



**Project Management Institute
Department of Management and Mathematical Economics**

**EDUCATIONAL PROGRAM
6B04103 – Business engineering
Undergraduate**

Code and classification of the field of education: 6B04 Business, management and law

Code and classification of areas of study: 6B041 Business and management

Group of educational programs: B044 "Management and management"

NQF level: 6

ORC level: 6

Duration of study: 4 years

Credits: 240

Almaty 2022

Educational program "Business Engineering" approved by the Academic Council of KazNITU named after. K.I. Satpaeva.

Minutes № 14 dated May 17, 2022

Considered and recommended for approval at the meeting of the Educational and Methodological Council of KazNITU named after. K.I. Satpaeva.

Minutes № 8 dated May 16, 2022

Educational program 6B04103 - Business Engineering was developed by the academic committee in the direction of "Business and Management"


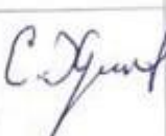

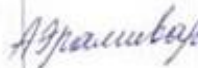

FULL NAME	Academic degree/ academic title	Job title	Place of work	Signature
Chairman of the academic committee:				
Turegeldinova Aliya Zhumabekovna	PhD	Head of department	SU	
Teaching staff:				
Khrushchev Sergey Vitalievich	Doctor of Physics and Mathematics, Professor	Professor	SU	
Tsekhovoy Alexey Filippovich	Doctor of Technical Sciences, Professor	Professor	SU	
Employers:				
Eralieva Akerkin Egamberganovna	PhD	Vice- chairman	NPE Atameken	
students				
Kalykova Ayaulym		Bachelor		

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List of abbreviations and symbols

NJSC "Kazakh National Research Technical University named after K.I. Satpayev"- NAO KazNITU named after K.I. Satpaev

UC– university component

OC -optional component

LO -learning outcomes

KC– key competencies

1. Description of the educational program

The OP "Business Engineering" is focused on training highly qualified managers who have the necessary competencies in project management, foreign trade cooperation and organizing their own business and start-up.

The field of professional activity of graduates who have mastered the undergraduate program includes:

- management activities in organizations of any organizational and legal form, in which graduates work as executives or leaders in various departments of the management apparatus;
- managerial activity in state and local government bodies;
- entrepreneurial and organizational activities in structures where graduates are entrepreneurs who create and develop their own business;
- research activities in scientific organizations related to the solution of management problems;
- research and teaching activities in educational institutions of higher education and organizations of additional professional education.

The objects of professional activity of graduates who have mastered the undergraduate program are:

- management processes of organizations of various organizational and legal forms;
- public and private management processes;
- research processes.

The area of professional tasks solved by a specialist in the EP "Business Engineering" (bachelor's degree) organizational and managerial activities:

- development of strategies for the development of organizations and their individual divisions;
- management of subdivisions of enterprises and organizations of different forms of ownership, state and municipal authorities;
- organization of creative teams (teams) to solve organizational and managerial tasks and manage them;

analytical activity:

- search, analysis and evaluation of information for the preparation and adoption of management decisions;
- analysis of existing forms of organization and management processes, development and justification of proposals for their improvement;
- assessing the effectiveness of projects, taking into account the uncertainty factor;

activity: scientific - research organization of scientific research:

- definition of tasks for groups and individual performers, selection of research tools, analysis of their results, collection, processing, analysis and systematization of information on the research topic, preparation of reviews and reports on the research topic;

- development of models of the studied processes, phenomena and objects related to the field of professional activity, evaluation and interpretation of the results obtained;
 - identification and formulation of topical scientific problems;
 - preparation of reviews, reports and scientific publications;
- activity: pedagogical
- teaching of management disciplines and development of relevant educational and methodological materials in general educational and professional organizations, in organizations of additional professional education.

2. Purpose and objectives of the educational program

OP goals "Business engineering" is the training of specialists in the field of business management using advanced theoretical and practical achievements in the field of enterprise architecture, business process reengineering, project management.

Tasks of the OP:

to study the tasks of organizational development;
study the methods and tools of business process engineering;
learn how to structure and link individual tasks into integrated development programs;
master applied tools for improving business engineering;
to master the skills of carrying out changes in the work of the company, to overcome resistance to change;
master the methods of evaluating the economic efficiency of business engineering.

