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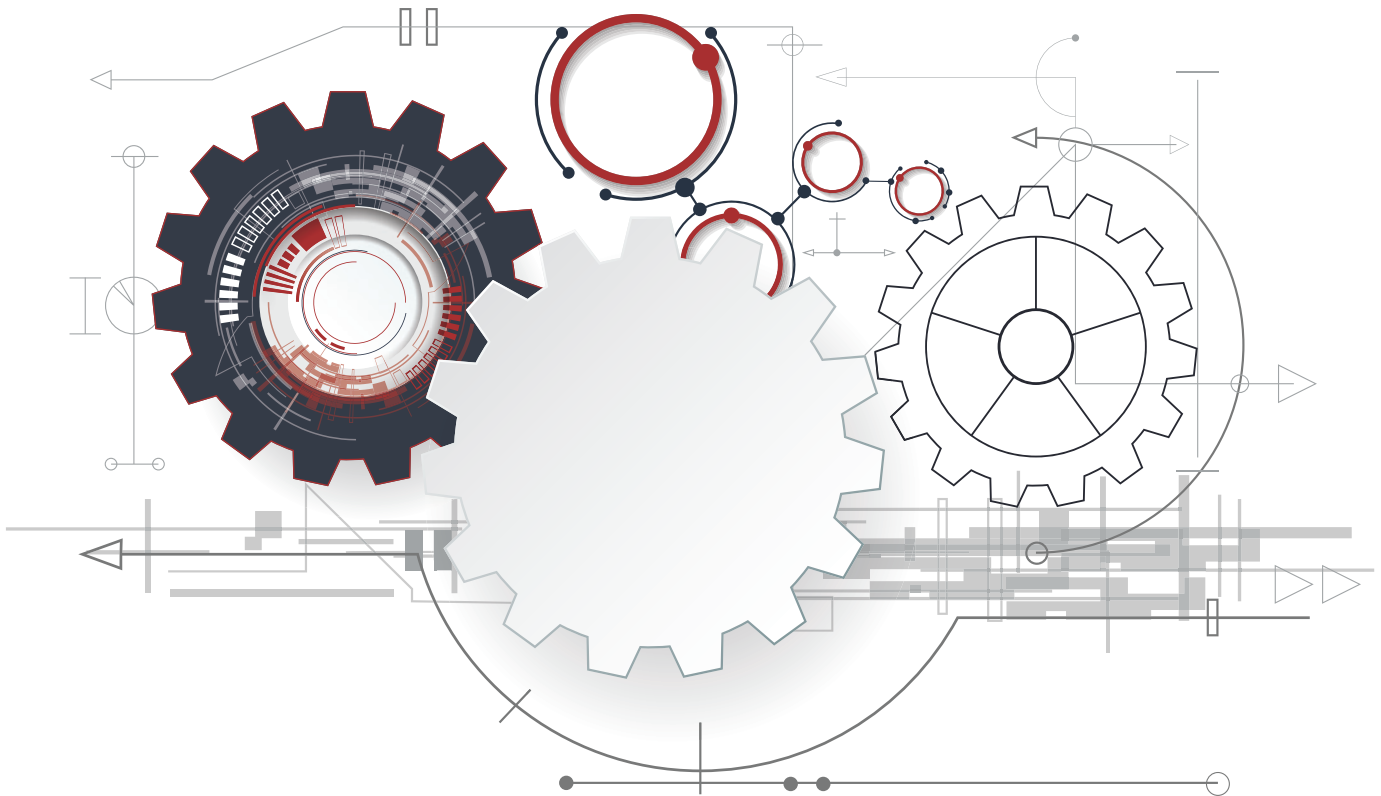
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Mechanical engineering



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Aligning Education with
Labour Market Needs

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THE **MECHANICAL**
ENGINEERING SKILL SECTOR
AT A GLANCE

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LIST OF ABBREVIATIONS

ALLED	ALIGNING EDUCATION WITH LABOUR MARKET NEEDS
CAD	COMPUTER AIDED DESIGN
CNC	COMPUTER NUMERICAL CONTROL
CVETAE	COUNCIL FOR VOCATIONAL EDUCATION AND TRAINING AND ADULT EDUCATION
ENG	MECHANICAL ENGINEERING SECTOR
HE	HIGHER EDUCATION
ICT	INFORMATION AND COMMUNICATIONS TECHNOLOGY
IT	INFORMATION TECHNOLOGY
KAA	KOSOVO ACCREDITATION TECHNOLOGY
KAS	KOSOVO AGENCY OF STATISTICS
LFS	LABOUR FORCE SURVEY
MEST	MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
MRI	MEDICAL RESONANCE IMAGE
NQA	NATIONAL QUALIFICATION AUTHORITY
NQF	NATIONAL QUALIFICATION FRAMEWORK
PM	PRIME MINISTER
VET	VOCATIONAL EDUCATION AND TRAINING

THE MECHANICAL ENGINEERING SKILL SECTOR AT A GLANCE

The skill sector Mechanical engineering (ENG) in Kosovo and in many other countries is the backbone of the manufacturing industry, shipbuilding and metallurgy. The skills acquired through the secondary and tertiary qualifications from Mechanical engineering skill sector have a very wide use in the economy as well as being the forerunners of technological change and innovation. However, the size or scope of this skill sector has diminished in the process of industry decline in Kosovo and now numbers less than 16 thousand employed and close to 4 thousand unemployed with occupations from the Mechanical engineering skill sector.

The dispersion of ENG occupations is substantial as they can be traced to 66 out of 86 economic activities. However, about 50% of all these occupations work in 7 key economic activities such as: Repair and installation of machinery and equipment, Manufacture of fabricated metal products, Wholesale and retail trade, Specialized construction activities, Electricity, gas and air conditioning supply, Other personal service activities such as installation and repair of heating, cooling or plumbing services and Other manufacturing. Job growth across the economy from 2008 to 2013 was considerable (75%) over this period which indicates that skills need to match a fast expanding demand on the labour market. However, it is unlikely that such growth will be as dynamic as in the past since the beginning of growth was from a very low initial level of only just above 8 thousand employed.

Regarding the employability of ENG occupations from the register of the Kosovo employment service as perceived through the vacancy to unemployment ratio is above average at 86.5% which means that this percentage of the unemployed with ENG occupations found jobs in 2015. Since we are attempting to ascertain demand at 3 levels of skills, i.e. for jobs which require higher education, secondary education and adult education we can see that there are substantial differences in demand according to required NQF level qualifications. The highest demand is for ENG occupations which require secondary school qualifications and lower for occupations which require higher education or adult education. The relatively low demand for highly qualified persons from the ENG sector is reflected in the high unemployment rates of graduates of nearly 49% which may indicate that the enrolment quotas may be too high. However, since the graduation rate is relatively low, and falling in time, the greatest problem seems to be the large dropout of students before they acquire their qualifications. The other challenge facing the skill sector is the lack of coverage by training programmes of occupations which require 4-year secondary VET education, i.e. technicians. This level of training is missing in the present Kosovo education system as VET schools now last only 3 years. Yet, technicians are required by industry and cannot be replaced in existing jobs by 3-year training provision.

Finally, the demand for skills in Mechanical engineering may be larger than the supply of these skills in the future even though there is now a surplus of workers with these occupations in the country. This is due to two main factors:

- More than 50% of secondary school graduates show a preference to continue their studies at university and are thus lost to the labour market with their VET skills.
- At the same time, the labour market has highest demand in particular for secondary level qualifications and not for higher level qualifications due to low absorption capacity for higher qualifications.
- Low graduation rates from universities indicate that many students end up on the labour market anyway with secondary diplomas but they may also have lost some of the skills learned at school when they attempt to enter the labour market.
- The gender balance in the ENG skill sector is very unequal in favour of male employment and participation in education. However, women, although they are present only in small percentage are more successful at graduating than men and are more successful at finding work when they have HE qualifications.

<input type="checkbox"/> DEMAND	<input type="checkbox"/> SUPPLY	<input type="checkbox"/> D/S BALANCE
Currently small skill sector in the economy <input type="checkbox"/>	Good coverage of occupation groups by qualifications <input type="checkbox"/>	Demand and supply seem to be well balanced at this time since there is a very small surplus of labour on the labour market <input type="checkbox"/>
Many economic sectors employ workers with eng occupations <input type="checkbox"/>	Gap in supply of qualicifations for occupation group technicians, nfq level 5 <input type="checkbox"/>	
High job growth <input type="checkbox"/>		
Medium employment potential from public employment service <input type="checkbox"/>		

RECOMMENDATION FOR NQA and MEST:

Encourage the development of occupational standards for occupations in the mechanical engineering sector particulary level 4 and 5 due to expected medium to high demand for these occupations in the future

Develop occupational standards for higher education with focus on areas of future demand based on the development strategy for kosova, particulary in manufacturing, mining and energy sectors

1.

Introduction

A sector profile is a document which portrays the labour market situation in a particular field of knowledge and skills. The main purpose of a sector profile is to answer the following questions:

1. How important is the skill sector of Mechanical engineering in the Kosovo economy in terms of skill use?
2. What is the demand for mechanical engineering occupations now and in the past?
3. Is the supply of labour from education (graduates) and unemployment with these occupations adequate or are there skill gaps?
4. Should enrolment quotas be increased or decreased?
5. What is the labour market position of mechanical engineering occupations for which standards are being suggested?

The answers to these questions should help in understanding and assessing the labour market relevance of occupational standards and training programmes in the processes of verification and accreditation which are undertaken by responsible institutions such as the Council for VET (CVETA), the National Qualification Authority and the Kosovo Accreditation Agency (KAA). However, this profile can also serve all potential applicants for the development of standards to see in advance whether there is a labour market need for the skills and knowledge which they would like to introduce or if there is already excess supply of such skills in the economy. Providing argumentation for the demand for skills is important in Kosovo due to the large demand for education, particularly higher education while the demand for labour is still weak and unable to absorb all the unemployed and the graduates.

The present sector profile has been developed on the basis of a methodology explained in the document "Methodology for developing sector profiles"¹. The overall approach is also based on a Concept of aligning education with labour market needs which has been developed within the ALLED project². The concept and the methodology have been developed on the basis of data available in Kosovo and on certain hypothesis regarding the supply and demand for labour which are explained in these document³.

1 The Methodology for developing sector profiles is also developed in the frame of ALLED Project and can be found in project website under www.alledkosovo.com.

2 A similar methodology is being used for the same purpose in the National Qualification Framework of Croatia, but it has been adopted to the Kosovo environment and needs.

3 All the mentioned documents can be found on the project web page www.alledkosovo.com

1.1

Methodology

The sector profile analyses demand and supply of sector skills in the Kosovo economy by bringing together information about employment and vacancies (demand for labour) and unemployment and graduates coming from education (supply of labour).

Each sector profile measures supply and demand for skills based on 6 indicators.

DEMAND INDICATORS ARE:

1. Scope – measuring the size of the skill sector in terms of employment
2. Dispersion – measuring the use of skills in economic activities
3. Job growth – showing how demand for skills is expanding
4. Employment potential – measuring the employability of occupations from the skill sector

SUPPLY SIDE INDICATOR IS:

5. Training coverage – how well occupations are covered by training programmes

SUPPLY AND DEMAND BALANCE INDICATOR IS:

6. The skill balance estimate – an indicator which shows how many workers will be demanded and how many job seekers will be available in the mid-term with skill sector occupations at 4 chosen NQF level groups.

The structure of the sector profile follows the described indicators and quantifies through them the demand and supply for skill sector occupations in Kosovo.

1.2

Glossary of terms used in the sector profile

Sector profile – a quantitative and qualitative assessment of the demand and supply of skills in a knowledge area

Skill sector – groups of qualifications (training programmes) which develop skills in a particular field of knowledge and occupations which use these skills on the labour market

Skill sector occupation – an occupation which belongs to a certain skill sector

Skill sector qualification (training programme) – a training programme with learning outcomes which are required for work in skill sector occupations in the economy

Correspondence table – a link between levels of the National qualification framework and the major ISCO groups in the Kosovo classification of occupations

Economic activity – type of production or services which is being performed by enterprises in the economy as measured by the International classification of economic activities NACE 2007

Scope of the skill sector – is an indicator of demand for sector skills which is measured by the share of employment in skill sector occupations in total employment

Dispersion of the skill sector – is an indicator of demand for sector skills which is measured by the % of economic activities which employ skill sector occupations in the total number of NACE 2007 economic activities in Kosovo

Job growth – is an indicator of demand for sector skills which is measured by the change in employment in skill sector occupations over a period of time in the whole economy

Employment potential – is an indicator of demand for sector skills which is measured by the number of vacancies declared for skill sector occupations in relation to the number of the unemployed with the same occupations on the register of the Kosovo employment agency in a year

Training coverage – is an indicator of the supply of sector skills which is measured by the provision of skill sector programmes at each NQF level for each of the ISCO major groups of occupations

2.

Labour Demand

2.1. INDICATOR 1: SCOPE OF THE SKILL SECTOR MECHANICAL ENGINEERING

Mechanical engineering is a skill sector which usually encompasses several segments: metallurgy, mechanical engineering, shipbuilding and mechanical services like installation of heating and cooling systems and car mechanics (the ENG sector in further text). This field of knowledge is essential for many industries, mostly manufacturing industries but also any machine driven economic activities such as transport, machine building and maintenance, ICT, telecommunications and other. Usually this skill sector has a very wide range of uses in the whole economy and is an essential component of most economic activities. From home appliances to hi-tech industries, mechanical engineering has a pivotal role and is an essential, underlying skill for economic development but more particularly for industrial development.

The scope or size of a sector in the economy is measured by the share of individuals with skill sector occupations in total employment. We measure scope for the whole sector and separately for the skill sector NQF levels. We provide scope indicators only for 4 groups of NQF levels: level 1 and 2, level 3, level 4 and level 5 and higher.

In table 1 are some of the basic labour market indicators for the skill sector Mechanical engineering and scope indicators are shown in column 9.

Table 1 – Basic labour market indicators for the skill sector Mechanical engineering (ENG)

	Total Employment	ENG Employment	Total Registered Unemployment	ENG Unemployment	ENG Labour Force	Total Labour Force	Total Unemployment Rate, %	ENG Unemployment Rate, %	Scope Of ENG skill Sector
	(1)	(2)	(3)	(4)	(5)	(6)	3)/(6)= (7)	(4)/(5)= (8)	(2)/(1)= (9)
Total	342,073	14,696	103,401	3,442	18,128	445,475	23.2	19.0	4.3
Occupations requiring NQA level 5+ education	104,685	1,143	13,373	1,128	2,271	118,058	11.3	49.7	1.1
Occupations requiring NQF level 3,4 education	163,803	12,315	14,141	2,310	14,615	177,944	8.0	15.8	7.5
Occupations requiring NQF level 1,2 education	73,584	1,238	75,877	4	1,242	149,471	50.8	0.3	1.7

Source: Labour force survey 2013 for employment data, registered unemployment – Ministry of labour and social welfare 2015. (Resource pack: DATA ALL.xlsx)

2.1.

INDICATOR 1: SCOPE OF THE SKILL SECTOR MECHANICAL ENGINEERING

EMPLOYMENT

There were 14,696 persons employed in the Kosovo economy with ENG occupations in 2013, which is 4.3% of total employment. In column 1 we can see employed who have occupations by NQF level requirements. Of all occupations in the economy and in the ENG skill sector the most numerous are those in occupations which require NQF level 3 and 4 qualifications. There were 163 thousand employed in the whole economy and 12.3 thousand of them had ENG occupations. On the other hand, in the whole economy occupations requiring NQF levels 1 and 2 are much more important than in the ENG sector, 21.5% of total employment and 8.4% in the ENG sector. There is also a large difference in the share of occupations which require higher education qualifications. For the whole economy this share was 30.6% and in the ENG sector it was only 7.7%. When the share of occupations with higher education requirements is low, the likelihood that the sectors who employ them may either not be able to absorb the skills or they are not interested in becoming more competitive.

