

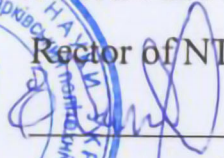
**MINISTRY OF EDUCATION AND SCIENCE
OF UKRAINE**

**NATIONAL TECHNICAL UNIVERSITY
“KHARKIV POLYTECHNIC INSTITUTE”**



APPROVED BY

Rector of NTU “KhPI”

 **Ievhen SOKOL**

» 05 2022p.

**«FINANCE AND BANKING»
PROGRAM OF PROFESSIONAL EDUCATION**

Second (Master's) level of higher education

Major **072 – “Finance, Banking and Insurance”**

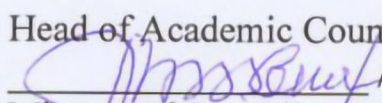
Field of knowledge **07 – Management and Administration**

Qualification: Master in **Finance, Banking and Insurance**

APPROVED BY

ACADEMIC COUNCIL OF NTU «KhPI»

Head of Academic Council

 **Leonid Tovazhnianskyi**

Minutes of Council meeting # 4

dated « 02 » 05 2022

Kharkiv 2022

APPROVAL SHEET FOR

“Finance and Banking” program of professional education

Level of higher education	Second (Master's)
Field of knowledge	07 Management and Administration
Major	072 «Finance, Banking, Insurance and Stock Market»
Qualification	Master in <u>Finance, Banking and Insurance</u>

APPROVED BY

OP Workgroup for major «Finance, Banking, Insurance and Stock Market»
Head of educational program

 Natalia YAKIMENKO-TERESCHENKO
« 24 » 05 2022

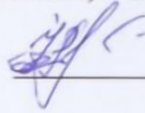
AGREED UPON

Chair of Accounting and Finance

 Oleksandr MANOYLENKO
« 24 » 05 2022

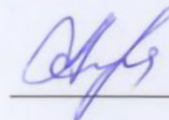
AGREED UPON

Student of Finance and Accounting
department, BEM-M421a

 Inna RYBALCHENKO
« 24 » 05 2022

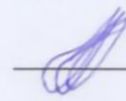
RECOMMENDED BY

Methodical Council of NTU “KhPI”
Deputy head of methodical council

 Ruslan MYHUSHCHENKO
« 24 » 05 2022

AGREED UPON

Deputy director of Educational and Research
Institute of Economics, Management and
International Business (EMIB)

 Valerii KOBELIEV
« 24 » 05 2022

INTRODUCTION

The Program corresponds to the Standard of Higher Education of Ukraine at the Master's level in the field of knowledge 07 Management and Administration, major 072 Finance, Banking, and Insurance, which was approved and enacted by the order of the Ministry of Education and Science of Ukraine dated 20.06.2019 No. 866.

The Program is developed by the OP Workgroup of the Finance and Banking at Educational and Research Institute of Economics, Management and International Business of the National Technical University "Kharkiv Polytechnic Institute". The Workgroup consists of the following members:

Head of the program – Natalia YAKIMENKO-TERESCHENKO, Doctor of Economic Science, Professor, Chair of Tourism and Hotel-Restaurant Business

Members of OP Workgroup:

Associate Professor of Accounting and Finance department, PhD in Techniks, Dr. Tetiana PIATAK

Associate Professor of Management, PhD in Economics, Professor, Dr. Natalia VLASOVA

Student of Accounting and Finance department Inna RYBALCHENKO

The Program reviews are attached.