3. Requirements for evaluating the learning outcomes of an educational program

RO1: Show a culture of thinking, generalization, perception of information, analysis, setting a goal and choosing ways to achieve it.

RO2: Determine and apply methods and means of cognition, learning and reflection for intellectual development, raising the cultural level, professional competence, moral and physical self-improvement.

RO3: Model real phenomena and processes in mathematical language, exploring the applied aspects of mathematics and evaluating the theoretical foundations of economic knowledge, correctly formulate the tasks of their activities, establish their relationships, build models of task systems, analyze, diagnose the causes of problems.

RO4: Build a system of financial relationships and accounting in business, apply knowledge of approaches to quality management, development of the innovative potential of an enterprise, manage innovative and entrepreneurial activities.

PO5: Build and classify business processes using data analysis tools, project management methods, programs, portfolios, risks, changes, communications; methods of processing and presenting professionally significant information.

RO6: Show professional skills of grammatical, oral and written speech in a foreign language, correctly formulate the tasks of their activities, establish their relationships, build models of task systems, analyze, diagnose the causes of problems.

RO7: Build statistical methods for studying socio-economic processes in society and a methodology for conducting a comprehensive analysis of the activities of economic entities, find, analyze, select and evaluate the necessary information to solve the set professional tasks.

PO8: Interpret financial, accounting and other information contained in project reports and use the information obtained to make management decisions; analyze financial statements to achieve project effectiveness.

RO9: Classify a systematic understanding of economic processes in the context of the main sectors of the economy, determine the range of tasks within the goal and choose ways to solve them, based on the current legal norms, available resources and restrictions.

RO 10: Integrate interdisciplinary knowledge in the management of economic processes; make decisions based on the knowledge and skills used in the field of management and marketing, apply knowledge of the principles and methods of development and rules for the application of regulatory and technical documentation to ensure the quality of processes, products and services.

RO11: Generalize and demonstrate the acquired knowledge, skills, control skills of engineering activities; to search for and use the information necessary for the effective implementation of professional tasks, professional and personal development.

RO 12: Make and evaluate strategic business management decisions based on personal leadership and entrepreneurial skills.

RO 13: Determine the essence and social significance of your future profession, show a steady interest in it using theoretical knowledge of project management and business engineering.

RO 14: Interpret and arrange the results of the work in accordance with accepted international standards.

RO 15: Build a process of effective personal time management and implement a self-development trajectory based on the principles of lifelong learning.

4. Passport of the educational program

4.1. General information

No.	Field name	Note
1	Code and classification of the field of education	6B04 Business, administration and law
2	Code and classification of areas of study	6B041 Business and management

3	Group of educational programs	B044 "Administration and management"
4	Name of the educational program	"Business Engineering"
5	Brief description of the educational program	is focused on training highly qualified managers with the necessary competencies in project management, foreign trade cooperation and organizing their own business and start-up.
6	Purpose of the OP	training of specialists in the field of business management using advanced theoretical and practical achievements in the field of enterprise architecture, business process reengineering, project management
7	OP type	higher professional education
8	NQF level	6
9	ORC level	6
10	Distinctive features of the OP	academic exchange program / credit system of education / distance learning
eleven	List of competencies of the educational program:	<p>Management activities:</p> <p>K 1. the ability to manage organizations, departments, groups (teams) of employees, projects and networks</p> <p>K 2. the ability to develop corporate strategy, organizational development and change programs and ensure their implementation</p> <p>K3. the ability to use modern methods of corporate finance management to solve strategic problems</p> <p>analytical activity:</p> <p>K4. the ability to use quantitative and qualitative methods for applied research and business process management, prepare analytical materials based on the results of their application</p> <p>K 5. possession of methods of economic and strategic analysis of the behavior of economic agents and markets in a global environment</p> <p>scientific and research activities:</p> <p>To 6. the ability to generalize and critically evaluate the results of research on topical management problems obtained by domestic and foreign researchers</p> <p>K 7. the ability to present the results of the study in the form of a scientific report, article or report</p> <p>K 8. the ability to justify the relevance, theoretical and practical significance of the chosen topic of scientific research</p> <p>K 9. the ability to conduct independent research in accordance with the developed program</p> <p>pedagogical activity:</p> <p>K 10. the ability to develop curricula and methodological support for management disciplines, as well as apply modern methods and techniques in teaching process</p>
12	Learning outcomes of the educational program:	RO1: Show a culture of thinking, generalization, perception of information, analysis, setting a goal and choosing ways to achieve it.

