Study plan

Name of study plan: 01 093 NSTI TZP 2012 základ

Faculty/Institute/Others:
Department:
Branch of study guaranteed by the department: Welcome page
Garantor of the study branch:
Program of study: Welcome page
Type of study: unknown
Required credits: 120
Elective courses credits: 0
Sum of credits in the plan: 120
Note on the plan:

Name of the block: Compulsory courses in the program
Minimal number of credits of the block: 102
The role of the block: P

Code of the group: 12NS*1P-TZP
Name of the group: 2012 NSTI 1.sem povinné TZP
Requirement credits in the group: In this group you have to gain 29 credits
Requirement courses in the group: In this group you have to complete 5 courses
Credits in the group: 29
Note on the group:

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors,* ***authors*** *and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
2371519	**Means of Automatic Control I.**	Z,ZK	6	3P+0C+2L	*	P
2181136	**Processing Equipments Design**	Z,ZK	6	3P+2C	*	P
2151026	**Energy Sources and Conversions**	Z,ZK	6	3P+2C	*	P

Characteristics of the courses of this group of Study Plan: Code=12NS*1P-TZP Name=2012 NSTI 1.sem povinné TZP

2371519	Means of Automatic Control I.	Z,ZK	6
Various categories of means for automatic control according to the different criterions. Main features in each category.Air and hydraulic fluid as a medium for information transfer. Symbols and descriptions in pneumatic and hydraulic diagrams. Pneumatic control systems design. Pneumatic actuators, valves, special pneumatic, electropneumatic devices. Control valves, categories, dimensioning, design, applications. Inteligent pneumatics as an integration of pneumatic, electronic and control components and systems. Valve islands and terminals, standard, with industrial buses communication, programmable. Pneumatic positioning systems.			
2181136	Processing Equipments Design	Z,ZK	6
PEs classification, their parameters and criteria of their rating. Ways of PEs design according their purpose and utilization. Materials used for PEs, welding, corrosion mechanisms and anticorrosion prevention. Dimension of shafts, beams, supports, pipes, heat exchangers and pressure vessels. Sealing and packing of fix parts (flanges) and moving parts (rotating shafts etc.). Practical examples of proper and improper designs of apparatuses. Example of heat exchanger design (heat transfer area calculation, its arrangement, head loss calculation, thermal dilatation, strength calculation, low cycle fatigue (thermal dilatation)).			
2151026	Energy Sources and Conversions	Z,ZK	6

Code of the group: 12NS*2P-TZP
Name of the group: 2012 NSTI 2.sem povinné TZP
Requirement credits in the group: In this group you have to gain 28 credits
Requirement courses in the group: In this group you have to complete 7 courses
Credits in the group: 28
Note on the group:

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors,* ***authors*** *and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
2161083	**Aerodynamics of Ventilation** ***Martin Barták***	Z,ZK	4	2P+1C	*	P
2151164	**Refrigeration Technique and Heat Pumps**	Z,ZK	4	2P+1C	*	P

2161112	**Air Pollution Control** *Jiří Hemerka, Pavel Vybíral* ***Pavel Vybíral*** *Pavel Vybíral (Gar.)*	Z,ZK	4	2P+1C	*	P
2163012	**Project II.** ***Vladimír Zmrhal***	Z	5	0P+4C+0L	*	P

Characteristics of the courses of this group of Study Plan: Code=12NS*2P-TZP Name=2012 NSTI 2.sem povinné TZP

2161083	Aerodynamics of Ventilation	Z,ZK	4
Application of fluid mechanics principles in heating, ventilation and air-conditioning. Solution tools for problems concerning air flow indoors or in ducts.			
2151164	Refrigeration Technique and Heat Pumps	Z,ZK	4
2161112	Air Pollution Control	Z,ZK	4
Fundamentals of the air pollution control with the accent to methods of particulate matter and gaseous pollutants removal, propagation of pollutants in the atmosphere and legislation related to reducing pollutant emissions.			
2163012	Project II.	Z	5
Design of heating systems, heat distributors and systems for using recoverable source of energy. Design of ventilation and air conditioning systems, including gas cleaning and reduction of noise.			