CONTENT

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I. PROFILE OF THE PROGRAM FOR PROFESSIONAL EDUCATION

072 Major - FINANCE, BANKING AND INSURANCE

1 – General Information	
Higher education facility and department/institute	National Technical University “Kharkiv Polytechnic Institute”, Educational and Research Institute of Economics, Management and International Business, Accounting and Finance Department
Academic degree and qualification title in Ukrainian	Master, Master of Finance, Banking and Insurance.
Official title of educational program	Finance and Banking
Diploma type and credits in educational program	Master’s diploma, single, 90 ECTS credits, length of study - 1 year and 4 month
Accreditation	H/D № 2192160, certificate, valid until July 1, 2023
Cycle/level	HPK of Ukraine – 7 th level, QF EHEA – second cycle, EQF LLL – Level 7
Prerequisites	First (bachelor) level of higher education; Specialist or Masters in other majors
Language	Ukrainian, English
Educational program validity	Until the end of validity of major accreditation certificate Reviewed annually
Description of educational program URL	https://web.kpi.kharkov.ua/acctfin/osvitnya-programa-finansi-i-bankivska-sprava-2/
2 – Objective of Educational Program	
Ensuring the training of highly qualified specialists who possess fundamental knowledge, mastered technologies and practical tools in management, research and have expert analytical skills in the field of finance and banking at the macro- and micro-levels, taking into account the requirements of a dynamic business environment.	
3 – Features of Educational Program	
Subject area (field of study, major)	<i>Field of knowledge:</i> Management and Administration <i>Major:</i> Finance, and Banking Insurance <i>Object of study:</i> management and administration in the field of finance, banking and insurance <i>Learning objectives:</i> training of specialists capable of solving complex tasks and problems in the process of professional activity or training in the field of finance, banking and insurance, which involves research and/or innovation and is characterized by uncertainty of conditions and requirements. <i>Theoretical content of the subject area:</i> scientific concepts, categories, theories and concepts of financial science that determine the trends and patterns of functioning and development of finance, banking and insurance. <i>Methods, techniques and technologies:</i> general scientific methods of cognition, mathematical, statistical and qualitative methods of financial analysis, economic and mathematical modeling, information and communication technologies, methods and achievements of technologies of world and domestic financial science and practice.

	<i>Tools and equipment:</i> modern information and analytical systems; standard, special and industry-specific software products; computers and presentation equipment
Emphasis of educational program	Educational and professional program with hands-on orientation. Professional emphasis: skill set to be applied in business analysis, project management and other management and research activities using innovative technologies, tools and methods of financial systems management.
Main focus of educational program and major	General education, Major 072 "Finance, Banking and Insurance ". Key words: financial systems, financial services, banking, insurance, corporate finance, investments, financial engineering, hedging, financial technology, international stock market, cryptocurrency.
Program features	The program is multidisciplinary and provides practical training to develop skills in finance, banking and insurance. Mastering up-to-date professional knowledge and skills in the field of Finance, Banking and Insurance in combination with in-depth study of English. Application of an integrated approach to professional growth with an emphasis on hands-on approach; combination of research and practice (educational process involves researches and academic writing: essays, term papers, articles, reports). Electives unit 1 Banking. The program offers Strategic Management methods in Banking, study of loans and credit and project financing opportunities . The students learn to apply a project-based approach to investment banking and to develop innovative financial services. Electives unit 2. Corporate Finance. The program offers a comprehensive approach to Corporate Finance in the context of structural changes in Capital Budgeting and operational activity financing. The students learn portfolio investment methods in Corporate Finance, methods of controlling and internal audit in Corporate Finance. Elective Block 3: IT Finance. The program offers a comprehensive approach to building a financial information architecture considering both classic and innovative financial instruments and technologies. It examines the risks associated with the use of various types and kinds of financial instruments. The application of IT technologies in financing business projects using blockchain technologies is also explored.
4 – Employability and Continuing Education	
Employability	According to the Classification of Professions (DK 003:2010), a specialist in Finance, Banking and Insurance may hold the following positions: 1231 Head of finance, accounting, economic, legal and administrative departments and other 1461 Managers – financial intermediaries 1462 Financial leasing managers 1463 Loan managers 1465 Life and savings insurance managers 1466 Pension insurance managers 1467 Auxiliary activities in the field of finance managers 1468 Auxiliary activities in the field of insurance managers 1469 Financial intermediation managers