UNEMPLOYMENT

Total registered unemployment in the whole economy in 2015 was 103,401 and in the ENG sector it was 3,442 registered unemployed. Most of the unemployed in the whole economy have occupations with low NQF training requirements (72.6%). This is not the case for the ENG sector where most of the unemployed have occupations which require NQF level 4 training (65.1%).

UNEMPLOYMENT RATES

When we add the employed and the unemployed we get the labour force and we can calculate the unemployment rates in the whole economy and by NQF level requirements⁴. In 2013, the overall unemployment rate was 24.5% while it was 18.6% in ENG occupations which indicates that this skill sector has somewhat higher employability than average in the Kosovo economy.

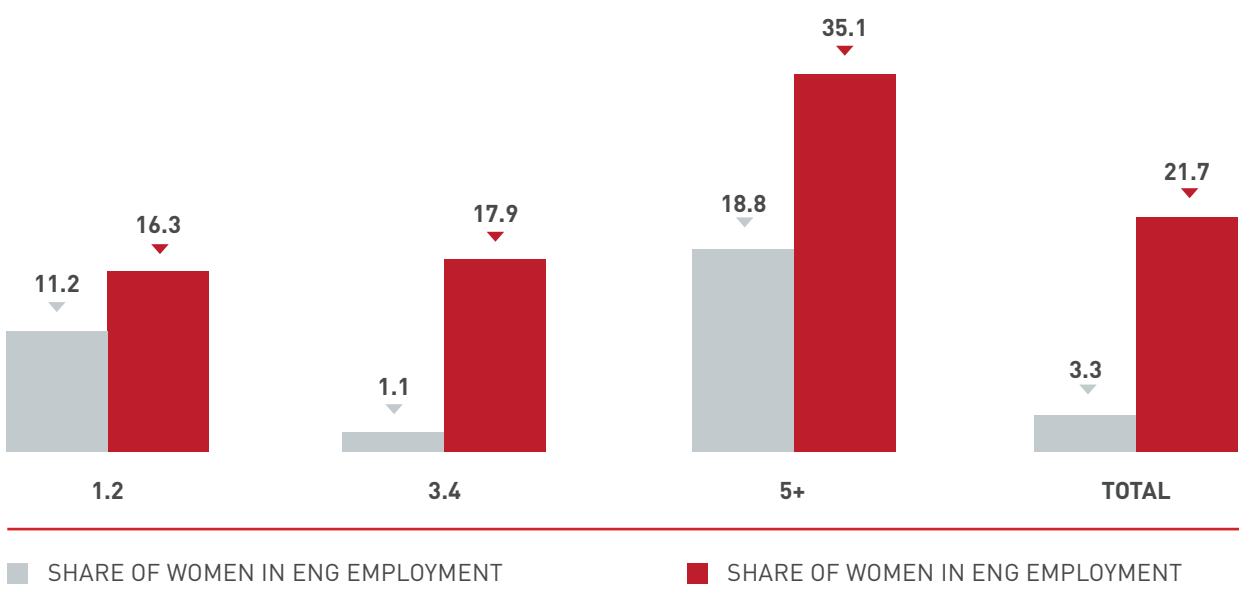
Lowest unemployment rates are in occupations requiring NQF level 3 qualifications and less, while occupations requiring secondary level education and higher education have above average unemployment rates.

GENDER BALANCE IN EMPLOYMENT AND UNEMPLOYMENT

A glance at graph below indicates a negative gender balance in ENG sector employment in comparison to total employment. In all occupations groups with different NQA requirements the share of women is below average, particularly in the NQF levels 3 and 4 which have the highest employment count but the share of women is only 1.1%. The lowest gender difference is in occupations which require higher education where the share of women is 18.8%, which still falls below the level in the whole economy where the share is 35.1%.

⁴ Unemployment rate = Unemployed / Labour force x 100.

Graph 1 - Share of women in ENG and total employment by NQF level requirements, LFS 2013



Source: LFS 2013, Kosovo agency of statistics.

Overall, it is clear that the low share of women in total employment of 21.7% is considerably lower in the Mechanical engineering skill sector which indicates a gender gap leading to unequal opportunities for women in this medium to fast growing skill sector. If this balance is not encouraged to close, these new job opportunities will be lost to women in the future.

MEASURING SCOPE

As indicated in the glossary, the SCOPE of the skill sector indicates the importance of skill sector occupations for total employment in the economy. The larger the scope, the more important the skill sector is. We calculate the scope for the whole skill sector and the scopes by each of the chosen groups of occupations by NQF level requirement.

The scope of the whole ENG sector is 4.7% which indicates that this is a small skill sector overall⁵. However, since we are interested in the employability of different groups of occupations depending on their training level requirement, the ENG sector occupations are broken down in the table by NQF qualification levels and shown in graph 1⁶.

The scope of skill sector occupations in total employment was highest for NQF level 3 (10.2%) and for NQF level 4 (7.3%) while it was lower for NQF level 5+ (1,4%) and NQF level 1-2 (1,7%).

In summary, the overall scope of the ENG sector is small but when occupations are grouped by different NQF level requirements we see that the largest scope exists for NQF levels 3 and 4 and the lowest for NQF levels 5+ and NQF 1,2. This shows that the importance for the economy is highest for NQF levels which require secondary VET education as they are most needed in the economy at this level of development.

This does not mean, however, that the economic development in the future will not need more persons with higher qualifications which are very much needed for industrial development, innovation, research and for facing global competitiveness. However, the speed at which the economy will be able to absorb these HE qualifications has to be carefully monitored so that numbers of graduates do not exceed the speed at which the economy creates jobs for the highly educated.

If employment quotas are too large, this will result in unemployment of HE graduates or employers may employ HE graduates in places of VET graduates for which they are overqualified and underpaid.

⁵ The values of indicators have the following intervals: More than 20% share in total employment – LARGE SCOPE; From 8 – 20% - MEDIUM; 3 – 8% SMALL SCOPE; Below 3% - VERY SMALL SCOPE.

⁶ The allocation of NQF level requirements for each occupation is different for every country and it should be done by experts in each skill sector and expressed in the correspondence tables.

2.2

INDICATOR 2: DISPERSION AND CONCENTRATION OF ENG OCCUPATIONS

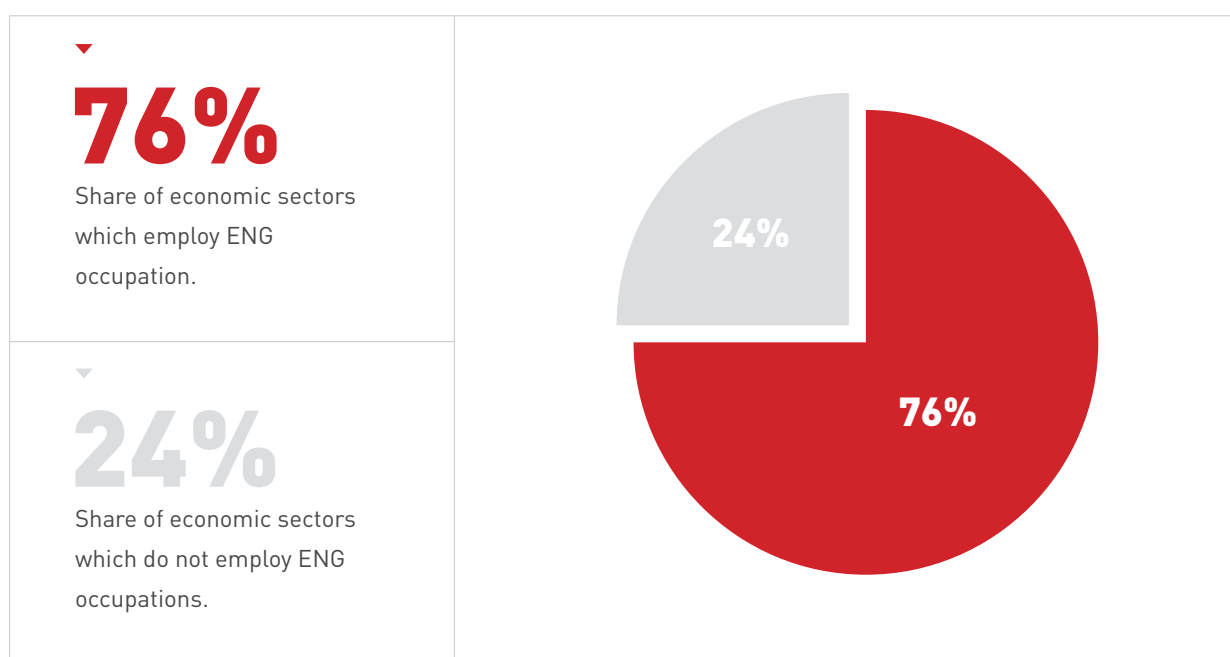
DISPERSION

This indicator measures the numbers of economic activities which employ occupations from the skill sector. If ENG occupations are needed in many economic activities, there is more chance that demand will be high and that persons with these occupations will have better chances of finding employment.

Therefore, the wider the dispersion, the higher the labour market relevance of the sector.

We have seen in table 1 that the employment in the Mechanical engineering skill sector is about 14.7 thousand which is 4.6% of total employment (according to LFS). In order to calculate the DISPERSION of ENG occupations we have to see where persons with these occupations are employed in the economy. In order to do that we will cross-reference employment data by occupation with data by economic activity for all occupations in the Mechanical engineering skill sector.

Graph 2 - Dispersion Of Eng Occupations In The Economy



DISPERSION (CONTINUE)

In the case of the ENG skill sector, ENG occupations are present in 66 out of 86 economic activities, i.e. in 76% of all economic activities in Kosovo. From this we can deduce that dispersion is high since it falls into the interval of above 60% of all the economic activities⁷. It is also important to measure dispersion of ENG occupations by NQF level requirements. At NQF level 1,2 which corresponds to simple ISCO occupations they are employed in 44 economic sectors; occupations which require NQF level 3 or 4 can work in 45 economic sectors while occupations which require post-secondary qualifications of level NQF 5+ seem to work predominantly in 43 economic sectors. Therefore, dispersion is very similar for occupations regardless of the levels of complexity, i.e. qualifications but it is lower than the dispersion of occupations for the whole sector which indicates that overlap between levels of occupations is not 100%, i.e. some occupations for which higher education is required may not appear in the same economic activities as occupations which require secondary VET training. For example, occupations of teachers who teach technical subjects for which higher education qualification is required appear mostly in economic activity "Education", code 85 of NACE rev.2. In this economic activity there are no simple occupations from ISCO level 9 at all. In the same way, there are no occupations which require HE qualifications in as many as 12 economic activities which require lower qualifications.

CONCENTRATION – KEY ECONOMIC ACTIVITIES

Although dispersion is very important for understanding the overall use of skill sector occupations in the economy, we need to know which economic activities employ large numbers of skill sector occupations. We call them the key economic activities. There are two ways of defining key economic activities:

1. Economic activities which have a high share of skill sector occupations in their total employment
2. Other sectors which do not belong under 1, but they employ considerable numbers of all skill sector occupations.

In order to identify them we will look at the share of these occupations in all the 66 economic sectors where ENG occupations are employed. If this share is high, it is safe to say that the change in employment in these economic activities will significantly influence also the demand for ENG occupations.

In table 2 below we show the numbers of employed with mechanical engineering occupations in the economic activities which have at least 15% of employed person with these occupations. In the 1st column we have total employment in each economic activity in 2013. In table 2 below we show the numbers of employed with mechanical engineering occupations in the economic activities which have at least 15% of employed person with these occupations. In the 1st column we have total employment in each economic activity in 2013. In the 2nd column we show the number of employed women in these economic activities and in the 3rd column we show the total number of employed with ENG occupations, while the 4th column shows women with ENG occupations. In the 5th column we show the share of ENG occupations in the total employment by economic sector, and the share of each economic sector in total ENG employment in the 6th. The last two columns relate to the share of women in total employment and the share of women in total ENG employment.

⁷ Values of indicator for dispersion: Up to 30% - LOW DISPERSION; From 31 - 60% - MEDIUM DISPERSION; above 60% - HIGH DISPERSION.

Table 2 – Key economic activities which employ ENG occupations

	Total Employment (LFS)	Female Total Employment	Total ENG Employment	Female ENG Employment	Share of ENG in total Employment	Share of e.c.sec in total ENG Employment	Share of Women in total Employment	Share of Women in ENG Employment
NACE name	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
33 Repair and installation of machinery and equipment	4,040	71	2,109	--	52.2	14.3	1.8	--
25 Manufacture of fabricated metal products	2,429	--	1,170	--	48.2	7.9	--	--
23 Manufacture of other non-metallic mineral products	2,823	77	520	8	18.4	3.5	2.7	1.6
24 Manufacture of basic metals	941	19	350	19	37.2	2.4	2.0	5.3
43 Specialized construction activities	7,047	129	975	3	13.8	6.6	1.8	0.3
07 Mining of metal ores	1,879	86	358	--	19.1	2.4	4.6	--
29 Manufacture of motor vehicles	271	--	217	--	80.1	1.5	--	--
27 Manufacture of electrical equipment	2,818	78	437	11	15.5	3.0	2.8	2.6
35 Electricity, gas, steam and air conditioning supply	5,826	519	723	17	12.4	4.9	8.9	2.4
09 Mining support service activities	749	34	224	--	29.8	1.5	4.6	--
32 Manufacturing n.e.c.	6,584	894	666	26	10.1	4.5	13.6	4.0
45 Wholesale and retail trade and repair of motor vehicles	14,408	2,747	1,106	--	7.7	7.5	19.1	--
95 Repair of computers and personal and household goods	1,696	190	257	4	15.1	1.7	11.2	1.4
96 Other personal service activities	9,978	3,117	677	--	6.8	4.6	31.2	--
36 Water collection, treatment and supply	2,212	138	231	14	10.5	1.6	6.2	6.1
22 Manufacture of rubber and plastics products	1,380	83	188	12	13.7	1.3	6.0	6.3
-- Others with share of ENG employment less than 15%	278,371	69,978	4,518	374	1.6	31.1	25.1	8.3
TOTAL	342,073	78,076	14,537	476	4.2	100	22.8	3.3

Source: Labour force survey, 2013, KAS

CONCENTRATION – KEY ECONOMIC ACTIVITIES (CONTINUE)

Most of the ENG occupations can be found in the manufacturing industry, particularly in metal and non-metal production but also in manufacture of rubber and plastics, manufacture of electrical equipment, motor vehicles and in mining. There are also other economic activities which are not so typical for ENG occupations such as trade but also personal services which encompass occupations relating to heating, cooling, plumbing and similar.

The share of ENG occupations in total employment of economic activities is shown in column (5) and the highest shares can be found in Manufacture of motor vehicles where the share of ENG occupations was 80,1%; Repair and installation of machinery and equipment with 52.2%, Manufacture of fabricated metal products with 48% and Manufacture of basic metals, 37.2%, etc.

However, when we calculate which economic activities contribute most to total employment in the ENG skill sector we also get some other activities such as Wholesale, retail and repair of motor vehicles activities (7.5% of all ENG employment), Special construction activities (6.6% of all ENG employment), Electricity, gas, steam and air conditioning supply (4.9%), etc.

These are the 16 key economic activities which employ ENG occupations but the remaining 50 activities also contribute significantly to ENG employment but with smaller shares and employment.

Information on key economic activities can be used to assess the skill requirements by municipalities and regions. If the share of these economic activities is high, it can be assumed that training programmes from the skill sector also have to provide the necessary skills at this sub-national level.