Code of the group: 12NS*3P-TZP
Name of the group: 2012 NSTI 3.sem povinné TZP
Requirement credits in the group: In this group you have to gain 22 credits
Requirement courses in the group: In this group you have to complete 5 courses
Credits in the group: 22
Note on the group:

Code	Name of the course / Name of the group of courses ***(in case of groups of courses the list of codes of their members)*** *Tutors,* ***authors*** *and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
2161079	**Air-Conditioning** ***Vladimír Zmrhal***	Z,ZK	4	2P+1C	*	P
2163013	**Project IV.** *Roman Vavřička* ***Vladimír Zmrhal*** *Vladimír Zmrhal (Gar.)*	Z	5	0P+5C	*	P
2161051	**Heat and Moisture Transfer in Environmental Engineering** *Martin Barták* ***Martin Barták*** *Martin Barták (Gar.)*	Z,ZK	4	2P+1C	*	P
2161102	**Radiant and Industrial Heating** *Roman Vavřička, Jiří Bašta* ***Jiří Bašta*** *Jiří Bašta (Gar.)*	Z,ZK	4	2P+1C	*	P

Characteristics of the courses of this group of Study Plan: Code=12NS*3P-TZP Name=2012 NSTI 3.sem povinné TZP

2161079	Air-Conditioning	Z,ZK	4
Extend knowledge for design, control and evaluation of single-zone and multi-zone air conditioning systems.			
2163013	Project IV.	Z	5
Design of heating systems, heat distributors and systems for using recoverable source of energy. Design of ventilation and air conditioning systems, including gas cleaning and reduction of noise.			
2161051	Heat and Moisture Transfer in Environmental Engineering	Z,ZK	4
Application of heat and mass transfer in environmental engineering. Solution tools for tasks concerned with heat and moisture transfer.			
2161102	Radiant and Industrial Heating	Z,ZK	4
Student will be informed about the basics of radiant and other industrial heating systems			

Code of the group: 12NS*4P-TZP
Name of the group: 2012 NSTI 4.sem povinné TZP
Requirement credits in the group: In this group you have to gain 23 credits
Requirement courses in the group: In this group you have to complete 5 courses
Credits in the group: 23
Note on the group:

Code	Name of the course / Name of the group of courses ***(in case of groups of courses the list of codes of their members)*** *Tutors,* ***authors*** *and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
2161087	**Control of HVAC Systems** ***Jiří Bašta***	Z,ZK	4	2P+1C	*	P
2162056	**Sanitary Installations** *Roman Vavřička* ***Roman Vavřička*** *Roman Vavřička (Gar.)*	KZ	3	2P+1C	*	P

Characteristics of the courses of this group of Study Plan: Code=12NS*4P-TZP Name=2012 NSTI 4.sem povinné TZP

2161087	Control of HVAC Systems	Z,ZK	4
Application of basic approaches to automatic control of HVAC systems and equipment. Automatic control sequences of air conditioning and sources of heat.			

2162056	Sanitary Installations	KZ	3

Elaboration of project documentation in the stage of implementation project in the field of water supply, sewerage and gas consumption facilities. In the field of water supply focused on the design of public water supply connection, energy balance and design of heat source and accumulation for hot water preparation, design of circulation pipeline. In the field of sewerage, the elaboration of the gravity system for the drainage of wastewater from the object under consideration, the design of the sewerage connection and protection against rising water, the design of the recovery of rainwater. In the field of gas consumption facilities, design of the domestic gas pipeline, combustion air supply and flue gas exhaust.

Name of the block: Compulsory elective courses
Minimal number of credits of the block: 18
The role of the block: PV

Code of the group: 12N**3Q--JV
Name of the group: 2012 N 3.sem povinná jazyková výuka
Requirement credits in the group: In this group you have to gain 2 credits
Requirement courses in the group: In this group you have to complete 1 course
Credits in the group: 2
Note on the group:

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors, **authors** and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
2043081	**English - Preparatory Course / FME** *Veronika Kratochvílová*	Z	2	0P+2C	*	PV
2043086	**Czech - Preparatory Course** *Petr Laurich, Hana Volejníková*	Z	2	0P+2C	*	PV
2043083	**French - Preparatory Course / FME** *Dušana Jirovská **Michaela Schusová** Dušana Jirovská (Gar.)*	Z	2	0P+2C	*	PV
2043082	**German - Lower Intermediate Course** *Petr Laurich, Jaroslava Kommová, Eliška Vítková **Jaroslava Kommová** Jaroslava Kommová (Gar.)*	Z	2	0P+2C	*	PV
2043085	**Russian - Preparatory Course / FME** *Hana Volejníková, Dušana Jirovská **Eliška Vítková***	Z	2	0P+2C	*	PV
2043084	**Spanish - Preparatory Course / FME** *Jaime Andrés Villagómez **Eliška Vítková***	Z	2	0P+2C	*	PV

Characteristics of the courses of this group of Study Plan: Code=12N3Q--JV Name=2012 N 3.sem povinná jazyková výuka**

2043081	English - Preparatory Course / FME	Z	2

Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language. European level A1 - A2.