	2414 Professionals in the field of financial and economic security of enterprises, institutions and organizations 341 Specialists in the field of finance and trade 3419 Other specialists in the field of finance and trade
Continuing Education	Further education at third (educational and academic) level of higher education, training and doctoral/post-doctoral education is possible.
5 – Teaching and grading	
Teaching and learning	Student-centered learning in the form of lectures, seminars, workshops, consultations, self-study, coursework based on the study of textbooks, manuals, periodicals, and the use of the Internet. Teaching is student-centered and is implemented through research-based learning, that stimulates an individual approach to self-organization of the master's student through a combination of lectures, workshops (under the guidance of lecturers - professors and associate professors of the department), independent work (including distance education) and self-study (under the guidance of supervising instructors: phased preparation of the master's thesis, internship, etc.
Grading	On-going and final testing of knowledge (Q&A, individual tasks, testing, etc.), tests and exams (oral and written), presentations, project work, defense of the internship report, public defense of the thesis.
6 – Program Competencies	
Integral competencies	Ability to solve complex tasks and problems in professional activities or in the process of studying in the field of finance, banking and insurance, which involves research and/or innovation and is characterized by uncertainty of conditions and requirements.
General competencies	GC 1. Ability to think abstractly, analyze and synthesize. GC 2. Ability to communicate in a foreign language. GC 3. Ability to conduct sound research. GC 4. Ability to identify, state and solve problems. GC 5. Ability to make informed decisions. GC 6. Interpersonal interaction skills. GC 7. Ability to motivate people and move towards a common goal. GC 8. Ability to work in an international context. GC 9. Ability to act on the basis of ethical considerations (motives).
Special (professional) competencies (defined within the standard of higher education for the major)	PC 1. Ability to use the fundamental laws of development of finance, banking and insurance in combination with research and management tools for professional and academic activities. PC 2. Ability to use theoretical and methodological tools for financial activities assessment and modeling. PC 3. Ability to apply management skills in the field of finance, banking and insurance. PC 4. Ability to evaluate the effectiveness of academic, analytical and methodological tools to justify management decisions in the field of finance, banking and insurance. PC 5. Ability to assess the limits of their own professional competence and improve their professional skills. PC 6. Ability to apply interdisciplinary approaches to solving complex problems in the field of finance, banking and insurance. PC 7. Ability to search, use and interpret information necessary for solving professional and academic problems in the field of finance, banking and insurance.

	PC 8. Ability to apply innovative approaches in the field of finance, banking and insurance. PC 9. Ability to develop technical specifications for the design of information systems in the field of finance, banking and insurance.
Special (professional) competencies for electives unit 01 «Banking» (defined by higher education institution)	PC 1. Ability to solve complex specialized tasks and practical problems in the field of finance and banking, which involves the use of various methods of managerial decision-making in the area of banking management through the formation of targeted directions for the use of investment capital, to develop and implement financial services based on the use of modern information technologies.
Special (professional) competencies for electives unit 02 «Corporate Finance» (defined by higher education institution)	PC 2. Ability to diagnose the financial condition of corporate systems, form an effective investment portfolio with subsequent assessment of its change through the implementation of internal financial control and audit based on modern scientific-practical methods.
Special (professional) competencies for elective unit 03 «IT Finance» (defined by the higher education institution)	PC 3. Ability to design complex innovative financial products with risk assessment of their introduction and management throughout their circulation cycle, the introduction of decentralized financial networks and systems (DeFi), and smart contracts based on the use of blockchain technologies in business financing, taking into account the level of security during their application.
7 – Learning Outcomes	
Learning outcomes of educational program (defined by the standard of higher education for the major)	LO01. To apply fundamental laws of development of finance, banking and insurance in combination with research and management tools for professional and academic activities. LO02. To be aware of the latest achievements, concepts and academic methodologies in the field of finance, banking and insurance. LO03. To adapt and modify existing academic approaches and methods to specific situations occurred during work. LO04. To search, process, systematize and analyze information necessary for solving professional and academic problems in the field of finance, banking and insurance. LO05. To communicate fluently in a foreign language on professional and academic issues, to present and to discuss research results. LO06. To present research results in an accessible and reasoned manner orally and in writing, to participate in professional discussions. LO07. To solve ethical dilemmas based on the law, ethical principles and universal values LO08. To be able to apply and manage innovative approaches in the field of finance, banking and insurance. LO09. To apply management skills in the field of finance, banking and insurance. LO10. To identify and model financial activities of business entities. LO11. To apply in-depth knowledge in decision-making in the field of financial, banking and insurance management. LO12. To justify the choice of management decision options in the field of finance, banking and insurance and to evaluate their effectiveness, taking into account the goals, existing constraints, legal and ethical aspects. LO13. To assess the degree of tasks complexity at planning and results processing stages.