GENDER BALANCE IN ENG EMPLOYMENT

We are also interested in employment by gender and would like to see what the employment opportunities are for women in this skill sector. In the above table we can see what the share of women is in the key ENG economic activities. The share of women in total employment is 22.8% which is relatively low by European standards but this share is much lower for the ENG skill sector where it is only 3.3%. This situation is similar in all economic activities individually. Although the share of women in key ENG industries is low, it is even lower in ENG occupations within those industries. For example, the highest share of women is in Other personal service activities (31.2%) but there are no employed women in ENG occupations within this activity. Similarly, in Other manufacturing n.e.c. where the share of women in total employment is 13.6%, the share of women in ENG occupations is only 4%. This low representation of women in key economic activities for ENG and in ENG occupations generally could be a reflection on low enrolment of women in the ENG qualifications but also some form of discrimination in employment of women and perhaps a low propensity of women to choose these occupations. This point will be discussed below when employment from the unemployment register is shown by gender and ENG occupation.

DIFFERENCES IN DEMAND BY NQF LEVEL REQUIREMENTS

In this section we show key economic activities by NQF level requirements. There is only one economic activity which is common to all the level requirements and that is Construction in its various forms as shown in table 3. Occupations requiring higher education qualifications are

Table 3 – Top 5 key economic activities by NQF level requirements of occupation groups

ISCO 9 / NQF 1,2	ISCO 7,8 / NQF 3,4	ISCO 1,2,3 / NQF 5+
Other manufacturing n.e.c.	Repair and installation of machinery and equipment	Education
Manufacture of food products	Manufacture of fabricated metal products, except machinery and equipment	Electricity, gas, steam and air conditioning supply
Manufacture of electrical equipment	Wholesale and retail trade and repair of motor vehicles and motorcycles	Construction of buildings
Specialized construction activities	Specialized construction activities	Telecommunications
Manufacture of furniture	Other personal service activities	Architecture and engineering activities; technical testing and analysis

Source: LFS, 2013 KAS

Education. Electricity, gas, steam and air conditioning supply, Construction of building and Telecommunications, while other occupations which require VET level qualifications find work in Repair and maintenance of machinery and equipment, Manufacture of fabricated metal products, Wholesale and retail trade, etc. Measuring DISPERSION

In summary, the sector of Mechanical engineering has high dispersion because these occupations find employment in more than 60% of all economic sectors of the economy which gives individuals them a wider choice of finding work and higher likelihood that demand will be adequate. There are about 16 key economic activities which employ most of the ENG occupations but these activities vary from one ISCO/NQF level to another.

2.3

INDICATOR 3: JOB GROWTH IN ENG OCCUPATIONS

Another very important indicator of demand for labour which influences the decision on validation of standards and approval of qualifications is job growth. Qualifications should track those economic sectors which are displaying prominent job growth since this is the most direct expression of the rise in demand for labour. If more jobs are being created, the likelihood that persons with these occupations will find work is increasing.

MEASURING JOB GROWTH

Now that we know where ENG occupations can be found in the economy we can look at the employment growth rates from 2008-2013 by using the LFS database.

In the graph below we can see levels of employment in all economic activities which employ Mechanical engineering in the two years and the change which has occurred in employment during this time. Based on this we can see what the employment growth index has been for ENG occupations in each of the economic activities.

Total employment in ENG occupations was 8,378 in 2008 and it grew to 14,696 by 2013 which is an increase of 6,318 employed. This is a growth rate of 75% and the growth index was 175. Most dynamic growth was in those economic sectors which are key for the ENG skill sector such as Repair and installation of machinery and equipment, Manufacture of fabricated metal products, Wholesale retail and repair of motor vehicles, Specialized construction activities and similar economic sectors.

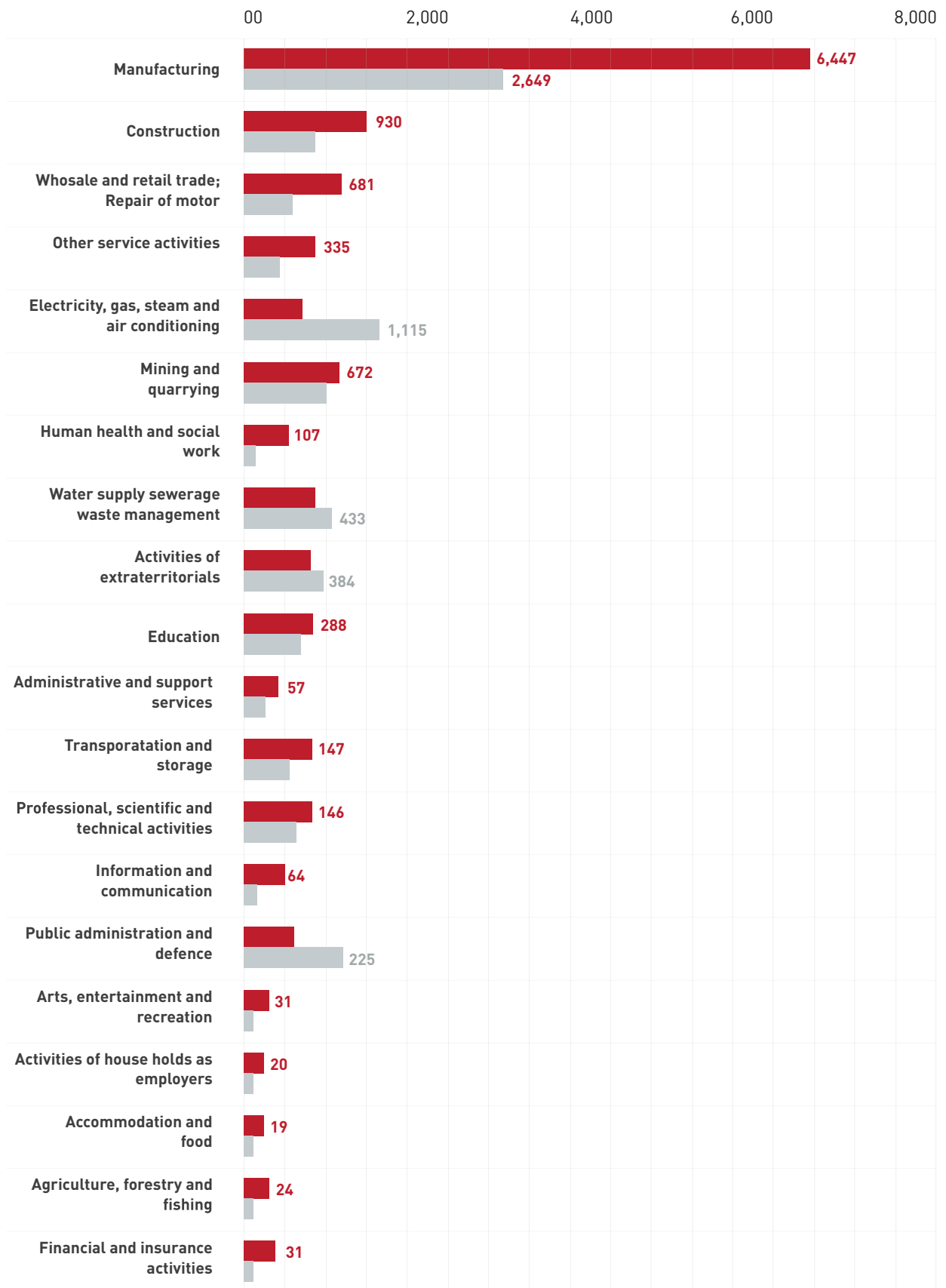
Some economic activities also had negative growth such as Electricity, gas, steam and air conditioning supply, Mining and metal ores, Water collection, treatment and supply, Retail trade, etc.

Based on the intervals of the indicator value for job creation we see that this skill sector has a value greater than 140⁸ so we have a case of VERY STRONG JOB GROWTH.

Job growth was strongest for occupations requiring NQF level qualifications 3,4 while it was lowest for occupations requiring higher education. We have seen the similar conclusion when looking at the scope of the skill sector by NQF requirements indicating that at the moment the demand for higher qualifications may not be high at the moment. However, as we concluded before, strategic documents may show that it is crucial for economic development to have highly educated persons who can introduce new products and services and vitalize the economy with new skills and knowledge.

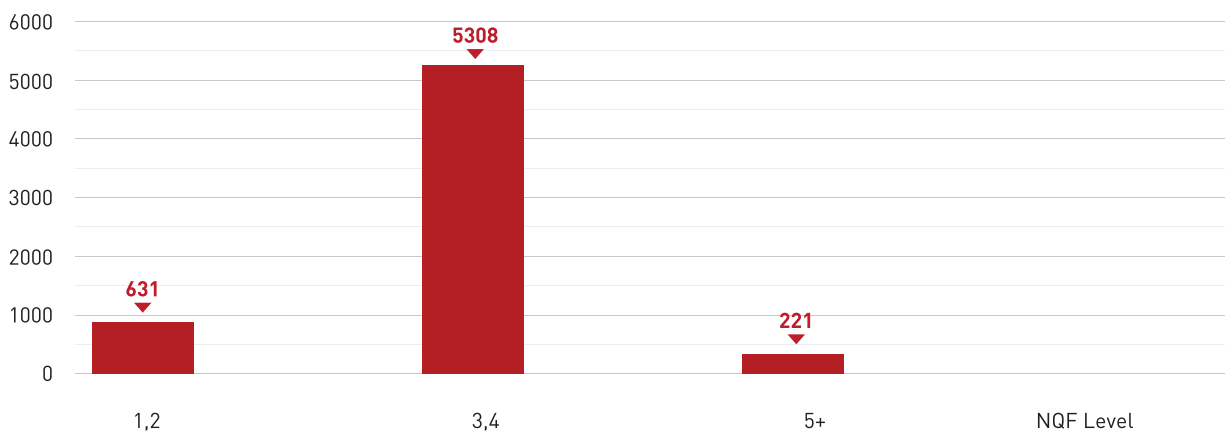
⁸ Indices values: 140+ - STRONG GROWTH; 110-139 - MEDIUM TO FAST GROWTH; 100 - 109 - SLOW GROWTH; Less than 100 - NEGATIVE GROWTH.

Graph 3 - Job growth in the ENG skill sector by economic activities, 2008-2013



Source: LFS(2008, 2013). Calculations made by the author using LFS (2013) share of skill sector occupations in key economic sectors.

Graph 4 - Job growth by NQF level requirement



SUMMARY OF LABOUR DEMAND

What we can say about the ENG skill sector is that the job growth is strong and the dispersion is large and the combination of positive values for these indicators show that demand is going to increase in the future. However the volume of demand is for the time being not great, because we are talking about a relatively small sector with a small SCOPE, i.e. the share of skill sector employment in total employment is 4,6% at this time.

However, when we divide the demand according to type and complexity of occupations we see that the greatest demand is for VET occupations for which NQF levels of qualifications 3 and 4 are required and that demand is less for occupations which require HE qualifications and qualifications at the NQF level 1 and 2.

In summary, clearly the demand for higher education qualifications based on the demand for occupations which require this level of education may need careful planning based on realistic enrolment quotas which take into account both the demand of the labour market but also the drop-out and the final graduation rate.

3

LABOUR SUPPLY AND LABOUR MARKET BALANCE

Labour supply consists of those offering their work related services on the labour market. Typically, they are the unemployed and the newly qualified students (graduates) from the education sector who are looking for work⁹. Below we will look at both sources of labour supply and will intentionally disregard possible immigration from outside of the country.

LABOUR SUPPLY 1: THE UNEMPLOYED

There are 2 sources of unemployment data in Kosovo. The labour force survey publishes unemployment data quarterly and applies international standards in their calculation. The second source is the Public employment service which publishes quarterly and annual data on registered unemployment. Registered unemployment is significantly higher than unemployment measured in the Labour force survey and tends to overstate the actual figure but there is a category of active job seekers among the registered unemployed which is provided by the Ministry of labour and social welfare and which tends to be lower than even the LFS unemployment count and which will be used for our analysis of the skill sector¹⁰.

Table 4 – Registered unemployed by major and minor ISCO codes by various characteristics, 2015

ISCO88 codes Mechanical engineering skill sector ¹¹	Unemployed Total	Unemployed Women	Vacancies	Share of Women in Unemployment, %	Vacancies / Unemployed Index
Total	3,442	240	2,975	7.0	86.4
Managers, professionals, technicians (ISCO1,2,3/NQF 5+)	1,128	120	391	10.6	34.7
Crafts and individual trades (ISCO7/NQF 4)	2,244	116	2,558	5.2	114
Machine operators (ISCO8/NQF 3)	66	4	25	6	37.9
Manufacturing labourers ISCO9/ NQF 1,2	4	0	0	--	100.0

Source: Ministry of labour and social welfare, 2015

⁹ Not all young people want to work after their acquire their first diploma which makes them eligible for the labour market. Many secondary school graduates decide to continue studying, some want to start a family or delay their entry to the labour market. Here we are concerned with those graduates who are looking for work.

¹⁰ Normally, we would use the LFS unemployment data but there are no data on occupations of the unemployed in the LFS so we can not do the analysis. Furthermore, registered unemployment is an expression of national figures of unemployment as defined by national legislation and processes in the Kosovo employment service.

¹¹ The minor ISCO codes used in the table are shown in the Annex with individual occupations which are contained in them. In some minor codes there are individual occupations which do not belong to the ENG skill sector but they are not shown here and do not appear in figures at the minor code level.

Table 4 shows unemployment figures by gender and vacancies by major of occupations and by corresponding NQF levels. There were, on average, 3,442 unemployed with ENG occupations. Among the unemployed are occupations for which higher education qualifications are required (ISCO major group 1,2) like department managers, engineers, teaching professionals, teachers from this skill sector, (5.8% of the unemployed), technicians (ISCO major code 3 with 27.6% of the unemployed), metal workers, machinery mechanics and similar who belong to ISCO major code 7 (65.2% of occupations), machine operators (ISCO major group 8) with only 3.1% of unemployment and manufacturing labourers (ISCO major group 9 with below 1% of unemployment).

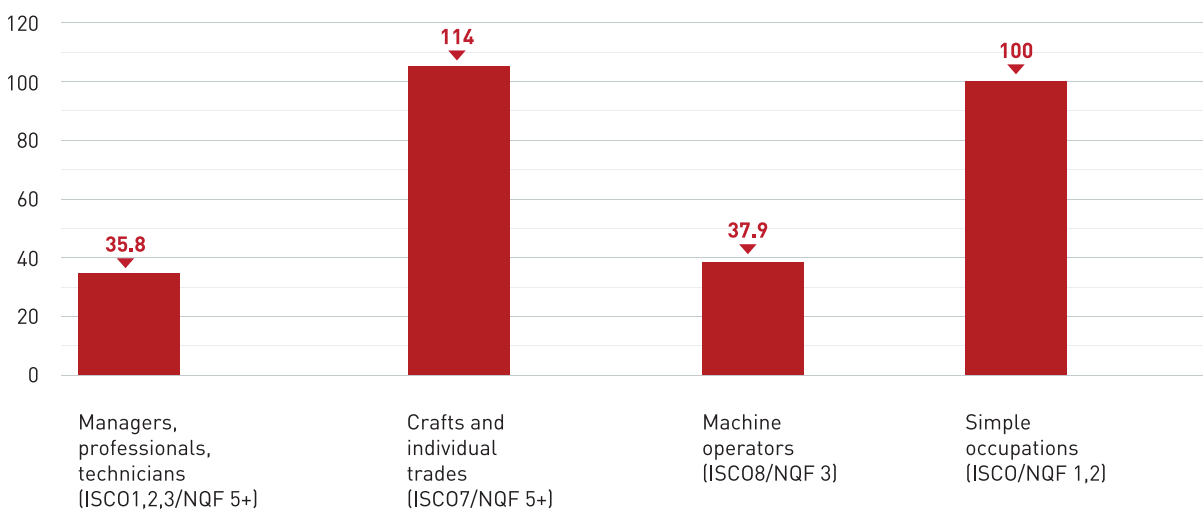
The gender situation in this area shows some features of a typical imbalance between men and women in the ENG occupations. The share of unemployed women in ENG occupations was only 7% and their success rate at finding work is much lower than for men. Out of 337 persons who found employment, only 7 were women, which indicates a much lower employability of women with these occupations on the labour market.