		<p>RO2: Determine and apply methods and means of cognition, learning and reflection for intellectual development, raising the cultural level, professional competence, moral and physical self-improvement.</p> <p>RO3: Model real phenomena and processes in mathematical language, exploring the applied aspects of mathematics and evaluating the theoretical foundations of economic knowledge, correctly formulate the tasks of their activities, establish their relationships, build models of task systems, analyze, diagnose the causes of problems.</p> <p>RO4: Build a system of financial relationships and accounting in business, apply knowledge of approaches to quality management, development of the innovative potential of an enterprise, manage innovative and entrepreneurial activities.</p> <p>RO 5: Build and classify business processes using data analysis tools, project management methods, programs, portfolios, risks, changes, communications; methods of processing and presenting professionally significant information.</p> <p>RO6: Show professional skills of grammatical, oral and written speech in a foreign language, correctly formulate the tasks of their activities, establish their relationships, build models of task systems, analyze, diagnose the causes of problems.</p> <p>RO7: Build statistical methods for studying socio-economic processes in society and a methodology for conducting a comprehensive analysis of the activities of economic entities, find, analyze, select and evaluate the necessary information to solve the set professional tasks.</p> <p>RO 8: Interpret financial, accounting and other information contained in project reports and use the information obtained to make management decisions; analyze financial statements to achieve project effectiveness.</p> <p>RO9: Classify a systematic understanding of economic processes in the context of the main sectors of the economy, determine the range of tasks within the goal and choose ways to solve them, based on the current legal norms, available resources and restrictions.</p> <p>RO 10: Integrate interdisciplinary knowledge in the management of economic processes; make decisions based on the knowledge and skills used in the field of management and marketing, apply knowledge of the principles and methods of development and rules for the application of regulatory and technical documentation to ensure the quality of processes, products and services.</p> <p>RO11: Generalize and demonstrate the acquired knowledge, skills, control skills of engineering activities; to search for</p>
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		<p>and use the information necessary for the effective implementation of professional tasks, professional and personal development.</p> <p>RO 12: Make and evaluate strategic business management decisions based on personal leadership and entrepreneurial skills.</p> <p>RO 13: Determine the essence and social significance of your future profession, show a steady interest in it using theoretical knowledge of project management and business engineering.</p> <p>RO 14: Interpret and arrange the results of the work in accordance with accepted international standards.</p> <p>RO 15: Build a process of effective personal time management and implement a self-development trajectory based on the principles of lifelong learning.</p>
13	Form of study	full-time
14	Training period	4 years
15	Volume of loans	240
16	Languages of instruction	Kazakh, Russian, English
17	Awarded Academic Degree	Bachelor of Business and Management
18	Developer(s) and authors:	Turegeldinova A.Zh., Tsekhovoi A.F., Sultanbekova Zh.Zh., Salina A.P.

4.2. The relationship between the achievability of the formed learning outcomes in the educational program and academic disciplines

No.	Name of the discipline	Brief description of the discipline	Number of credits	Formed learning outcomes (codes)													
				RO1	PO2	PO3	PO4	RO5	RO6	RO7	RO8	RO9	RO10	RO11	RO12	RO13	PO14
Cycle of general education disciplines																	
Required Component																	
1	Foreign language	Learning a foreign language from the level determined on the diagnostic test	10	v					v								v
2	Kazakh (Russian) language	Learning Kazakh / Russian language starting from the level determined on the diagnostic test	10	v					v								v
3	Physical Culture	Formation of the physical culture of the individual and the ability to use various means of physical culture for the preservation and promotion of health, psychophysical training and self-training for future professional activities	8		v												v
4	Information and Communication Technologies (in English)	Leveling the basic knowledge of students in the field of information and communication technologies	5			v											