Learning outcomes of educational program for electives unit 01 "Banking" (defined by the standard of higher education for the major)	LO1 To master various methods and tools for developing a banking strategy, which includes managing investment capital and forming complex financial instruments aimed at use in different target markets for banking services provision.
Learning outcomes of educational program for electives unit 02 "Corporate Finance" (defined by the standard of higher education for the major)	LO2 Have mastery over the methodological toolkit for diagnosing the state of corporate finances, justify the choice and order of forming an investment portfolio in international markets, conduct continuous control and audit for changes in its structure and riskiness with subsequent making of appropriate effective managerial decisions.
Learning outcomes of educational program for electives unit 03 "It Finance" (defined by the standard of higher education for the major)	LO3 The ability to develop, design, and implement complex innovative financial technologies and instruments based on modern scientific achievements, taking into account the decentralization of financial systems through the use of blockchain technologies, with subsequent risk assessment of their implementation.
8 – Resources for Educational Process Implementation	
Personnel	Meets the staffing requirements for ensuring the implementation of educational activities in the field of higher education in accordance with the current legislation of Ukraine (Resolution of the Cabinet of Ministers of Ukraine "On Approval of the Licensing Conditions for the Educational Activities of Educational Institutions" of December 30, 2015 No. 1187 (as amended by the Resolution of CM No. 180, No. 365 dated 24.03.2021))
Equipment	Meets the technological requirements for technical support of educational activities in the field of higher education in accordance with the current legislation of Ukraine (Resolution of the Cabinet of Ministers of Ukraine "On Approval of the Licensing Conditions for the Educational Activities of Educational Institutions" of December 30, 2015 No. 1187 (as amended by the Resolution of the Cabinet of Ministers of Ukraine "On Approval of the Licensing Conditions for the Conduct of Educational Activities of Educational Institutions"). NO. 347 dated 10.05.2018, No. 180 dated 03.03.2020, No. 365 dated 24.03.2021)
Information sources and learning materials	Meets the informational requirements for educational, methodological and information support of educational activities in the field of higher education in accordance with the current legislation of Ukraine (Resolution of the Cabinet of Ministers of Ukraine "On Approval of the Licensing Conditions for the Educational Activities of Educational Institutions" of December 30, 2015 No. 1187 (as amended by the Resolution of the Cabinet of Ministers of Ukraine "On Approval of the Licensing Conditions for the Educational Activities of Educational Institutions"). No. 347 dated 10.05.2018, No. 180 dated 03.03.2020, No. 365 dated 24.03.2021)
9 – Academic Mobility	
National credits mobility	On the basis of bilateral agreements between the National Technical University "Kharkiv Polytechnic Institute" and higher education institutions of Ukraine