3.1

INDICATOR 4: MEASURING THE EMPLOYMENT POTENTIAL

The vacancy to unemployment ratio is a measure of ease of finding work by groups of occupations or individual occupations. It is measured as the ratio between vacancies and average unemployment in any one year, in this case in 2015. This measure is shown in graph 5. If the value of the index is greater than 100, then we can say that all the job seekers with this group of occupations had available vacancies and had a high probability of finding employment. The lower the values of the indicator ¹², the more difficult it is for unemployed persons with these occupations to find work.

Graph 5 - Vacancy to unemployment ratio by ISCO major group and NQF levels



The overall value of the vacancy to unemployment ratio for the skill sector is 86.4 which falls under the MEDIUM DEMAND. If we measure separately for each of the ISCO/NQF levels we see that occupations requiring HE have low demand, occupations requiring NQF level 4 have high demand; occupations requiring NQF level 3 have low demand and occupations requiring NQF level 1,2 have also high demand although there are few such occupations among the ENG unemployed.

Overall, the most demanded groups of occupations are: Assemblers (260), Metal moulders and welders (255), Building finishers (139), Teachers (133) and Production and operation department managers (100).

The least demanded occupations are: Precision workers in metal and similar materials (22), Metal processing plant operators (27.8), Technical and technology technicians (28), etc.

¹² Vacancy to unemployment ratio value range: High demand - 100 and above; medium demand 50-99; low demand 30-50; below 30 very low demand.

LABOUR SUPPLY 2: GRADUATES FROM VET TRAINING PROGRAMMES

The second source of labour supply are the graduates from VET and higher education programmes. When assessing this source we have to take care of several factors which influence the labour supply. They are:

- How many VET students decide to enter the labour market and how many continue their studies?
- How many graduates at all levels decide to work at all instead of starting families or leaving the country or are limited by illness?

We can approximate the answers to these questions by using the age-related participation rate which shows the share of young people who are active, i.e. they are either working or looking for work.

Labour force and labour force participation rate by educational attainment and age group 2013-2014

	NO SCHOOL		I-IX CLASSES		SECONDARY VOCATIONAL		SECONDARY GYMNASIUM		TERTIARY	
	Labour force (000s)	Share of the labour force (%)	Labour force (000s)	Share of the labour force (%)	Labour force (000s)	Share of the labour force (%)	Labour force (000s)	Share of the labour force (%)	Labour force (000s)	Share of the labour force (%)
2014										
2015	0.3	0.3	18.4	22.3	35.1	42.5	22.3	27.0	6.5	7.9

Source: Kosovo agency of statistics, <https://ask.rks-gov.net/ENG/pop/tables>

The excerpt from the KAS database above shows the participation rates for age group 15-24 which is the age of our VET graduates by educational attainment. We can see that 42.5% of VET graduates are economically active, i.e. work or are looking for work. Others either continue their education or become inactive due to family obligations or illness. Therefore, we have to take this into account when we consider how many graduates from VET schools to expect on the labour market.

In the table below we can see enrolment in VET schools by training programme in the ENG skill sector.

PROGRAMME

Table 5 – Enrolment in VET schools from the Mechanical engineering skill sector, 2015

Programme	FERIZAJ	GJAKOVE	GJILAN	MITROVICA	PEJA	PRISHTINA	PRIZREN	KOSOVO	SHARES IN TOTAL ENROLMENT
ENERGETICS	--	45	69	16	93	402	--	625	11.7
OFFICE EQUIPMENT REPAIR	--	--	--	--	--	61	--	61	1.2
CAR MECHATRONICS	--	--	--	--	20	58	--	78	1.5
INDUSTRIAL CLERK	--	--	--	--	--	--	48	48	0.9
OPTICS	72	--	--	--	--	--	--	72	1.4
PLUMBING AND SEWERAGE	48	80	34	18	107	25	139	451	8.5
METAL WORKING	--	--	--	21	--	--	--	21	0.4
CAR MECHANIC2	135	85	146	166	256	336	231	1355	25.5
METALWORKER	26	--	--	--	60	27	28	141	2.7
METAL TECHNICIAN	--	--	--	133	--	44	--	177	3.3
METAL PROCESSING	24	--	--	--	--	--	--	24	0.5
CAR MECHANIC	25	73	--	--	7	70	24	199	3.7
HEATING AND COOLING	166	18	160	100	121	256	265	1086	20.4
PRODUCTION OPERATOR	152	45	111	301	248	110	18	985	18.5
TOTAL	684	346	520	755	912	1389	753	5323	100
ENG graduates	92	49	74	107	129	197	107	754	14.2
Industrial training graduates	29	6	16	65	44	26	13	198	3.7

* Graduates are calculated by dividing the enrolment by 3 to get the students in the final year. Then we multiply this number by the participation rate of children who are in the age group 15-24 to get the economically active individuals who enter the labour market.

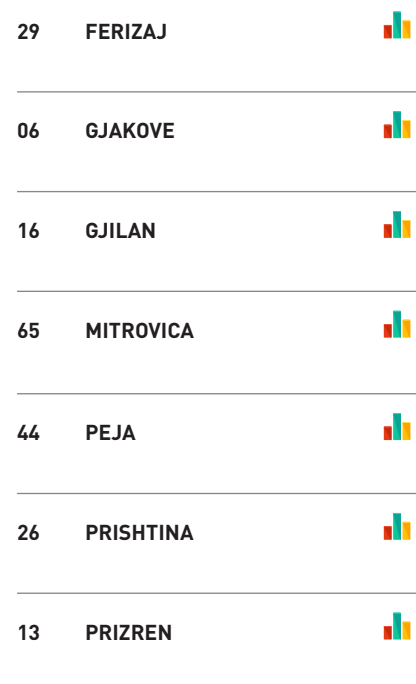
Source: Ministry of science and education, Kosovo.

There are 31 schools across Kosovo which provide training programmes in Mechanical engineering. All the Kosovo regions have at least one such school and many also have 2 or more. 30.7% of total enrolment are programmes for Car repair and maintenance followed by the Heating and cooling installation with 20.4%, Production operator with 18.5% enrolment, Energetics with 11.7%, Plumbing with 8.5% and Metal processing related programmes with 6,8%.

Other programmes are all below 2% of total enrolment and they include Repair of office equipment, Industrial clerk and Optics. Overall, the programmes designed to support industrial development, particularly in the metal industry and manufacturing as a whole are much less prominent than programmes oriented towards personal services such as cooling and heating systems, plumbing and car mechanics. Even though we saw that the training coverage was good for the skill sector as a whole, now that we see which programmes are available, it is clear that coverage of industrial occupations in the ENG skill sector is not adequate.

The most important information from this analysis are the numbers of graduates who come to the labour market from the Mechanical engineering skill sector annually. In the last row we can see the numbers of graduates by region and in the final column we see that there are approximately 754 graduates from the skill sector every year. However, since we are focusing on industrial occupations we should only take into account graduates from programmes Production operator, the Metal processing training programmes, and perhaps Industrial clerk. When we add up all the graduates from these programmes we have about 1,548 enrolled students in total and 1/3 of those gives an approximation of the number of enrolled in the final school year. Furthermore, only about 42.5% of those graduates will remain on the labour market while others either go on to higher education or remain inactive. This number is about 219 students in all the regions annually.

The regional distribution of graduates is very different. If we look at only industrial oriented programmes we have the following situation:



If all the assumptions we have made about the graduates who remain on the labour market is robust, then we have rather large numbers of graduates only in Mitrovica, Ferizaj and Prishtina, while Gjilan and Prizren have around 15 while Gjakove has less than 10 graduates per year.

LABOUR SUPPLY 3: GRADUATES FROM HIGHER EDUCATION INSTITUTIONS

Supply of skills for jobs which require higher education qualifications (5+) comes from the unemployed with the skill sector qualifications and from graduates who finish relevant HE qualifications.

Table 6 shows all the HE education programmes from the skill sector Mechanical engineering by type of study and enrolment over years by gender. We can see that the total number of enrolled students varied from 521 in the academic year 2010/11 to 937 in the academic year 2014/15. This large increase is atypical since the total number varied little from 445 to 521 in the previous years. The biggest number of students was in BA programmes Industrial machinery and Production and automation, however the first programme ended or some other change occurred in the academic year 2012/2013.

The overall numbers of graduates varied significantly over the years, being only 35 in the academic year 2013/2014 to 79 in the previous year. On average about 51 students graduate annually out of that about 10 were female graduates. This programme is clearly preferred by young men than women but there may be barriers to mobility into the study based on gender.

When we work out the graduation rate from these figures we can see the average for the period was 9.5% overall and 15% for women. This indicates that women were overall more successful at graduating than men although there are far fewer of them enrolled in the programmes as can be seen in the last column which shows the share of women in total enrolment over the whole period.

Table 6 – Enrolment in university level training programmes in the Mechanical engineering skill sector, various years by gender

Programme Name	Study type	2010/11		2011/12		2012/13		2013/14		2014/15		2010-15
		Total	Women	Total	Women	Total	Women	Total	Women	Total	Women	% of women
Cutting Profile	MA	--	--	--	--	--	--	11	2	24	6	22.9
Deformation profile	MA	--	--	--	--	--	--	10	0	9	0	0
Energetics engineering	BA	0	0	0	0	0	0	0	0	15	4	26.7
Energetics systems	BA	--	--	--	--	--	--	15	3	98	26	25.7
Heating and energetics technology	DOC	--	--	3	1	--	--	--	--	--	--	33.3
Industrial engineering and management	BA	--	--	--	--	--	--	19	4	97	37	35.3
Industrial machinery	BA	190	35	183	32	181	24	--	--	--	--	16.4
Industrial machinery	MA	31	4	--	--	--	--	--	--	--	--	12.9
Materials	MA	--	--	--	--	--	--	4	1	3	1	28.6
Materials and metalurgy	BA	--	--	--	--	--	--	16	2	84	14	16
Mechatronics	BA	--	--	--	--	--	--	55	1	124	6	3.9
Mechatronics management	BA	44	0	69	2	74	5	91	6	130	8	5.1
Mechatronics management	MA	9	0	15	1	32	3	34	3	26	3	8.6
Metal materials and metalurgy	MA	--	--	--	--	7	1	--	--	--	--	14.2
Metalurgy	BA	60	13	48	10	48	10	--	--	--	--	21.2
Metalurgy	MA	--	--	--	--	--	--	5	0	8	1	7.7
Processing technology by cutting	MA	31	4	44	5	--	--	--	--	--	--	12
Production and automation	BA	132	24	116	11	132	17	109	7	162	27	13.2
Production and automation	MA	24	2	23	4	27	3	29	4	32	9	16.3
Production machinery	BA	--	--	--	--	--	--	47	7	125	23	17.4
Production technology	DOC	--	--	3	0	--	--	--	--	--	--	0
Total students	--	521	82	504	66	501	63	445	40	937	165	14.3
Graduates	--	54	9	44	6	79	20	35	7	45	10	20.2
Graduation rate	--	10.4	11.0	8.7	--	--	15.8	31.7	17.5	4.8	6.1	--

Source: KAA.

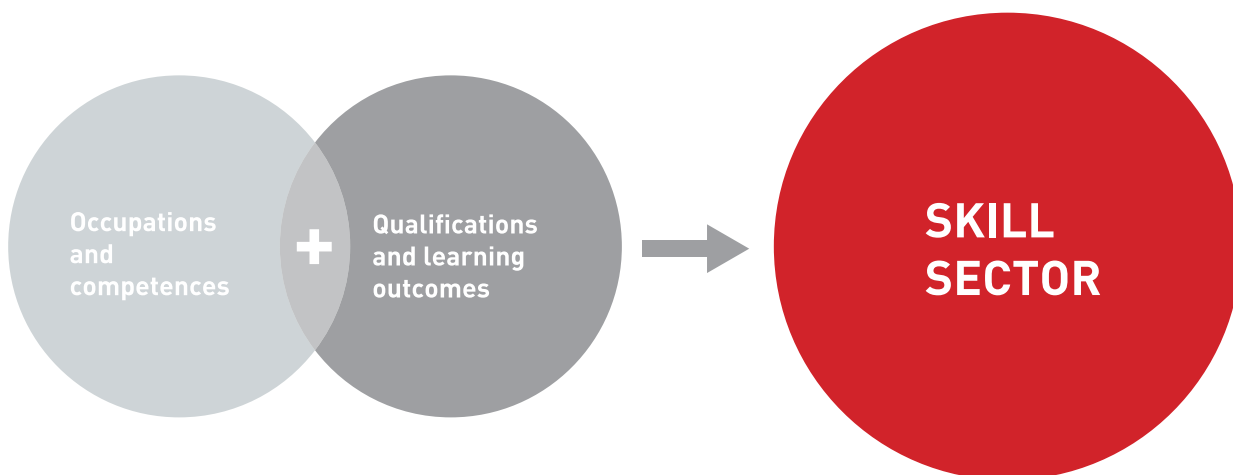
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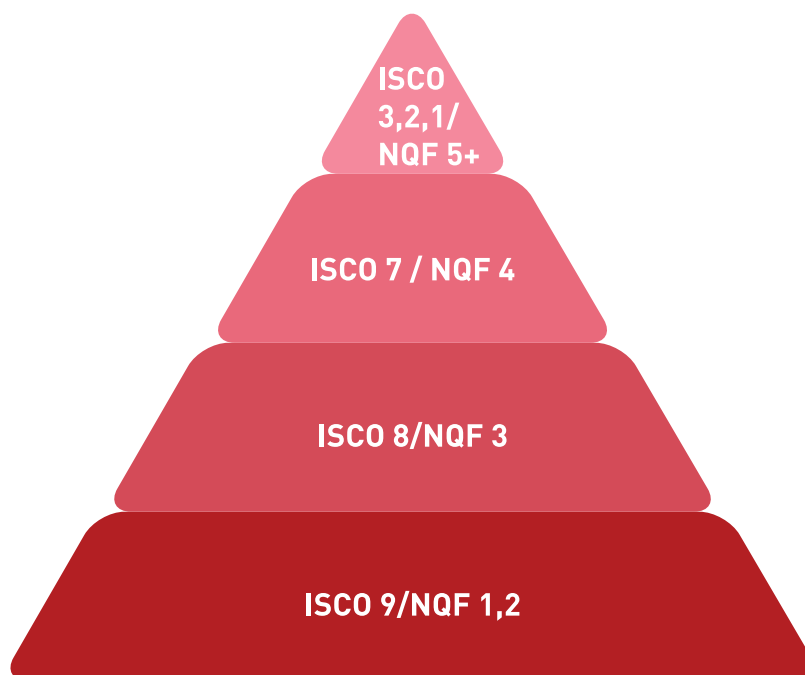
INDICATOR 5: TRAINING COVERAGE OF SKILL SECTOR

The coverage of a skill sector refers to the availability of education for groups of occupations at different levels of complexity and type as indicated by major ISCO groups. There are two main reasons why training coverage is important. Firstly, the need to facilitate labour market mobility from occupation to occupation and secondly, to identify gaps in training provision.

