.co.id Telepon : 0313530333

PT. Miwon.Driyorejo Km 24 Gresik

PT Otsuka Indonesia, Jl. Sumber Waras 25, Lawang, Malang

PT. Pulau Sambu Tembilahan / Kuala ElokJl. Ki Hajar Dewantara Jembatan IITembilahan INHIL, Riau 29211

PT. Sehat Sukses Sejahtera. Jl. Kartini No. 21 Surabaya

PT. Trans Ocean Pacific Logistic Jl. Ikan Mungsing IV NO.14 Surabaya 60177 n42di@mitra.net.id
Telepon : 03170622236

P-WEC (Petung Sewu Wildlife Education Centre) Desa Petung Sewu Kecamatan Dau Kabupaten Malang

PJM UB. Jl Veteran Malang

SMA Negeri Sampung. Jl Raya Sampung Kecamatan Sampung Ponorogo.

Universitas Islam Negeri Malang. Jl Gajayana Malang