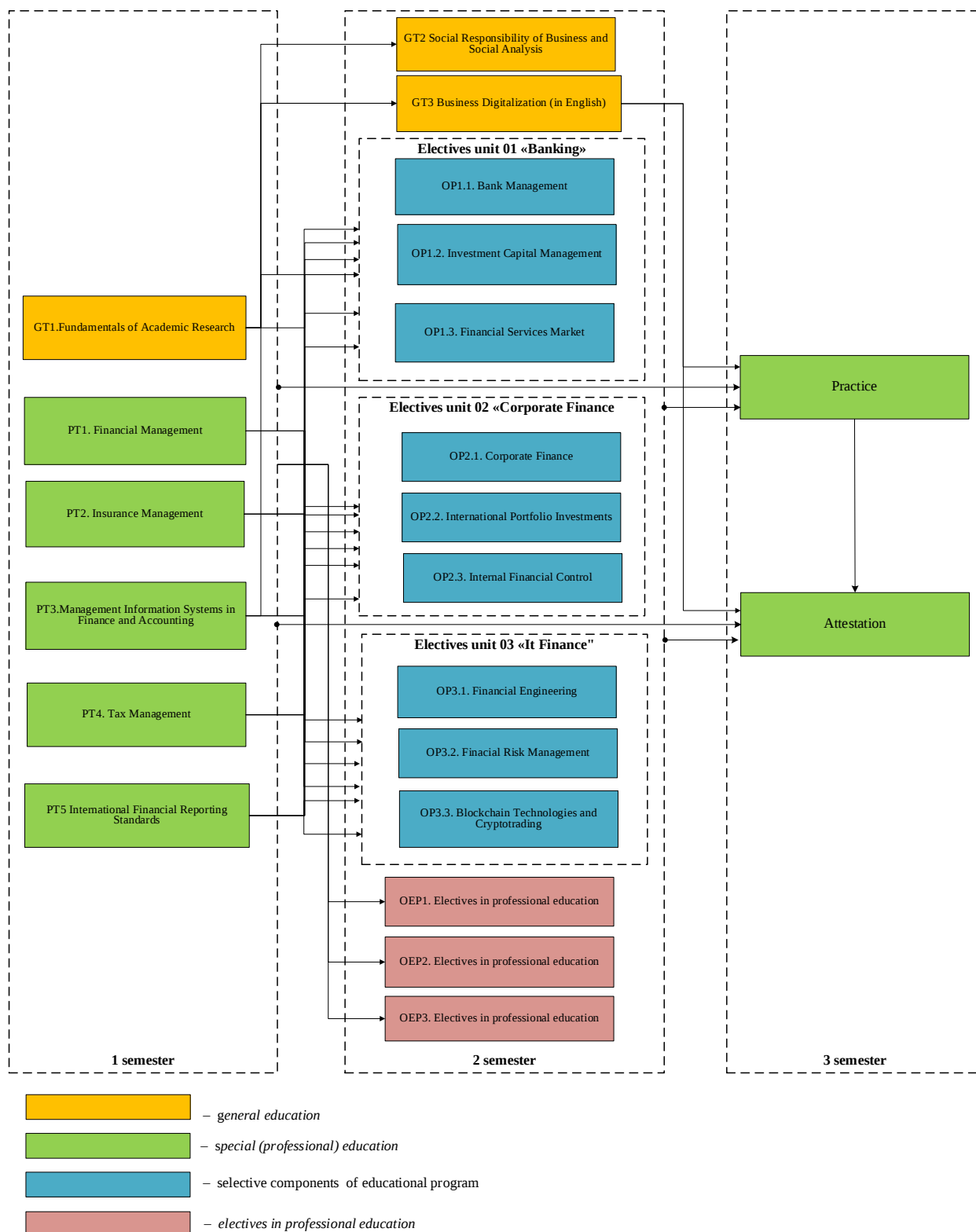
International credits mobility	Academic mobility on the basis of bilateral agreements between the National Technical University "Kharkiv Polytechnic Institute" and Otto-von-Guericke University of Magdeburg (Germany), University of Miskolc (Hungary), Sapienza University (Rome, Italy).
Foreign students learning	Possible after completing Ukrainian language course or studying in English is possible, if student is certified.

2. List of the Program Components and its Structure

2.1 List of educational program components

Code	Educational program components	Number of credits	Final examination form
1	2	3	4
Mandatory components of educational program			
<i>General education</i>			
GT1	Fundamentals of Academic Research	5	Pass
GT2	Social Responsibility of Business and Social Analysis	3	Pass
GT3	Business Digitalization (in English)	3	Pass
<i>Special (professional) education</i>			
PT1	Financial Management	5,0	Exam
PT2	Insurance Management	5,0	Exam
PT3	Management Information Systems in Finance and Accounting	5,0	Exam
PT4	Tax Management	5,0	Exam
PT5	International Financial Reporting Standards	5,0	Pass
	Practice	15	Pass
	Attestation	15	Pass
	Total credits of mandatory components	66	
Selective components of educational program			
Electives unit 01 «Banking»			
OP1.1	Bank Management	4	Exam
OP1.2	Investment Capital Management	4	Exam
OP1.3	Financial Services Market	4	Exam
Electives unit 02 «Corporate Finance»			
OP2.1	Corporate Finance	4	Exam
OP2.2	International Portfolio Investments	4	Exam
OP2.3	Internal Financial Control	4	Exam
Electives unit 02 «It Finance»			
OP3.1	Financial Engineering	4	Exam
OP3.2	Financial Risk Management	4	Exam
OP3.3	Blockchain Technologies and Cryptotrading	4	Exam
<i>List of electives in professional education</i>			
OEP1	Electives in professional education 1	4	Pass
OEP2	Electives in professional education 2	4	Pass
OEP3	Electives in professional education 3	4	Pass
	Total credits of electives:	24	
	TOTAL CREDITS PER EDUCATIONAL PROGRAM:	90	