In an ideal case each group of occupations in an economy should have adequate training coverage so that initial training for these occupations as well as upgrading of skills in existing jobs has support in the education system. Within the National qualification frameworks, progression paths are very important particularly for a life-long learning setting. This means that individuals with skills which do not only come from qualifications but also from work experience should have training availability which will facilitate a move from one job to another, particularly in the same skill sector. For example, if a person is a tool maker by trade in the Mechanical engineering skill sector for which NQF level 4 training is required, but would like to become a welder he/she should have training which will provide the additional skill needed for this career move. This is an example of lateral/horizontal mobility in the same skill sector and at the same level. However, training should also support vertical moves as well as cross skill sector mobility where there is some overlap in skills. An example of this is when a tool maker would like to become a machine operator in the food industry which is in the Food-processing skill sector at the same level. If both these occupation groups are covered by the right kind of training, these moves within and between sectors will be possible with some additional training.

In the chart below we show how occupations and qualifications comprise a skill sector. Each occupation has competences which are required for adequate on-the-job performance. On the other hand, each qualification has learning outcomes at certain levels which comprise the qualification. Both the occupations with their competences and qualifications with their learning outcomes are parts of a common skill sector. Each occupation group and its corresponding qualification group relate to one or more NQF levels. Based on this correspondence we can work out whether training coverage is adequate or if we have training provision gaps in the system.





Charts 1 and 2 show how occupations and their competences and qualifications and their learning outcomes come together in a skill sector. The pyramid shows the different levels of complexity in a skill sector each of which is a combination of occupations and qualifications which correspond to one another as expressed by ISCO major groups and levels of NQF.

The coverage of a skill sector shows how well balanced the occupations are with qualifications, i.e. whether each major occupation group has adequate response from the education sector.

Gaps which appear here, when some occupation groups have no response from education or when some occupation groups have many possible training inputs, lead us to the conclusion that some qualifications need to be introduced or reduced in number for the actual demand for skills. If there are no qualifications which “feed” the relevant occupations, there will be no replacement of the employed in these jobs with younger generations and the existing workers will have no training available to refresh or upgrade their skills.

In table 7 we can see the balance between major groups of occupations and the training programmes at the same level of complexity.

Table 7 – Occupations and qualifications in the skill sector Mechanical engineering¹³

Level NQF/Major ISCO group	Number and type of occupations in the ENG skill sector taken from ISCO88/08 ¹⁴	Number of qualifications
NQF 1-2 / Major group 9	3 occupations (type: Elementary occupations)	No qualifications
NQF 3 / Major group 8	43 occupations (type: Machine operators)	17 VET TRAINING PROGRAMMES (each programme has an NQF level 3 after 2 yrs and 4 after 3 yrs)
NQF 4 / Major group 7	74 occupations (type: Crafts and individual trades)	----
NQF 5 / Major group 3	18 occupations (type: Technicians)	No qualifications
NQF 6+ / Major group 2	24 occupations (type: Professionals and managers)	32 HE programmes (17BA,14MA,1DOC)
TOTAL	162 OCCUPATIONS	

Source: Labour force survey, 2013, MEST and KAA – data on training programmes in HE and VET 2013

We can see that most of the occupations in this skill sector are Crafts and individual trades by type and complexity or ISCO major group 7. Usually this type of occupation requires at least 3 years of secondary level education at the NQF level 4, but can also be trained through adult training. Since NQF level 4 qualifications are available after 3 years of VET secondary education we can see that we have 14 VET programmes at this NQF level to cover 74 occupations in major group 7.

The second group of most numerous occupations are the machine operators by type or ISCO major group 8 and they generally require secondary VET education at the level 3 of NQF or adult education at the same level. There are up to 43 such occupations and they are covered also by 17 VET programmes if we take into account the graduates after 2 years of VET training or adult education for which we do not have data.

For NQF level 5 qualifications which lead to occupations of the type technician, there are 18 occupations but no qualifications and this could be a problem in the future since technicians are key occupations in industry and act as support workers for professionals and researchers. We can see that technicians exist in the Kosovo labour market (they appear both in the LFS and the unemployment database of the MLSW), but if no level 5 programmes are introduced it will be difficult to replace them and to support industrial development with the required human resources.

Jobs requiring higher education qualifications of NQF level 6 and above (it is impossible to discern demand only for master graduates and impossible for doctors) have training coverage by 35 different programmes but there are only 24 such occupations. 17 of them are at the bachelor level, 15 at the master level and 2 programmes end with a PhD. This seems to be a rather large number of ENG qualifications for only 24 occupations so any new standard which would result in a new training programme would have to be considered with some reserve.

¹³ See all detailed occupations and qualifications from the skill sector in Annex 1.

¹⁴ Some of these occupations may not be present in the Kosovo labour market at this time but we have difficulty in assessing their presence at the level of individual occupations since the LFS collects data only at the aggregated level of minor group.

MEASURING THE TRAINING COVERAGE INDICATOR

The training coverage is calculated as the number of training programmes in relation to the number of occupations for each NQF level /ISCO occupational group. Since 3 out of 5 major group occupations are covered by training programmes at the adequate NQA level this indicates GOOD¹⁵ coverage but it is important to remember that **there are no qualifications for the level of technicians** which could seriously affect the supply of skills at this level for the manufacturing industry in the future.

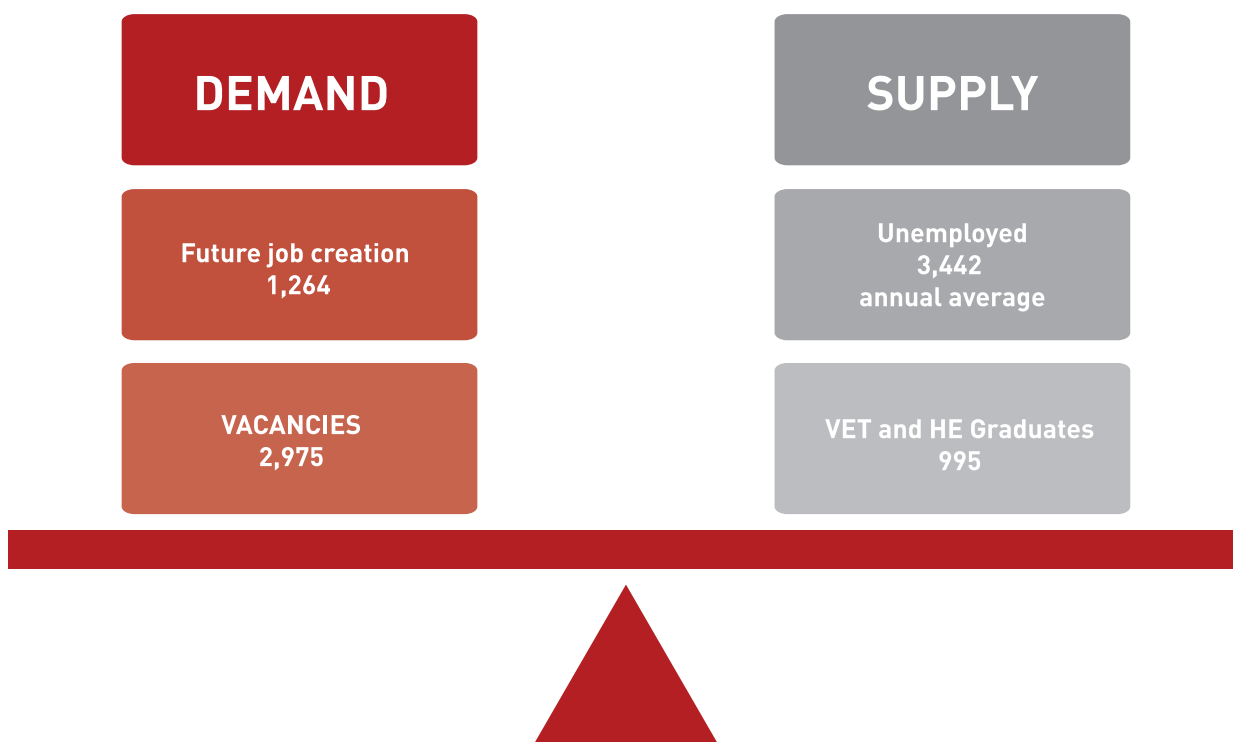
In summary, the training coverage of the skill sector is good but there are skill gaps without training provision at the level of technician and for simple occupations. The HE training programmes may be overrepresented given the relatively small scope of the ENG sector and the relatively small number of occupations. In this case all applications for standards would be very welcome for level of technician and should be initiated by the MEST in cooperation with industry. New standards for HE programmes would need good argumentation for their relevance given that there is a large number of similar programmes already available given the relatively small scope of ENG skill sector.

¹⁵ Values of indicator for coverage: 5/5 = Excellent coverage; 4/5 = Very good coverage; 3/5 = Good coverage; 2/5 Limited coverage; 1/5 Very limited coverage.

3.3

INDICATOR 6: THE BALANCE OF SUPPLY AND DEMAND

A very rough calculation based on all the above evidence is shown in the chart below. If we take the past demand for mechanical engineering occupations which we calculated to be 6,318 and assume that it will remain similar over the next 5 year period we will have about 1,264 jobs annually. Based on the Employment service register there were annually about 2,975 vacancies which makes up an annual demand total of 4,239 potential jobs. On the supply side we have 3,442 unemployed which is the annual average and 995 graduates which indicates that there will be a very slight surplus of 208 job seekers or practically a well-balanced supply and demand given the current data available and given the hypothesis which we have had to apply.



However, this is a very rough estimate and based on elements which may change in a different way from the expected. Also the graduates from VET schools and particularly from universities are relatively few due to high percentages of VET graduates who go to higher education and low graduation rates of HE students due to a large drop-out. If this changes and the success rate of finalizing studies improves, so will the supply of labour to the labour market. On the other hand, the estimate of demand may be on the high side since it is difficult to imagine that demand will grow as fast as it did in the past so this estimate is possibly too high. Nevertheless, we have to be aware that in this sector demand and supply seem to be evenly matched even though there are many unemployed and many enrolled students.

In summary, the potentially high supply of labour which is being generated through the unemployed and the graduates is greatly reduced by two factors: the long term unemployment of the registered unemployed which may result in low ability to perform in the labour market due to lack of right skills or preparedness for work and the high loss of labour supply from VET schools due to the high interest in getting HE qualifications.

This results in a paradox that a demographically young country such as Kosovo with many unemployed, inactive and student populations, does not have more labour supply than has been shown here. We can see that for some occupations we have high numbers of vacancies and large numbers of unemployed. This has to be analysed in order to ascertain why the unemployed are not finding work although there are vacancies in the economy.

Secondly, the VET schools which do not usually have a large drop out, tend to have considerable enrolment in higher education which means that they are lost for the labour market. However, even though these graduates manage to enrol in HE, many of them drop out before getting their qualification. It is not clear what happens to drop-outs from HE and this type of analysis is beyond the scope of this project. They may enter the labour market with their secondary school qualifications or may become inactive if there are not jobs to be had.

4.

SUMMARY OF INDICATORS

Even though the SCOPE for the ENG sector is small, JOB GROWTH as well as DISPERSION IS HIGH particularly for VET occupational segment. Due to these indicators the scope can be expected to increase due to high job growth and the effects will be felt in many economic activities. Employability is medium for VET but relatively low for occupations requiring higher education qualifications. This will change as the economy becomes more competitive and requires higher educated employees to face international competition.

TABLE 8 – INDICATORS OF DEMAND AND SUPPLY OF LABOUR WITH RANGE VALUES and results for the ENG sector

INDICATORS	VALUES OF INDICATORS	DESCRIPTION OF INDICATOR	INDICATORS FOR ENG SECTOR
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INDICATORS OF LABOUR MARKET DEMAND

Indicator 1 SCOPE	<ol style="list-style-type: none"> LARGE SCOPE: more than 20% MEDIUM SCOPE: from 8–20% SMALL SCOPE: 3–8% VERA SMALL SCOPE: Below 3% 	The share of employed with skill sector occupations in total employment	4.5% -SMALL SCOPE
Indicator 2 DISPERSION	<ol style="list-style-type: none"> HIGH DISPERSION: above 60% MEDIUM DISPERSION: from 31 – 60% LOW DISPERSION: up to 30% 	The number of economic sectors which employ skill sector occupations in relation to all sectors	57/86 or 66% HIGH DISPERSION
Indicator 3 JOB GROWTH	Indices values: STRONG GROWTH 140+ - MEDIUM TO FAST GROWTH 110-139 - SLOW GROWTH 100 - 109 - NEGATIVE GROWTH Less than 100 -	Index of employment growth over the last 5 years for economic sectors which employ agricultural occupations	Index 2011-2014 = 147 MEDIUM TO FAST GROWTH
Indicator 4 EMPLOYMENT POTENTIAL	<ol style="list-style-type: none"> HIGH DEMAND: 100 and above; medium demand 50-99; low demand 30-50; below 30 very low demand 	Vacancy to unemployment ratio VET = 64.5 HE = 36.7	VET medium demand; HE low demand

INDICATOR OF TRAINING SUPPLY ADEQUACY

Indicator 5 COVERAGE	<ol style="list-style-type: none"> ISCO 1,2,3 COVERED BY NQF 5+ ISCO 4,5,6,7 COVERED BY NQF 4 ISCO 8 COVERED BY NQF 3 ISCO 9 COVERED BY NQF 1,2 	If all 4 groups of ISCO are covered we have full coverage. If not, we have a training provision gap	3 out of 4 ISCO groups have coverage
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INDICATOR OR DEMAND AND SUPPLY BALANCE

Indicator 6 BALANCE	<ol style="list-style-type: none"> Balance can be positive or negative 	The gap between demand and supply should be as small as possible	There is a very small excel supply for demand for ENG skills indicating a relatively well balanced D/S situation
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Source: Labour force survey, 2013, MEST and KAA – data on training programmes in HE and VET 2013

Job growth will create most demand for occupations in manufacturing and this means that the gap in the training coverage at NQF level 5, i.e. technicians will start being felt and this will create more demand than there is currently supply.

Implications for the education sector are the following:

1. Development of standards in the Mechanical engineering skill sector is very much needed particularly in the area of VET since both the scope and the job growth are highest in this sector
2. Wide dispersion of occupations in the economy requires that the regular training programmes be more flexible since mechanical engineering occupations are needed in many different economic activities. To facilitate movement from one occupation to another, life-long learning opportunities should be available to facilitate movement between jobs within the skill sector.
3. New level 5 standards should be initiated to fill the gap in the coverage of groups of occupations by relevant training programmes
4. More active cooperation with the employers will give clearer development direction in terms of competences in the workplace which should be done via the Employers' survey.

The values of indicators are only an indication of the relevance of the occupations for which standards are being developed. They are to be used by the verifiers more as a help in the assessment process rather than as a rigid check list which disqualifies the applicant. If more than half of the indicators are in the large to medium range, the relevance is high. If some of the indicators have low values, the applicants should be asked for further clarification why the standard could nevertheless be important. For example, the sectors of natural sciences are of very small scope, dispersion and even growth, but these occupations are necessary in smaller numbers in the economy for important jobs.

The applicant must provide such explanations which can be considered to be qualitative indicators, if the quantitative indicators are not adequate.

Assessment of labour market relevance should use values of all indicators shown above as well as expert knowledge of the labour market as well as looking at strategic documents which define objectives for the development of agriculture on Kosovo.

5.

SOME FACTS ABOUT MECHANICAL ENGINEERING

Mechanical engineering is one of the largest, broadest, and oldest engineering disciplines. Mechanical engineers use the principles of energy, materials, and mechanics to design and manufacture machines and devices of all types. They create the processes and systems that drive technology and industry. The key characteristics of the profession are its breadth, flexibility, and individuality.

Mechanical engineers research, design, develop, manufacture, and test tools, engines, machines, and other mechanical devices. The field is notable for emphasizing versatility. A mechanical engineering education is an excellent foundation for work in other fields. Some mechanical engineers work on medical problems, such as the mechanics of bones and joints, or the fluid dynamics of the circulatory system.