2043086	Czech - Preparatory Course	Z	2

Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.

2043083	French - Preparatory Course / FME	Z	2

Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.

2043082	German - Lower Intermediate Course	Z	2

Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either in the company or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of professional language.

2043085	Russian - Preparatory Course / FME	Z	2

Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.

2043084	Spanish - Preparatory Course / FME	Z	2

Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.

Code of the group: 12N**3Q--JZ
Name of the group: 2012 N 3.sem povinná jazyková zkouška
Requirement credits in the group: In this group you have to gain 1 credit
Requirement courses in the group: In this group you have to complete 1 course
Credits in the group: 1
Note on the group:

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors, **authors** and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
2041081	**English - Master Exam** *Veronika Kratochvílová, Hana Volejníková, Ilona Šimice, Michaela Schusová, Michele Le Blanc Ilona Šimice (Gar.)*	ZK	1	0P+0C	*	PV

2041086	**Czech- Master Exam** *Petr Laurich, Hana Volejníková*	ZK	1	0P+0C	*	PV
2041083	**French - Master Exam / FME** *Dušana Jirovská* ***Dušana Jirovská*** *Dušana Jirovská (Gar.)*	ZK	1	0P+0C	*	PV
2041082	**German - Master Exam / FME** *Petr Laurich, Jaroslava Kommová, Eliška Vítková* ***Jaroslava Kommová*** *Jaroslava Kommová (Gar.)*	ZK	1	0P+0C	*	PV
2041085	**Russian - Master Exam / FME** *Hana Volejníková, Dušana Jirovská* ***Eliška Vítková***	ZK	1	0P+0C	*	PV
2041084	**Spanish - Master Exam / FME** *Jaime Andrés Villagómez* ***Eliška Vítková*** *Jaime Andrés Villagómez (Gar.)*	ZK	1	0P+0C	*	PV

Characteristics of the courses of this group of Study Plan: Code=12N3Q--JZ Name=2012 N 3.sem povinná jazyková zkouška**

2041081	English - Master Exam	ZK	1
Mapped to the level of Common European Framework of Reference: A2. Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.			
2041086	Czech- Master Exam	ZK	1
2041083	French - Master Exam / FME	ZK	1
Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of professional language.			
2041082	German - Master Exam / FME	ZK	1
Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of professional language.			
2041085	Russian - Master Exam / FME	ZK	1
Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of professional language.			
2041084	Spanish - Master Exam / FME	ZK	1
Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of professional language.			

Code of the group: 12NS*2Q-TZP
Name of the group: 2012 NSTI 2.sem 1povvol TZP
Requirement credits in the group: In this group you have to gain 3 credits
Requirement courses in the group: In this group you have to complete 1 course
Credits in the group: 3
Note on the group:

Code of the group: 12NS*3Q-TZP
Name of the group: 2012 NSTI 3.sem 2povvol TZP
Requirement credits in the group: In this group you have to gain 6 credits
Requirement courses in the group: In this group you have to complete 2 courses
Credits in the group: 6
Note on the group:

Code of the group: 12NS*4Q-TZP
Name of the group: 2012 NSTI 4.sem 2povvol TZP
Requirement credits in the group: In this group you have to gain 6 credits
Requirement courses in the group: In this group you have to complete 2 courses
Credits in the group: 6
Note on the group:

List of courses of this pass:

Code	Name of the course	Completion	Credits
2041081	English - Master Exam	ZK	1
Mapped to the level of Common European Framework of Reference: A2. Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.			