3. Structural-Logic Scheme of the Educational Program



4. Distribution of Educational Program Content According to the Components Groups and Education Cycles

#	Education cycle	Studying workload of student (credits / %)		
		Mandatory components of educational and professional program	Elective components of educational and professional program	Total credits per program
1	2	3	1	2
1	General education cycle	11 / 12,0	-	11 / 12,0
2	Special (professional) education cycle	55 / 61	-	55 / 61
3	Electives	-	24 / 27	24 / 27
Total credits per program		66 / 73	24 / 27	90 / 100,0

5. Certification of Graduates

The certification of the educational program graduates, major 072 "Finance, Banking and Insurance " is carried out in the form of a public defense of thesis (with mandatory plagiarism check) and is completed with the issuance of a document in the established form certifying that the holder received Master's Degree with the following qualification: Master of Finance, Banking and Insurance.

Attestation is carried out openly and publicly.

6. Compliance Matrix of Program Competencies with Educational Program Competencies

Learning outcomes	Competencies																	
	General									Special (professional)								
	GC01	GC02	GC03	GC04	GC05	GC06	GC07	GC08	GC09	PC01	PC02	PC03	PC04	PC05	PC06	PC07	PC08	PC09
LO01	GT1		GT1 PT1	GT1 PT1 PT2 PT3 PT4 PT5	GT1 PT1 PT2 PT3 PT4 PT5		GT2	GT1,GT2, GT3, PT5	GT1,GT2, GT3	PT1,PT2, PT3, PT4	GT3,PT1 PT2 PT3 PT4 PT5	PT1,PT2, PT3, PT4	GT1, PT1,PT5	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1, PT1 PT2 PT3 PT4	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1,GT2, OP1 OP2 OP3 OP4	GT1,GT3, OP3, OP5
LO02	GT1	GT3		GT1 PT1 PT2 PT3 PT4 PT5	GT1 PT1 PT2 PT3 PT4 PT5		GT2	GT1,GT2, GT3, PT5	GT1,GT2, GT3	PT1,PT2, PT3, PT4	GT3,PT1 PT2 PT3 PT4 PT5	PT1,PT2, PT3, PT4	GT1, PT1,PT5	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1, PT1 PT2 PT3 PT4	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1,GT2, OP1 OP2 OP3 OP4	GT1,GT3, OP3, OP5
LO03	GT1		GT1	GT1 PT1 PT2 PT3 PT4 PT5	GT1 PT1 PT2 PT3 PT4 PT5	GT2		GT1,GT2, GT3, PT5	GT1,GT2, GT3	PT1,PT2, PT3, PT4	GT3,PT1 PT2 PT3 PT4 PT5	PT1,PT2, PT3, PT4	GT1, PT1,PT5	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1, PT1 PT2 PT3 PT4	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1,GT2, OP1 OP2 OP3 OP4	GT1,GT3, OP3, OP5
LO04	GT1		PT1	GT1 PT1 PT2 PT3 PT4 PT5	GT1 PT1 PT2 PT3 PT4 PT5		GT2	GT1,GT2, GT3, PT5	GT1,GT2, GT3	PT1,PT2, PT3, PT4	GT3,PT1 PT2 PT3 PT4 PT5	PT1,PT2, PT3, PT4	GT1, PT1,PT5	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1, PT1 PT2 PT3 PT4	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1,GT2, OP1 OP2 OP3 OP4	GT1,GT3, OP3, OP5