5	History of Kazakhstan	The purpose of the course is to familiarize students of technical specialties with the main theoretical and practical achievements of domestic historical science on the problems of the history of modern Kazakhstan, a comprehensive and systematic study of the main stages of the formation and development of Kazakhstani society	5		v														v
6	Philosophy	The aim of the course is the formation of cognitive, operational, communicative, self-educational competencies	5		v														v
7	Module of socio-political knowledge (sociology, political science)	The purpose of the course is the political socialization of students of a technical university, providing the political aspect of training a highly qualified specialist on the basis of modern world and domestic political thought.	3		v														v

		understanding of the methodology of entrepreneurship.																	
eleven	Fundamentals of scientific research methods	The purpose of studying the discipline is, on the basis of theoretical and practical knowledge, to ensure the adoption of evidence-based decisions in the performance of professional tasks.	5																v
12	Ecology and life safety	The purpose of studying the discipline is to form the foundations of environmental knowledge, which is the theoretical foundation of all environmental protection measures, including measures to ensure the environmental safety of a person, preserve his health, ecologization of consciousness and the education of ecological culture.	5		v														

Cycle of basic disciplines																
University component																
13	Mathematics for Economists 1, 2	The course is intended for students studying economics. It aims to teach the methods of differential and integral calculus used to build mathematical models of various economic and financial disciplines, including banking, management, accounting.	10			v										
14	Introduction to Statistics 1, 2	The purpose of the discipline is to acquire by students the necessary skills to apply the methods of quantitative statistical analysis in various economic situations and business processes.	10			v										
15	Statistics 1, 2	The purpose of the discipline is to deepen the knowledge of statistical analysis in various economic situations and business processes.				v										

16	Introduction to the specialty	The study of the discipline "Introduction to the specialty" is necessary to familiarize students with their future profession and encourage them to master the necessary knowledge and skills, as well as to familiarize students with the specifics of university education and the graduating department.	5	v															v
16	Management	The goal is to train modern highly qualified managers in the field of management, competitive in the labor market, with practical skills and leadership qualities that meet modern labor market requirements, making a practical contribution to the innovative development of the company and to the modernization of the economy and business of Kazakhstan	4				v				v	v							

17	Microeconomics	The purpose of studying the discipline is the formation of future specialists' theoretical knowledge about the microeconomic aspects of the functioning and development of the modern economy, as well as practical skills in the field of microeconomic analysis and other modern scientific tools for studying microeconomic processes.	5				v	v	v							v			
18	Macroeconomics	The purpose of studying the discipline is to give students knowledge about macroeconomics as an integral system that studies the functioning and development of the country's national economy, analyzes the most pressing problems of the economy, the impact of the state's economic policy on the economic life of society.	5				v	v	v							v			

		effective project management, ensuring the achievement of certain results in terms of the composition and scope of work, cost, time, quality and satisfaction of project participants															
23	Theory and practice of project management	The goal is to acquire by students knowledge in the field of theory and practice necessary for project management.	5					✓					✓	✓			
24	Business organization	The purpose of the course is to form a student's orderly system of knowledge on theoretical, methodological and practical issues of effective business organization.	5					✓					✓	✓	✓		
Cycle of basic disciplines Optional component																	
29	Introduction to risk management	The purpose of the discipline "Introduction to risk management" is to develop students' basic professional competencies in the field of risk management of non-financial companies, as well as research, analytical and pedagogical activities in the field of risk management	5					✓					✓				
thirty	Communications management	The purpose of the discipline "Communications Management" is the formation of a theoretical	5	✓					✓								

		and methodological basis for the study of professional disciplines of the communicative cycle; mastering by students of the conceptual apparatus and the main provisions of the theory of communication and the formation of an idea of the main approaches to the study of communication in world and domestic science															
31	Corporate governance and compliance	The goal is to familiarize students with organizational and managerial issues related to the development of corporate governance and compliance in the field of strategic trade control	5											v		v	
32	The financial analysis	The discipline summarizes modern trends in the theory and practice of systemic analysis of financial statements.	5				v				v						