Mechanical engineers deal with economic issues, from the cost of a single component, to the economic impact of a manufacturing plant. M.E.'s can be found in sales, engineering management, and corporate management. Versatility is a decided asset in a world that is undergoing constant economic, political, industrial, and social change. Mechanical engineers are educated and positioned, not only to adapt, but to define and direct change. Traditionally, diversity of the field of mechanical engineering is represented in the following areas of involvement.

Basic Engineering: Fundamentally, mechanical engineers are involved with the mechanics of motion and the transfer of energy from one form to another or one place to another. MEs design and build machines for industrial and consumer use - virtually any machine you find, had a mechanical engineer involved with its development and production. They design heating, ventilation, and air conditioning systems to control the climate in homes, offices, and industrial plants, and develop refrigeration systems for the food industry. MEs also design heat exchangers, key components in high-tech mechanical and electronic computer equipment. Basic Engineering includes several very important components which can be found in practically all levels of mechanical engineer education. The most important is Applied Mechanics which can be applied to almost anything - metal bars, rocks, water, the human skeleton, or complex systems such as buildings, automobiles, and machines.

The basic question is how things work and whether they work well. To find the answers, a mechanical engineer uses a knowledge of shock and vibration, dynamics and motion, fracture and failure in components, and the behaviour of high-tech materials. Fluids engineering is involved in anything that flows - air, water, heat and cold, even the sand along our shores. Mechanical Engineer design fluid machines and systems -- pumps, turbines, compressors, valves, pipelines, biological devices, hydraulic systems, and the fluid systems in car engines. The fluids engineer can be found in industries ranging from aerospace to food, manufacturing, medicine, power, and transportation. Heat Transfer is an issue in all modern technology, given today's emphasis on conservation and wise use of resources. This field touches on combustion, power generation and transmission systems, process equipment, electronic devices, thermal controls in manufacturing, environmental controls, biotechnology, aerospace applications, transportation equipment, and even cryogenics.

Energy Resources and Conversion: Mechanical engineers are involved in all aspects of the production and conversion of energy from one form to another. They design and operate fossil fuel, hydroelectric, conventional, nuclear and cogeneration power plants. Engineers design and develop internal combustion engines for mobile, marine, rail, and stationary applications. Important activity of Mechanical Engineers is conversion and use of existing energy sources but also in finding and developing new forms of energy such as fuel cells, wind, solar and geothermal energy etc.

Transportation: Transportation is a large and growing field for mechanical engineers. Existing modes of air and surface transport require continuous improvement or replacement and Mechanical Engineers work at the cutting edge of these efforts. So they work in the design, development and manufacture of things that move on land, sea, air and in space. Mechanical Engineers design propulsion engines and structural component systems, crew and passenger accommodations and life support systems. All aspects of mechanical engineering can be applied to the design, construction, operation, and maintenance of rail and mass-transit systems. Technologies developed in aerospace and energy conversion are being applied to a new generation of locomotives and cars for freight, passenger, and transit services.

Manufacturing: In contemporary manufacturing companies, mechanical engineers play a key role in the "realization" of products, working closely with other engineers and specialists in corporate management, finance, marketing, and packaging. ME's design products, select materials and processes, and convert them to finished products. They design and manufacture machine tools and entire manufacturing processes, aided by the latest technologies in automation and robotics. Finally, the finished products are transported in equipment designed by mechanical engineers.

This is the largest area of employment for mechanical engineers, especially when the process and textile industries are included. A finished product requires the right materials, a viable plant and equipment, and a manufacturing system. This all comes within the purview of mechanical, manufacturing and industrial engineers. About half of all M.E.'s work in companies that manufacture "something," such as consumer goods, transportation, or industrial equipment. Another 16% work in the process industries, like petrochemical or pharmaceutical.

The challenges are as diverse as the products -- from miniature devices used by surgeons, to disk drives, or massive pieces of industrial equipment. This work calls for a knowledge of materials, manufacturing processes, thermal processes, controls, electronics, and, the most important teamwork skills.

[1] "Mechanical Engineering Overview" Prepared as part of the Sloan Career Cornerstone Centre.

Although mechanical engineering is one of the oldest engineering fields, in the past 20 years has undergone a remarkable transformation as a result of a number of new technological developments. The most important technological changes that influenced in what mechanical engineers do definitely are computers. About 30 years ago mechanical engineers were sitting in front of a drafting table drawing blueprints for devices but today the drafting board has been replaced by CAD software, which enables a part to be constructed and tested virtually before any physical object is manufactured. CAD allows not only sizing and checking for fit and interferences, but the resulting virtual parts are tested structurally, thermally, electrically, aerodynamically, etc. and modified as necessary before committing to manufacturing.

Therefore CAD and simulation software highly improve productivity of companies by reducing the product development time, prototyping costs, switch to alternate or cheaper material, improve product quality and performance, enhance reliability and also significantly reduce the waste. Introduction of computers into manufacturing also enable a development of other technologies and processes that change the frame of ME's activities. Good example is additive manufacturing better known as 3D printing, new way of creating prototypes and in limited cases, full-scale production. Thanks to computers a broad range of foundational tools and techniques for ME's work such as robotics, sensors and actuators, computational fluid dynamics, finite element analysis, lifecycle analysis and project management, were all identified as growth areas.

Technological development, beside the professional skills of ME's, directly influences on their collaboration with other fields. Historically, a complex devices such as an automobile was designed almost exclusively by mechanical engineers. Modern vehicles have vast electrical and electronic systems, safety systems, specialized batteries, etc., which require design contributions from electrical, biomechanical and chemical engineers, respectively. It is essential that a modern mechanical engineer be able to understand and accommodate the requirements imposed on the system by non-mechanical considerations, but at the same time has a social skills that helps him to work in such interdisciplinary surroundings.

Such a set of skills makes a Mechanical Engineer desirable contributor in a variety of industries such as automotive, aerospace, biomedical, computers, construction, electrical power generation, petrochemicals, robotics, food and processing, etc.

Mechatronics as a Segment of Mechanical Engineering - What Is its Role In Modern Manufacturing?

Mechatronics integrates the principles of mechanical, computer, electrical, and controls engineering into a unified discipline while keeping the core mechanical engineering education. Present mechanical systems are either controlled by the computers, or their intelligence is enhanced by the embedded sensors and electronic circuits. Examples of mechatronic systems range from simple household devices such as microwaves to industrial CNC Machines, robots, Medical Resonance Image (MRI) and X-Ray machines, aircraft and ship steering controllers, automobile power steering and engine controllers, telescopes and all the way to the International Space Station. Mechatronics engineers are uniquely equipped to work as mechanical engineers with rich electronics, instrumentation and real time software engineering skills which are in high demand in industry. With the growing capabilities of electronics, modern mechanical systems are embedded with electronics and controls.

Mechatronic engineering is concerned with the design of automated machines. It is strongly based on a combination of mechanical, electronics and software engineering, but is a distinctly different discipline to all three.

Mechatronics engineering differs from automation engineering in that its practitioners have a deep understanding of the performance analysis and design of complex machines. It differs from mechanical engineering in that its practitioners understand how automations can be designed and integrated into a machine very effectively to achieve an outcome. A mechatronics engineer is capable of thinking holistically about a mechatronic system, rather than focussing on certain domain specific elements such as the mechanical system or the software. An understanding of how to model a system from a power perspective (rather than thinking in terms of voltages or forces) is fundamental to this.

Many mechatronic engineers work with the electronic instrumentation and computer control systems which nearly all machinery relies on for efficient and reliable operation. Usually it is taken for granted that automatic systems monitor process plants for leaks and faults, and keep the plant operating all the year round. Mechatronic engineers build and design these systems and need expertise in computing and electronics, core mechanical engineering knowledge, and the ability to bring these together to make working systems which meet the safety and reliability levels we take for granted.

Mechatronic engineers also have roles in project engineering, reliability engineering and power engineering where their cross-disciplinary knowledge gives them an edge on mechanical or electrical engineers. Mechatronic engineers can work with electrical and mechanical systems together and solve problems that cross discipline boundaries. Their strength in IT, computer hardware and networking as well as software also helps them to be very versatile problem solvers. Writing and testing software for specialised computer systems and micro-controllers forms a major part of the work of many mechatronic engineers.

Like all engineers, technical collaboration takes most of a mechatronic engineer's working time. Mechatronic engineering, by its nature, involves extensive collaboration with people working in more traditional engineering disciplines. Skills such as teaching, persuasion and negotiation in a technical context are valuable for mechatronic engineers. Technical coordination, gaining the willing and conscientious collaboration of other people without organisational authority is especially valuable.

Specific expertise areas of mechatronic engineers include Artificial Intelligence Techniques, Avionics, Computer Hardware and Systems, Control Systems, Data Communications and Networks, Dynamics of Machines and Mechanisms, Electromagnetic Energy Conversion, Electronics, Embedded & Real-time Systems, Fluid Power and other Actuation Devices. Human-Machine Interface Engineering and Ergonomics, Industrial Automation, Measurement, Instrumentation and Sensors, Mechanical Design and Material Selection. Mechatronic Design and System Integration, Modelling and Simulation, Motion Control, Power Electronics, Process Management, Scheduling, Optimization, and Control, Process Plant and Manufacturing Systems, Robotics, Signal Processing, Smart Infrastructure, Software Engineering, Systems Engineering, Thermofluids, etc. [6].

[6] What is Mechatronics, University of Melbourne brochure, The University of Western Australia.

Annex 1

LIST OF OCCUPATIONS IN THE MECHANICAL ENGINEERING SECTOR WITH ESTIMATES OF NQF LEVEL REQUIREMENTS

OCCUPATIONS IN THE MECHANICAL ENGINEERING SECTOR (163)

NQF LEVEL 6+	24 OCCUPATIONS
2145.02	Engineer, mechanical/processing technique
2145.03	Engineer, mechanical/automation
2145.04	Engineer, mechanical/energies
2145.05	Engineer, mechanical/hydraulics and pneumatics
2145.06	Engineer, construction machinery
2145.08	Inspector, steam engine
2145.09	Engineer, mechanical
2145.10	Technologist, engineering/mechanical
2145.11	Engineer, mechanical, planner
2145.12	Engineer, mechanical/adviser
2145.13	Engineer, mechanical/supervisor
2147.05	Metallurgist, production
2147.07	Metallurgist
2147.09	Technologist, metallurgy
2147.16	Engineer, metallurgy/moulding
2147.17	Engineer, metallurgist, melting technologist
2147.18	Engineer, metallurgist, melting technologist
2147.19	Engineer, black metallurgy
2147.20	Engineer, metallurgist/ metal processing
2147.21	Engineer, metallurgist/ metal production and processing
2147.22	Other metallurgist engineer
2325.03	Teacher, metallurgy
2325.04	Teacher, energetics machinery
2325.05	Teacher, mechanics

NQF LEVEL 5	18 OCCUPATIONS
3115.01	Fireman, engineering/mechanical
3115.02	Technician, engineering/aeronautics
3115.03	Technician, engineering/processing machinery
3115.04	Technician, engineering/automation machinery
3115.05	Technician, engineering/energetics machinery
3115.06	Technician, engineering/construction machinery
3115.07	Technician, engineering/technological machinery
3115.09	Technician, engineering/mechanical
3115.10	Forman, engineering/machinery
3116.02	Supervisor, pneumatics
3117.01	Supervisor, metallurgy/production line
3117.03	Technician, roentgen rays/metallurgy
3117.06	Technician, metallurgy technology
3117.07	Technician, non-ferrous metallurgy
3117.08	Technician, ferrous metallurgy
3118.09	Draughtsperson, mechanical
3123.01	Controller, robot
3123.02	Technician, robotics

NGF LEVEL 4	74 OCCUPATIONS
7136.03	Fitter, cooling equipment
7136.04	Installer, air conditioner equipment
7136.05	Fitter, heating equipment
7136.06	Fitter, gas equipment
7136.07	Plumber
7136.08	Maintenance worker
7211.01	Coremaker, metal
7211.02	Moulder, metal castings
7211.03	Machine operator, coremaking/metal
7211.04	Moulder, metal
7211.05	Master, metal moulding
7212.01	Welder, gas
7212.02	Electrowelder
7212.03	Welder
7212.04	Welder, specialised
7212.05	Cutter, gas
7212.06	Brazier
7213.01	Car-body repair
7213.02	Boilersmith
7213.03	Sheet-metal worker
7213.04	Worker, sheet
7213.05	Tins smith
7214.01	Erector, structural metal
7214.02	Riveter
7215.01	Rigger
7215.02	Splicer, cable and rope
7216.01	Underwater worker
7221.01	Blacksmith, tool
7221.02	Blacksmith
7221.03	Blacksmith, decorating
7222.01	Supervisor, toolmaker
7222.02	Machinist, adjusting
7222.03	Toolmaker
7222.04	Gunsmith
7223.01	Machine-operator, engraver
7223.02	Setter operator, metalworking
7223.03	Locksmith
7223.04	Setter-operator, grinding machine/metal working

NGF LEVEL 4	74 OCCUPATIONS
7223.05	Adjuster, specialised/ automatical metalworking installation
7224.01	Grinder, metal
7224.02	Sharpener, metal
7224.03	Polisher, metal tools
7231.01	Supervisor, vehicle and motorcycle mechanics and fitters
7231.02	Automechanic
7231.03	Lubricator, train
7231.04	Mechanic, train
7231.05	Mechanic, motorcycle
7231.06	Fitter, vehicle engine
7231.07	Fitter, motorcycle
7231.08	Examiner, technical/vehicle
7232.01	Mechanic, engine/aircraft
7232.02	Fitter, engine/aircraft
7233.01	Headman, industrial and other machinery mechanics and fitters group
7233.02	Mechanic, office equipment
7233.03	Maintenance person
7233.04	Mechanic, energetics equipment and machinery
7233.05	Mechanic, air-conditioning and cooling equipment
7233.06	Mechanic, industrial machinery and equipment
7233.07	Mechanic, agriculture machinery and equipment
7233.08	Fitter, energetics machinery and equipment
7233.09	Fitter, air-conditioning machinery and equipment
7233.10	Fitter, industrial machinery and equipment
7233.11	Machinist, machinery
7233.12	Mechanic, machinery
7233.13	Maintenance person, pneumatics and hydraulics equipment
7241.03	Mechanic, electrical/production machinery and equipment
7311.01	Supervisor, precision-instrument makers and repairers group
7311.02	Worker, precision-instrument
7311.03	Maker, optical instruments
7311.04	Maker, orthopedic and other health aid devices
7311.05	Maker, precision devices and equipment
7311.06	Controller, precision devices
7311.08	Repairer, precision instruments and devices
7311.09	Watch maker

NQF LEVEL 3	43 OCCUPATIONS
8121.01	Headperson, metal processing plant and machinery operators group
8121.02	Controller, metallurgy processing and production
8121.03	Furnace-operator, converting / non-ferrous metal
8121.04	Furnace-operator, metal processing line
8121.05	Furnace-operator, melting/metal
8121.06	Plant operator, metal processing
8122.01	Headman, metal industrial melters and rolling-mill operators group
8122.02	Furnace operator, melting/metal
8122.03	Machine operator, casting/metal
8122.04	Operator, rolling mill/metal
8123.01	Temperer
8123.02	Furnace-operator, fire(ember)-treating/metal
8123.03	Furnace operator, heat-treating/metal
8124.01	Extruder, industrial wire
8124.02	Machine operator, moulding/metal
8124.03	Machine operator, drawing/metal
8211.01	Supervisor, machine - tool operators group
8211.02	Controller, metal production
8211.03	Machine operator, grinding/metal
8211.04	Machine operator, carving/metal
8211.05	Machine operator, cutting/metal
8211.06	Lathe-operator, metal
8211.07	Machine operator, welding/metal
8211.08	Machine operator, boring/metal
8211.09	Machine operator, eroding/metal
8211.10	Press-operator, metal
8211.11	Automatic machine operator, bending/wire
8211.12	Machine operator, automatic/milling
8222.01	Machine-operator, ammunition and explosive products
8223.01	Machine-operator, plating/metal
8223.02	Machine-operator, coating/metal
8223.03	Machine-operator, finishing/metal
8231.01	Manufacturer, industrial/pneumatics
8231.02	Auto-mechanic, industrial
8281.01	Assembler, engine
8281.02	Assembler, production equipment
8281.03	Assembler, vehicle
8284.02	Assembler, metal products