LO05					GT1 PT1 PT2 PT3 PT4 PT5													
LO06	GT1		PT1	GT1 PT1 PT2 PT3 PT4 PT5	GT1 PT1 PT2 PT3 PT4 PT5	GT2	GT2	GT1,GT2, GT3, PT5		PT1,PT2, PT3, PT4	GT3,PT1 PT2 PT3 PT4 PT5	PT1,PT2, PT3, PT4	GT1, PT1,PT5	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1, PT1 PT2 PT3 PT4	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1,GT2, OP1 OP2 OP3 OP4	GT1,GT3, OP3, OP5
LO07	GT1				GT1 PT1 PT2 PT3 PT4 PT5	GT2	GT2	GT1,GT2, GT3, PT5	GT1,GT2, GT3									
LO08			GT1	GT1 PT1 PT2 PT3 PT4 PT5	GT1 PT1 PT2 PT3 PT4 PT5			GT1,GT2, GT3, PT5	GT1,GT2, GT3	PT1,PT2, PT3, PT4	GT3,PT1 PT2 PT3 PT4 PT5	PT1,PT2, PT3, PT4	GT1, PT1,PT5	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1, PT1 PT2 PT3 PT4	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1,GT2, OP1 OP2 OP3 OP4	GT1,GT3, OP3, OP5
LO09		GT3		GT1 PT1 PT2 PT3 PT4 PT5	GT1 PT1 PT2 PT3 PT4 PT5		GT2 PT1	GT1,GT2, GT3, PT5	GT1,GT2, GT3	PT1,PT2, PT3, PT4	GT3,PT1 PT2 PT3 PT4 PT5	PT1,PT2, PT3, PT4	GT1, PT1,PT5	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1, PT1 PT2 PT3 PT4	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1,GT2, OP1 OP2 OP3 OP4	GT1,GT3, OP3, OP5
LO10		GT3	PT1	GT1 PT1 PT2 PT3 PT4 PT5	GT1 PT1 PT2 PT3 PT4 PT5			GT1,GT2, GT3, PT5	GT1,GT2, GT3	PT1,PT2, PT3, PT4	GT3,PT1 PT2 PT3 PT4 PT5	PT1,PT2, PT3, PT4	GT1, PT1,PT5	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1, PT1 PT2 PT3 PT4	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1,GT2, OP1 OP2 OP3 OP4	GT1,GT3, OP3, OP5
LO11				GT1 PT1 PT2 PT3 PT4 PT5	GT1 PT1 PT2 PT3 PT4 PT5			GT1,GT2, GT3, PT5	GT1,GT2, GT3	PT1,PT2, PT3, PT4	GT3,PT1 PT2 PT3 PT4 PT5	PT1,PT2, PT3, PT4	GT1, PT1,PT5	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1, PT1 PT2 PT3 PT4	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1,GT2, OP1 OP2 OP3 OP4	GT1,GT3, OP3, OP5
LO12	GT1		PT1	GT1 PT1 PT2 PT3 PT4 PT5	GT1 PT1 PT2 PT3 PT4 PT5	GT2	GT2 PT1	GT1,GT2, GT3, PT5	GT1,GT2, GT3	PT1,PT2, PT3, PT4	GT3,PT1 PT2 PT3 PT4 PT5	PT1,PT2, PT3, PT4	GT1, PT1,PT5	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1, PT1 PT2 PT3 PT4	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1,GT2, OP1 OP2 OP3 OP4	GT1,GT3, OP3, OP5
LO13			GT1 PT1	GT1 PT1 PT2 PT3 PT4 PT5	GT1 PT1 PT2 PT3 PT4 PT5		GT2 PT1	GT1,GT2, GT3, PT5	GT1,GT2, GT3	PT1,PT2, PT3, PT4	GT3,PT1 PT2 PT3 PT4 PT5	PT1,PT2, PT3, PT4	GT1, PT1,PT5	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1, PT1 PT2 PT3 PT4	GT1,GT2, PT1 PT2 PT3 PT4 PT5	GT1,GT2, OP1 OP2 OP3 OP4	GT1,GT3, OP3, OP5