33	Business performance management	The purpose of studying the discipline is to give a systematic understanding of essence, tasks and functions of management cost accounting according to the requirements professional organization ACCA	5															
34	Business process design	The course is aimed at mastering the basic concepts and concepts of developing business processes, understanding its organization and methodology, as well as acquiring practical skills in effective management of business processes of an industrial enterprise.	5						v				v		v			
35	Supply Chain Management	The purpose of studying the discipline is to obtain the necessary theoretical knowledge and acquire analytical and practical skills in the field of activity of subjects of a market economy in the formation and development of optimal economic relations and the design of logistics systems of organizations	5									v			v		v	

36	Fundamentals of foreign economic activity and rules for regulating international transportation	The purpose of mastering the discipline is to form students' fundamental knowledge in the field of foreign economic mechanisms of entrepreneurial activity using the main forms of interaction between subjects of the world market	5								v				v				v
37	Knowledge Management	the goal is to develop students' ideas about knowledge management as a modern approach in management, the possibilities and ways of using it to solve the strategic and tactical tasks of an organization in order to increase its competitiveness; skills needed to practically solve the problems of knowledge management in an organization	5						v				v						

38	Introduction to change management	The objectives of mastering the discipline are: to give an understanding of the system of scientific methods and methods of modern approaches to managing organizational change; to form employee behavior skills in the system of constant changes in the company	5				v				v		v			
Cycle of major disciplines University component																
39	Marketing	The purpose of studying the discipline "Marketing" is to form students' initial knowledge of marketing, ideas about its importance and necessity, as well as to give future specialists both the theory and practice of marketing, and specific areas and technologies of marketing activities in industries that produce goods and services.	5								v					

40	Project management tools and methods	The purpose of the discipline is: acquaintance students with the essence and tools of project management, allowing competently make decisions on coordinating people, equipment, materials, etc.	5					v						v				
41	Project management software applications	The purpose of the discipline is: acquaintance students with modern software and information technologies used in project management	5					v						v				
Cycle of major disciplines																		
Selectable Component																		
42	Lean management	The objectives of mastering the discipline are: the study of the conceptual foundations of lean management, as well as the acquisition of skills and abilities to apply universal and special methods and tools for continuous improvement of activities in accordance with the concept of lean management	5					v										v
43	Business structure management	The purpose of studying the discipline is to develop students' knowledge of the process	5					v						v	v	v		

		management of the company, the skills of managing the production, marketing, innovation, personnel and financial areas of the enterprise based on the methodology of process management															
44	Financial management	Acquiring a set of knowledge on the theoretical foundations of financial management and practical skills in managing financial relations, cash flows, investments, loans and profits of the organization.	5				V				V						

5. Curriculum of the educational program

MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHSTAN
KAZAKH NATIONAL RESEARCH TECHNICAL UNIVERSITY named after K.I. SATPAEV

APPROVE

Chairman of the Board-
Rector of KazNITU named after K.I. Satpaeva
_____ MM. Begentaev
" __ " _____ 2022

SYLLABUS

EDUCATIONAL PROGRAMS for enrollment for the 2022-2023 academic year

Educational program - "Business Engineering"

Group of educational programs B044 - "Management and management"

Form of study: Academic degree: Bachelor of Engineering and Technology

full-time Study period: 4 years

Discipline Code	Name of disciplines	Cycle	Total volume in credits	Total hours	Audience volume lek/lab/pr	SRO (including SROP) in hours	form of control	Distribution of classroom studies by courses and semesters							
								I course		II course		III course		IV course	
								1 semester	2 semester	3 semester	4 semester	5 semester	6 semester	7 semester	8 semester
CYCLE OF GENERAL EDUCATIONAL DISCIPLINES (OOD)															
M-1. Language training module															
LNG 108	Foreign language	OOD, OK	10	300	0/0/6	210	E	5	5						

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LNG 104	Kazakh (Russian) language	OOD, OK	10	300	0/0/6	210	E	5	5							
M-2. Physical training module																
KFK 101-104	Physical Culture	OOD, OK	8	240	0/0/8	120	Difference	2	2	2	2					
M-3. Information technology module																
CSE 677	Information and Communication Technologies (in English)	OOD, OK	5	150	2/1/0	105	E				5					
M-4. Socio-cultural development module																
HUM 137	History of Kazakhstan	OOD, OK	5	150	1/0/2	105	E		5							
HUM 132	Philosophy	OOD, OK	5	150	1/0/2	105	E				5					
HUM 120	Module of socio-political knowledge (sociology, political science)	OOD, OK	3	90	1/0/1	60	E				3					
HUM 134	Module of socio-political knowledge (culturology, psychology)		5	150	2/0/1	150	E			5						
M-5. Module of the basis of anti-corruption culture, ecology and life safety																
HUM 133	Fundamentals of anti-corruption culture	OOD, KV														
MNG 488	Fundamentals of Entrepreneurship and Leadership		5	150	2/0/1	150	E			5						
MET661	Scientific research methods															
HYD 438	Ecology and life safety															