NGF LEVEL 4	43 OCCUPATIONS
8290.01	Filler, technical gases
8290.02	Machine-operator, labelling
8290.03	Filler, oil-driven machinery
8290.04	Machine-operator, packing
8290.05	Assembler, optical frames and lenses

NQF LEVEL 1,2	3 OCCUPATIONS
9320.10	Labourer, elementary work/metal production and products
9320.11	Labourer, elementary work/machinery and equipment production
9320.13	Labourer, manufacturing/vessel and vehicle

NQF LEVEL 3, 4, 5+	3 OCCUPATIONS
1222.02	Department manager, production and operation/manufacturing
1222.03	Department manager, production and operation/water, gas and electricity supply
1314.03	Small organisation manager, car repair

Annex 2

THE UNEMPLOYED WITH MECHANICAL ENGINEERING OCCUPATIONS, 2015, SOURCE: MINISTRY OF LABOUR AND SOCIAL WELFARE

ISC088 Codes Mechanical Engineering Skill Sector		Unemployed Total	Unemployed Women	Employed From Register	Employed Women From The Register	Vacancies Total	Share Of Women In Unemployment	Share Of Women In Employed From Register, %	Vacancies/ Unemployed
TOTAL		3439	240	337	7	2975	6.98	2.08	--
122	Production and operation department managers	8	1	0	0	8	12.50	--	100.0
1224.03	Department manager, production and operation/motor-driven equipment repair and maintenance	200.0	0	0	0	0	--	--	--
1222.02	Department manager, production and operation/manufacturing	2	1	0	0	2	50.00	--	100.0
1222.03	Department manager, production and operation/water, gas and electricity supply	1	0	0	0	0	--	--	--
214	Architects, engineers and related professionals	167	30	17	0	118	17.96	--	70.7
2145.09	Engineer, mechanical	82	13	12	0	84	15.85	--	102.4
2147.09	Technologist, metallurgy	19	3	0	0	5	15.79	--	26.3
2147.05	Metallurgist, production	13	0	1	0	0	--	--	--
2147.07	Metallurgist	13	3	2	0	0	23.08	--	--
2145.02	Engineer, mechanical/processing technique	9	1	1	0	7	11.11	--	77.8
2145.06	Engineer, construction machinery	9	2	0	0	4	22.22	--	44.4
2145.04	Engineer, mechanical/energies	7	3	1	0	5	42.86	--	71.4

ISC088
Codes Mechanical
Engineering Skill Sector

		Unemployed Total	Unemployed Women	Employed From Register	Employed Women From The Register	Vacancies Total	Share Of Women In Unemployment	Share Of Women In Employed From Register, %	Vacancies/ Unemployed
TOTAL		3439	240	337	7	2975	6.98	2.08	--
2145.03	Engineer, mechanical/ automation	5	0	0	0	2	-	-	40.0
2147.22	Other metallurgist engineer	3	1	0	0	6	33.33	--	200.0
2145.1	Technologist, engineering/ mechanical	2	1	0	0	0	50.00	--	--
2145.11	Engineer, mechanical, planner	2	1	0	0	3	50.00	--	150.0
2147.21	Engineer, metallurgist/ metal production and processing	2	1	0	0	0	50.00	--	--
2145.13	Engineer, mechanical/ supervisor	1	1	0	0	2	100.00	--	200.0
232	Secondary education teaching professionals	22	2	0	0	16	9.09	--	72.7
2325.05	Teacher, mechanics	3	0	0	0	0	--	--	--
2322.06	Teacher, mechanics	1	0	0	0	0	--	--	--
2325.04	Teacher, energics machinery	0	0	0	0	2	--	--	--
233	Pre-primary and primary education teachers	3	2	0	0	4	66.67	--	133.3
2331.12	Teacher, technical production basis	3	2	0	0	4	66.67	--	133.3

**ISC088
Codes Mechanical
Engineering Skill Sector**

		Unemployed Total	Unemployed Women	Employed From Register	Employed Women From The Register	Vacancies Total	Share Of Women In Unemployment	Share Of Women In Employed From Register, %	Vacancies/ Unemployed
TOTAL		3439	240	337	7	2975	6.98	2.08	--
311	Technical and technology technicians	946	87	94	6	265	9.20	6.4	28.0
3115.09	Technician, engineering/mechanical	676	56	68	4	196	8.28	5.9	29.0
3117.06	Technician, metallurgy technology	48	5	2	0	5	10.42	--	10.4
3117.07	Technician, non-ferrous metallurgy	48	0	4	0	4	--	--	8.3
3115.06	Technician, engineering/construction machinery	38	4	2	0	0	10.53	--	--
3115.05	Technician, engineering/energetics machinery	34	5	4	1	18	14.71	25	52.9
3115.03	Technician, engineering/processing machinery	21	2	5	1	35	9.52	20	166.7
3115.07	Technician, engineering/technological machinery	20	5	3	0	0	25.00	--	--
3118.09	Draughtsperson, mechanical	20	5	4	0	4	25.00	--	20.0
3115.04	Technician, engineering/automation machinery	14	2	0	0	0	14.29	--	--
3115.01	Foreman, engineering/mechanical	12	0	0	0	0	--	--	--
3117.08	Technician, ferrous metallurgy	10	3	2	0	0	30.00	--	--
3115.1	Forman, engineering/machinery	2	0	0	0	3	--	--	150.0
3119.05	Expert, associated/production processes analysis and planning	2	0	0	0	0	--	--	--
3117.01	Supervisor, metallurgy/production line	1	0	0	0	0	--	--	--
312	Computer associate professional	1	0	0	0	0	--	--	--

**ISCO88
Codes Mechanical
Engineering Skill Sector**

		Unemployed Total	Unemployed Women	Employed From Register	Employed Women From The Register	Vacancies Total	Share Of Women In Unemployment	Share Of Women In Employed From Register, %	Vacancies/ Unemployed
TOTAL		3439	240	337	7	2975	6.98	2.08	--
3123.02	Technician, robotics	1	0	0	0	0	--	--	--
314	Ship and aircraft controllers and technicians	1	0	0	0	0	--	--	--
3143.03	Mechanic, aircraft	1	0	0	0	0	--	--	--
713	Building finishers	296	12	30	0	411	4.05	--	138.9
7136.07	Plumber	215	8	25	0	350	3.72	--	162.8
7136.05	Fitter, heating equipment	35	0	5	0	35	--	--	100.0
7136.04	Installer, air conditioner equipment	31	2	0	0	21	6.45	--	67.7
7136.02	Installer, insulation	10	2	0	0	5	20.00	--	50.0
7136.03	Fitter, cooling equipment	3	0	0	0	0	--	--	--
7136.06	Fitter, gas equipment	2	0	0	0	0	--	--	--
721	Metal moulders, welders, sheet-metal workers, structural-metal preparers	408	5	52	0	1042	1.23	--	255.4
7212.03	Welder	216	3	23	0	672	1.39	--	311.1
7212.02	Electrowelder	72	0	7	0	70	--	--	97.2
7213.01	Car-body repair	35	0	6	0	138	--	--	394.3
7212.01	Welder, gas	29	1	9	0	91	3.45	--	313.8
7211.04	Moulder, metal	21	0	0	0	0	--	--	--

**ISC088
Codes Mechanical
Engineering Skill Sector**

		Unemployed Total	Unemployed Women	Employed From Register	Employed Women From The Register	Vacancies Total	Share Of Women In Unemployment	Share Of Women In Employed From Register, %	Vacancies/ Unemployed
TOTAL		3439	240	337	7	2975	6.98	2.08	--
7213.05	Tins smith	15	0	2	0	30	--	--	200.0
7214.01	Erector, structural metal	6	1	3	0	20	16.67	--	333.3
7213.03	Sheet-metal worker	5	0	0	0	4	--	--	80.0
7211.02	Moulder, metal castings	3	0	1	0	9	--	--	300.0
7215.01	Rigger	3	0	0	0	2	--	--	66.7
7212.04	Welder, specialised	2	0	0	0	2	--	--	100.0
7211.05	Master, metal moulding	1	0	0	0	0	--	--	--
7213.04	Worker, sheet	0	0	1	0	4	--	--	--
7214.02	Riveter	0	0	0	0	0	--	--	--
722	Blacksmiths, tool-makers and related trade workers	195	6	24	0	84	3.08	--	43.1
7222.02	Machinist, adjusting	107	1	13	0	42	0.93	--	39.3
7223.04	Setter -operator, grinding machine/ metal working	52	2	10	0	35	3.85	--	67.3
7223.03	Locksmith	11	0	1	0	4	--	--	36.4
7221.01	Blacksmith, tool	6	2	0	0	0	33.33	--	--
7222.03	Toolmaker	4	0	0	0	0	--	--	--
7223.05	Adjuster, specialised/ automatical metalworking installation	4	0	0	0	0	--	--	--

ISCO88
Codes Mechanical
Engineering Skill Sector

		Unemployed Total	Unemployed Women	Employed From Register	Employed Women From The Register	Vacancies Total	Share Of Women In Unemployment	Share Of Women In Employed From Register, %	Vacancies/ Unemployed
TOTAL		3439	240	337	7	2975	6.98	2.08	--
7224.03	Polisher, metal tools	4	0	0	0	3	--	--	75.0
7223.02	Setter operator, metalworking	3	0	0	0	0	--	--	--
7221.02	Blacksmith	1	0	0	0	0	--	--	--
7221.03	Blacksmith, decorating	1	1	0	0	0	100.00	--	--
7224.01	Grinder, metal	1	0	0	0	0	--	--	--
7224.02	Sharpener, metal	1	0	0	0	0	--	--	--
723	Machinery mechanics and fitters	1316	92	110	1	1016	6.99	0.91	77.2
7231.02	Automechanic	804	16	74	1	770	1.99	1.35	95.8
7233.11	Machinist, machinery	302	6	25	0	98	1.99	--	32.5
7233.12	Mechanic, machinery	94	8	2	0	49	8.51	--	52.1
7233.03	Maintenance person	62	59	2	0	50	95.16	--	80.6
7233.07	Mechanic, agriculture machinery and equipment	12	1	0	0	0	8.33	--	--
7233.04	Mechanic, energetics equipment and machinery	8	0	0	0	6	--	--	75.0
7233.13	Maintenance person, pneumatics and hydraulics equipment	6	0	5	0	24	--	--	400.0
7233.06	Mechanic, industrial machinery and equipment	5	1	0	0	3	20.00	--	60.0
7231.04	Mechanic, train	4	1	0	0	0	25.00	--	--

**ISC088
Codes Mechanical
Engineering Skill Sector**

		Unemployed Total	Unemployed Women	Employed From Register	Employed Women From The Register	Vacancies Total	Share Of Women In Unemployment	Share Of Women In Employed From Register, %	Vacancies/ Unemployed
TOTAL		3439	240	337	7	2975	6.98	2.08	--
7213.05	Tins smith	15	0	2	0	30	--	--	200.0
7214.01	Erector, structural metal	6	1	3	0	20	16.67	--	333.3
7213.03	Sheet-metal worker	5	0	0	0	4	--	--	80.0
7211.02	Moulder, metal castings	3	0	1	0	9	--	--	300.0
7215.01	Rigger	3	0	0	0	2	--	--	66.7
7212.04	Welder, specialised	2	0	0	0	2	--	--	100.0
7211.05	Master, metal moulding	1	0	0	0	0	--	--	--
7213.04	Worker, sheet	0	0	1	0	4	--	--	--
7214.02	Riveter	0	0	0	0	0	--	--	--
722	Blacksmiths, tool-makers and related trade workers	195	6	24	0	84	3.08	--	43.1
7222.02	Machinist, adjusting	107	1	13	0	42	0.93	--	39.3
7223.04	Setter -operator, grinding machine/ metal working	52	2	10	0	35	3.85	--	67.3
7223.03	Locksmith	11	0	1	0	4	--	--	36.4
7221.01	Blacksmith, tool	6	2	0	0	0	33.33	--	--
7222.03	Toolmaker	4	0	0	0	0	--	--	--
7223.05	Adjuster, specialised/ automatical metalworking installation	4	0	0	0	0	--	--	--

ISCO88
Codes Mechanical
Engineering Skill Sector

		Unemployed Total	Unemployed Women	Employed From Register	Employed Women From The Register	Vacancies Total	Share Of Women In Unemployment	Share Of Women In Employed From Register, %	Vacancies/ Unemployed
TOTAL		3439	240	337	7	2975	6.98	2.08	--
7224.03	Polisher, metal tools	4	0	0	0	3	--	--	75.0
7223.02	Setter operator, metalworking	3	0	0	0	0	--	--	--
7221.02	Blacksmith	1	0	0	0	0	--	--	--
7221.03	Blacksmith, decorating	1	1	0	0	0	100.00	--	--
7224.01	Grinder, metal	1	0	0	0	0	--	--	--
7224.02	Sharpener, metal	1	0	0	0	0	--	--	--
723	Machinery mechanics and fitters	1316	92	110	1	1016	6.99	0.91	77.2
7231.02	Automechanic	804	16	74	1	770	1.99	1.35	95.8
7233.11	Machinist, machinery	302	6	25	0	98	1.99	--	32.5
7233.12	Mechanic, machinery	94	8	2	0	49	8.51	--	52.1
7233.03	Maintenance person	62	59	2	0	50	95.16	--	80.6
7233.07	Mechanic, agriculture machinery and equipment	12	1	0	0	0	8.33	--	--
7233.04	Mechanic, energetics equipment and machinery	8	0	0	0	6	--	--	75.0
7233.13	Maintenance person, pneumatics and hydraulics equipment	6	0	5	0	24	--	--	400.0
7233.06	Mechanic, industrial machinery and equipment	5	1	0	0	3	20.00	--	60.0
7231.04	Mechanic, train	4	1	0	0	0	25.00	--	--

**ISC088
Codes Mechanical
Engineering Skill Sector**

		Unemployed Total	Unemployed Women	Employed From Register	Employed Women From The Register	Vacancies Total	Share Of Women In Unemployment	Share Of Women In Employed From Register, %	Vacancies/ Unemployed
TOTAL		3439	240	337	7	2975	6.98	2.08	--
7231.08	Examiner, technical/vehicle	4	0	1	0	10	--	--	250.0
7231.01	Supervisor, vehicle and motorcycle mechanics and fitters	3	0	0	0	0	--	--	--
7231.06	Fitter, vehicle engine	3	0	0	0	2	--	--	66.7
7233.01	Headman, industrial and other machinery mechanics and fitters group	2	0	0	0	0	--	--	--
7233.05	Mechanic, air-conditioning and cooling equipment	2	0	0	0	0	--	--	--
7233.08	Fitter, energetics machinery and equipment	2	0	0	0	0	--	--	--
7233.09	Fitter, air-conditioning machinery and equipment	2	0	1	0	4	--	--	200.0
7232.01	Mechanic, engine/aircraft	1	0	0	0	0	--	--	--
724	Electrical and electronic equipment mechanics	17	0	0	0	0	--	--	--
7241.15	Fitter, electrical and energetics machinery	10	0	0	0	0	--	--	--
7241.14	Fitter, electrical/production equipment and machinery	4	0	0	0	0	--	--	--
7241.13	Fitter, cooling and air-conditioning equipment	3	0	0	0	0	--	--	--
731	Precision workers in metal and related materials	9	1	0	0	2	11.11	--	22.2
7313.03	Silversmith	6	1	0	0	2	16.67	--	33.3
7311.05	Maker, precision devices and equipment	1	0	0	0	0	--	--	--
7311.06	Controller, precision devices	1	0	0	0	0	--	--	--