2041082	German - Master Exam / FME	ZK	1
Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of professional language.			
2041083	French - Master Exam / FME	ZK	1
Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of professional language.			
2041084	Spanish - Master Exam / FME	ZK	1
Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of professional language.			
2041085	Russian - Master Exam / FME	ZK	1
Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of professional language.			
2041086	Czech- Master Exam	ZK	1
2043081	English - Preparatory Course / FME	Z	2
Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language. European level A1 - A2.			
2043082	German - Lower Intermediate Course	Z	2
Mapped to the level of Common European Framework of Reference A2 Aim: Understanding clearly spoken language about everyday situations which a student meets either in the company or in his/her free time and speaking about them. Writing in a simple way about familiar topics. reading and comprehesion of simple texts. Improvement of professional language.			
2043083	French - Preparatory Course / FME	Z	2
Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.			
2043084	Spanish - Preparatory Course / FME	Z	2
Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.			
2043085	Russian - Preparatory Course / FME	Z	2
Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.			
2043086	Czech - Preparatory Course	Z	2
Aim: Understanding clearly what is spoken about everyday situations which a student meets at school or in his/her free time and speaking about them. Writing in a simple way about familiar topics. Reading and comprehension of simple texts. Improvement of professional language.			
2151026	Energy Sources and Conversions	Z,ZK	6
2151164	Refrigeration Technique and Heat Pumps	Z,ZK	4
2161051	Heat and Moisture Transfer in Environmental Engineering	Z,ZK	4
Application of heat and mass transfer in environmental engineering. Solution tools for tasks concerned with heat and moisture transfer.			
2161079	Air-Conditioning	Z,ZK	4
Extend knowledge for design, control and evaluation of single-zone and multi-zone air conditioning systems.			
2161083	Aerodynamics of Ventilation	Z,ZK	4
Application of fluid mechanics principles in heating, ventilation and air-conditioning. Solution tools for problems concerning air flow indoors or in ducts.			
2161087	Control of HVAC Systems	Z,ZK	4
Application of basic approaches to automatic control of HVAC systems and equipment. Automatic control sequences of air conditioning and sources of heat.			
2161102	Radiant and Industrial Heating	Z,ZK	4
Student will be informed about the basics of radiant and other industrial heating systems			
2161112	Air Pollution Control	Z,ZK	4
Fundamentals of the air pollution control with the accent to methods of particulate matter and gaseous pollutants removal, propagation of pollutants in the atmosphere and legislation related to reducing pollutant emissions.			
2162056	Sanitary Installations	KZ	3
Elaboration of project documentation in the stage of implementation project in the field of water supply, sewerage and gas consumption facilities. In the field of water supply focused on the design of public water supply connection, energy balance and design of heat source and accumulation for hot water preparation, design of circulation pipeline. In the field of sewerage, the elaboration of the gravity system for the drainage of wastewater from the object under consideration, the design of the sewerage connection and protection against rising water, the design of the recovery of rainwater. In the field of gas consumption facilities, design of the domestic gas pipeline, combustion air supply and flue gas exhaust.			
2163012	Project II.	Z	5
Design of heating systems, heat distributors and systems for using recoverable source of energy. Design of ventilation and air conditioning systems, including gas cleaning and reduction of noise.			
2163013	Project IV.	Z	5
Design of heating systems, heat distributors and systems for using recoverable source of energy. Design of ventilation and air conditioning systems, including gas cleaning and reduction of noise.			
2181136	Processing Equipments Design	Z,ZK	6
PEs classification, their parameters and criteria of their rating. Ways of PEs design according their purpose and utilization. Materials used for PEs, welding, corrosion mechanisms and anticorrosion prevention. Dimension of shafts, beams, supports, pipes, heat exchangers and pressure vessels. Sealing and packing of fix parts (flanges) and moving parts (rotating shafts etc.). Practical examples of proper and improper designs of apparatuses. Example of heat exchanger design (heat transfer area calculation, its arrangement, head loss calculation, thermal dilatation, strength calculation, low cycle fatigue (thermal dilatation)).			
2371519	Means of Automatic Control I.	Z,ZK	6
Various categories of means for automatic control according to the different criterions. Main features in each category.Air and hydraulic fluid as a medium for information transfer. Symbols and descriptions in pneumatic and hydraulic diagrams. Pneumatic control systems design. Pneumatic actuators, valves, special pneumatic, electropneumatic devices. Control valves, categories, dimensioning, design, applications. Inteligent pneumatics as an integration of pneumatic, electronic and control components and systems. Valve islands and terminals, standard, with industrial buses communication, programmable. Pneumatic positioning systems.			

For updated information see http://bilakniha.cvut.cz/en/FF.html
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