CYCLE OF BASIC DISCIPLINES (DB)															
M-6. Module of physical and mathematical training															
NSE420-422	Mathematics for Economists 1, 2	BD, VK	10	150	2/0/1	90	E	5	5						
NSE423-425	Introduction to Statistics 1, 2	BD, VK	10	150	2/0/2	90	E	5	5						
NSE120-126	Statistics 1, 2	BD, VK	10	150	2/0/1	105	E			5	5				
M-7. Basic training module															
MNG539	Introduction to the specialty	BD, VK	5	150	2/0/1	105	E	5							
MNG529	Management	BD, VK	4	120	2/0/1	75	E		4						
NSE130	Microeconomics	BD, VK	5	150	2/0/1	105	E			5					
NSE139	Macroeconomics	BD, VK	5	150	2/0/1	105	E				5				
MNG500	Business engineering 1	BD, VK	5	120	2/0/1	60	E					5			
MNG521	Business engineering 2	BD, VK	5	150	2/0/1	105	E						5		
MNG524	Introduction to Strategic Trade Control	BD, VK	6	180	2/0/2	120	E				6				
NSE135	Econometrics 1	BD, VK	5	150	2/0/1	105	E					5			
MNG530	Fundamentals of agile technologies	BD, VK	5	150	2/0/1	105	E						5		
MNG533	Theory and practice of project management	BD, VK	5	150	2/0/1	105	E					5			
NSE165	Business organization	BD, VK	5	150	2/0/1	105	E					5			
2201	elective	BD, KV	5	150	2/0/1	105	E			5					
3202	elective	BD, KV	5	150	2/0/1	105	E					5			
3202	elective	BD, KV	5	150	2/0/1	105	E					5			
3203	elective	BD, KV	5	150	2/0/1	105	E						5		

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3204	elective	BD, KV	5	150	2/0/1	105	E							5	
CIV784	Educational practice	BD, VK	2							2					
CYCLE OF PROFILING DISCIPLINES (PD)															
M-8. Professional activity module															
NSE196	Marketing	PD, VK	5	150	2/0/1	105	E							5	
MNG527	Project management tools and methods	PD, VK	5	150	2/0/1	105	E							5	
MNG531	Project management software applications	PD, VK	5	150	2/0/1	105	E								5
3301	elective	PD, KV	5	150	2/0/1	105	E							5	
3302	elective	PD, KV	5	150	2/0/1	105	E							5	
4301	elective	PD, KV	5	150	2/0/1	105	E							5	
4302	elective	PD, KV	5	150	2/0/1	105	E							5	
4303	elective	PD, KV	5	150	2/0/1	105	E							5	
4304	elective	PD, KV	5	150	2/0/1	105	E							5	
4305	elective	PD, KV	5	150	2/0/1	105	E							5	
4306	elective	PD, KV	5	150	2/0/1	105	E								5
CIV785	Field trip I	PD, VK	2									2			
CIV786	Field trip II	PD, VK	3												3
M-9. Final assessment module															
ECA103	final examination	IA	12												12
M-10. Module of additional types of training															
AAP500	Military training	DVO	0												
	Total for UNIVERSITY:							27	33	27	33	thirty	thirty	35	25
								60	60	60	60			60	
Number of credits for the entire period of study															

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Cycle code	Cycles of disciplines	Credits												
		required component (OK)	university component (VC)	component of choice (CV)	Total									
OOD	Cycle of general education disciplines	51	5		56									
DB	Cycle of basic disciplines		87	25	112									
PD	Cycle of major disciplines		20	40	60									
	Total for theoretical training:	51	112	65	228									
IA	final examination	12			12									
	TOTAL:	63	112	65	240									