ISCO88
Codes Mechanical
Engineering Skill Sector

		Unemployed Total	Unemployed Women	Employed From Register	Employed Women From The Register	Vacancies Total	Share Of Women In Unemployment	Share Of Women In Employed From Register, %	Vacancies/ Unemployed
TOTAL		3439	240	337	7	2975	6.98	2.08	--
7313.04	Filigranist	1	0	0	0	0	--	--	--
812	Metal processing plant operators	18	3	0	0	5	16.67	--	27.8
8121.04	Furnace-operator, metal processing line	5	2	0	0	0	40.00	--	--
8121.02	Controller, metallurgy processing and production	3	0	0	0	0	--	--	--
8121.03	Furnace-operator, converting / non-ferrous metal	3	0	0	0	3	--	--	100.0
8121.06	Plant operator, metal processing	2	1	0	0	0	50.00	--	--
8124.02	Machine operator, moulding/ metal	2	0	0	0	0	--	--	--
8123.02	Furnace-operator, fire(ember)-treating/metal	1	0	0	0	0	--	--	--
8123.03	Furnace operator, heat-treating/ metal	1	0	0	0	0	--	--	--
8124.03	Machine operator, drawing/ metal	1	0	0	0	1	--	--	100.0
8121.05	Furnace-operator, melting/ metal	0	0	0	0	1	--	--	--
821	Metal- and mineral-products machine operators	23	0	3	0	0	--	--	--
8211.06	Lathe-operator, metal	8	0	1	0	0	--	--	--
8211.07	Machine operator, welding/ metal	5	0	1	0	0	--	--	--
8211.04	Machine operator, carving/ metal	3	0	0	0	0	--	--	--
8211.03	Machine operator, grinding/ metal	2	0	0	0	0	--	--	--

ISC088 Codes Mechanical Engineering Skill Sector		Unemployed Total	Unemployed Women	Employed From Register	Employed Women From The Register	Vacancies Total	Share Of Women In Unemployment	Share Of Women In Employed From Register, %	Vacancies/ Unemployed
TOTAL		3439	240	337	7	2975	6.98	2.08	--
8211.08	Machine operator, boring/metal	2	0	0	0	0	--	--	--
8211.02	Controller, metal production	1	0	0	0	0	--	--	--
8211.09	Machine operator, eroding/metal	1	0	0	0	0	--	--	--
8211.12	Machine operator, automatic/milling	1	0	1	0	0	--	--	--
822	Chemical-products machine operators	3	1	0	0	0	33.33	--	--
8223.01	Machine-operator, plating/metal	1	0	0	0	0	--	--	--
8223.02	Machine-operator, coating/metal	1	1	0	0	0	100.00	--	--
8223.03	Machine-operator, finishing/metal	1	0	0	0	0	--	--	--
823	Rubber- and plastic-products machine operators	17	0	0	0	7	--	--	41.2

**ISCO88
Codes Mechanical
Engineering Skill Sector**

		Unemployed Total	Unemployed Women	Employed From Register	Employed Women From The Register	Vacancies Total	Share Of Women In Unemployment	Share Of Women In Employed From Register, %	Vacancies/ Unemployed
TOTAL		3439	240	337	7	2975	6.98	2.08	--
8231.02	Auto-mechanic, industrial	15	0	0	0	7	--	--	46.7
8231.01	Manufacturer, industrial/ pneumatics	2	0	0	0	0	--	--	-
828	Assemblers	5	0	7	0	13	--	--	260.0
8284.02	Assembler, metal products	3	0	4	0	4	--	--	133.3
8281.02	Assembler, production equipment	1	0	0	0	3	--	--	300.0
8281.03	Assembler, vehicle	1	0	3	0	6	--	--	600.0
932	Manufacturing labourers	4	0	0	0	4	--	--	100.0
9320.11	Labourer, manufacturing/machinery and equipment	4	0	0	0	4	--	--	100.0

Annex 3

LIST OF VET TRAINING PROGRAMMES FROM THE MECHANICAL ENGINEERING SKILL SECTOR 2014-2015, MEST

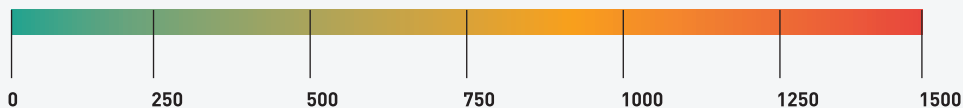
ENROLMENT IN VET SCHOOLS WHICH OFFER MECHANICAL ENGINEERING SECTOR PROGRAMMES BY REGION AND PROGRAM NAME, 2015/2016

Regions and Schools	ENERGETICS	OFFICE EQUIPMENT REPAIR	CAR MECHATRONICS	INDUSTRIAL CLERK	OPTICS	PLUMBING AND SEWERAGE	METAL WORKING	CAR MECHANIC2	METALWORKER	METAL TECHNICIAN	METAL PROCESSING	CAR MECHANIC	HEATING AND COOLING	PRODUCTION OPERATOR	TOTAL
FERIZAJ	0	0	0	0	72	48	0	135	26	0	24	25	166	152	648
Feriz Guri dhe Vëllezërit Çaka	0	0	0	0	0	37	0	44	0	0	0	0	52	0	133
Naim Frasheri	0	0	0	0	0	0	0	0	0	0	0	0	58	23	81
Pjetër Bogdani	0	0	0	0	0	11	0	91	26	0	24	25	56	129	362
Centre of Competence	0	0	0	0	72	0	0	0	0	0	0	0	0	0	72
GJAKOVE	45	0	0	0	0	72	0	85	0	0	0	73	18	45	346
12 Maji	0	0	0	0	0	0	0	27	0	0	0	0	0	0	27
Nexhmedin Nixha	45	0	0	0	0	0	0	58	0	0	0	0	0	45	148
Selajdin Mullaabazi-Mici	0	0	0	0	0	26	0	0	0	0	0	16	18	0	60
Tafil Kasumaj	0	0	0	0	0	54	0	0	0	0	0	57	0	0	111
GJILAN	69	0	0	0	0	34	0	146	0	0	0	0	160	111	520
Andrea Durrsaku	40	0	0	0	0	0	0	9	0	0	0	0	27	0	76
Andrea Durrsaku 1	0	0	0	0	0	0	0	0	0	0	0	0	32	0	32
Jonuz Zejnullahu	29	0	0	0	0	34	0	44	0	0	0	0	64	56	227
Mehmet Isai	0	0	0	0	0	0	0	66	0	0	0	0	37	55	158
Tehniçka shkolla	0	0	0	0	0	0	0	27	0	0	0	0	0	0	27

Regions and Schools

	ENERGETICS	OFFICE EQUIPMENT REPAIR	CAR MECHATRONICS	INDUSTRIAL CLERK	OPTICS	PLUMBING AND SEWERAGE	METAL WORKING	CAR MECHANIC2	METALWORKER	METAL TECHNICIAN	METAL PROCESSING	CAR MECHANIC	HEATING AND COOLING	PRODUCTION OPERATOR	TOTAL
MITROVICA	16	0	0	0	0	18	21	166	0	133	0	0	100	301	755
Anton Çetta	0	0	0	0	0	0	0	44	0	0	0	0	0	75	119
Arkitekt Sinani	16	0	0	0	0	0	0	60	0	45	0	0	28	39	188
Bahri Haxha	0	0	0	0	0	0	0	0	0	88	0	0	0	0	88
Lutfi Musiqi	0	0	0	0	0	0	0	62	0	0	0	0	53	187	302
Centre of Competence	0	0	0	0	0	18	21	0	0	0	0	0	19	0	58
PEJA	93	0	20	0	0	107	0	256	60	0	0	7	121	248	912
Fehmi Agani	15	0	0	0	0	61	0	61	10	0	0	0	0	116	263
Mithat Frashëri	51	0	0	0	0	0	0	38	50	0	0	0	52	112	303
Mithat Frashëri 1	0	0	0	0	0	0	0	25	0	0	0	0	8	20	53
Shaban Spahija	27	0	20	0	0	46	0	132	0	0	0	0	61	0	293
PRISHTINA	402	61	58	0	0	25	0	336	27	44	0	70	256	110	1389
Adem Gllavica	0	0	0	0	0	0	0	0	0	0	0	0	42	61	103
Fan S Noli	0	0	0	0	0	0	0	95	0	0	0	0	23	0	118
Fehmi Lladrovcvi	53	0	0	0	0	0	0	78	0	44	0	62	66	12	315
Gjin Gazulli	193	61	0	0	0	0	0	0	0	0	0	0	0	0	254
Ismail Dumoshi	100	0	0	0	0	0	0	0	0	0	0	0	0	37	137
Minatori	56	0	0	0	0	0	0	0	0	0	0	0	0	0	56
SHML Mikste	0	0	0	0	0	0	0	0	0	0	0	8	0	0	8
Shtjefën Gjeqovi	0	0	58	0	0	25	0	163	27	0	0	0	125	0	398
PRIZREN	0	0	0	48	0	139	0	231	28	0	0	24	265	18	753
11 Marsi	0	0	0	0	0	64	0	184	28	0	0	0	154	0	430
Centre of Competence Prizren	0	0	0	48	0	0	0	0	0	0	0	0	0	0	48
Skender Luarasi	0	0	0	0	0	75	0	47	0	0	0	24	111	18	275
TOTAL	625	61	78	48	72	451	21	1355	141	177	24	199	1086	985	5323

TOTAL STATISTICS OF REGIONS



PRISHTINA
TOTAL

1389



PEJA
TOTAL

912



MITROVICA
TOTAL

755



PRIZREN
TOTAL

753



FERIZAJ
TOTAL

648



GJILAN
TOTAL

520



GJAKOVE
TOTAL

346

TOTAL STATISTICS OF MECHANICAL ENGINEERING SECTOR

ENERGETICS

TOTAL



625

OFFICE EQUIPMENT REPAIR

TOTAL



61

CAR MECHATRONICS

TOTAL



78

INDUSTRIAL CLERK

TOTAL



48

OPTICS

TOTAL



72

PLUMBING AND SWERAGE

TOTAL



451

METAL WORKING

TOTAL



21

CAR MECHANIC 2

TOTAL



1355

METALWORKER

TOTAL



141

METAL TECHNICIAN

TOTAL



177

METAL PROCESSING

TOTAL



24

CAR MECHANIC

TOTAL



199

HEATING AND COOLING

TOTAL



1086

PRODUCTION OPERATOR

TOTAL



985

Annex 4

HIGHER EDUCATION TRAINING PROGRAMMES BELONGING TO THE MECHANICAL ENGINEERING SKILL SECTOR, PM OFFICE

ENROLMENT IN MECHANICAL ENGINEERING TRAINING PROGRAMMES BY UNIVERSITY,
GENDER, PROGRAMME NAME AND ACADEMIC YEARS 2010/11 -2014/15

University name, type of study and programme name	TOTAL 2010/11	WOMEN 2010/11	TOTAL 2011/12	WOMEN 2011/12	TOTAL 2012/13	WOMEN 2012/13	TOTAL 2013/14	WOMEN 2013/14	TOTAL 2014/15	WOMEN 2014/15
UNIVERSITY OF PRISHTINA	1500	316	1344	249	1399	244	1202	230	1633	347
BACHELOR	1327	295	1172	227	1240	225	1018	200	1408	311
Ser	--	--	--	--	--	--	15	3	98	26
Automatike	154	30	162	38	183	42	160	43	170	41
Elektroenergjetike	--	--	--	--	--	--	--	--	134	32
Elektroenergjetika industrijale	153	50	146	32	180	44	180	33	122	31
Elektroenergjetika ne prodhimitari	24	7	21	6	--	--	--	--	--	--
Inxhinieri industrijale dhe menaxhment	--	--	--	--	--	--	19	4	97	37
Makineri industrijale	190	35	183	32	181	24	--	--	--	--
Mekatronike	--	--	--	--	--	--	55	1	124	6
Metalurgji	60	13	48	10	48	10	--	--	--	--
Prodhimtari dhe automatizem	132	24	116	11	132	17	109	7	162	27
Sistemet elektroenergjetike	267	50	283	81	266	62	338	76	228	93
Teknologji-drejtimit tjera	148	71	--	--	--	--	--	--	--	--
Termoenergjetike dhe termotehnikë	199	15	213	17	250	26	142	33	273	18

University name, type of study and programme name	TOTAL 2010/11	WOMEN 2010/11	TOTAL 2011/12	WOMEN 2011/12	TOTAL 2012/13	WOMEN 2012/13	TOTAL 2013/14	WOMEN 2013/14	TOTAL 2014/15	WOMEN 2014/15
UNIVERSITY OF PRISHTINA	1500	316	1344	249	1399	244	1202	230	1633	347
MASTER	173	21	169	21	159	19	184	30	225	36
Prodhimtari dhe automatizem	24	2	23	4	27	3	29	4	32	9
Automatike	3	1	5	1	8	2	9	3	5	1
Elektroenergetika industriale	7	0	15	4	6	2	75	9	32	7
Konstruksionet kinerike	--	--	4	0	--	--	--	--	--	--
Makinerija industriale	31	4	--	--	--	--	--	--	--	--
Materiale dhe metalurji metalike	--	--	--	--	7	1	--	--	--	--
Sistemet elektroenergetike	57	6	66	7	78	9	45	8	96	10
Teknologjia perpunimit me prerje	31	4	44	5	--	--	--	--	--	--
Termoenergetike dhe termotehnike	20	4	12	0	33	2	26	6	60	9
DOKTORATURË	--	--	3	1	--	--	--	--	--	--
Teknika e ngrohjes dhe energjetikes	--	--	3	1	--	--	--	--	--	--

University name, type of study and programme name	TOTAL 2010/11	WOMEN 2010/11	TOTAL 2011/12	WOMEN 2011/12	TOTAL 2012/13	WOMEN 2012/13	TOTAL 2013/14	WOMEN 2013/14	TOTAL 2014/15	WOMEN 2014/15
UNIVERSITETI I MITROVICËS "ISA BOLETINI"	--	--	--	--	--	--	93	12	253	45
BACHELOR	--	--	--	--	--	--	63	9	209	37
Makineri Prodhuese	--	--	--	--	--	--	47	7	125	23
Materiale dhe Metalurgji	--	--	--	--	--	--	16	2	84	14
MASTER	--	--	--	--	--	--	30	3	44	8
Materiale	--	--	--	--	--	--	4	1	3	1
Metalurgji	--	--	--	--	--	--	5	0	8	1
Profili I Deformimit	--	--	--	--	--	--	10	0	9	0
Profili I Prerjes	--	--	--	--	--	--	11	2	24	6
KOLEGIJ	53	0	84	3	106	8	125	9	171	15
BACHELOR	44	0	69	2	74	5	91	6	145	12
Inxhinieri Energjetike	0	0	0	0	0	0	0	0	15	4
Menaxhimi I Mekatronikes	44	0	69	2	74	5	91	6	130	8
MASTER	9	0	15	1	32	3	34	3	26	3
Menaxhimi I Mekatronikes	9	0	15	1	32	3	34	3	26	3
TOTAL ENG	1553	316	1428	252	1505	252	1420	251	2057	407

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