

A. GENERAL

This publication presents the outputs of the technological track, as reflected in achievements on matriculation exams among pupils in that track. The data relate to twelfth grade pupils from the 2002/03 cohort, and to those among them who took matriculation exams and were entitled to matriculation certificates.¹

The number of twelfth grade pupils enrolled in the technological track in 2002/03 amounted to 35%, i.e., a third of all secondary school graduates in Israel. The technological track has varying curricula, depending on the specialization. The curricula range from specializations that emphasize advanced technologies, to programs that offer training in other areas. Budgeting for technological tracks is based on several variables, some relating to the pupils (e.g., grade, track and specialization), and others relating to the school. One of the major variables that defines both pupils and schools is matriculation exams.

Matriculation exams are the final, culminating stage of secondary school studies, and the matriculation certificate given to pupils who pass the exams allows for continuation of studies in institutions of higher education and other post-secondary educational institutions. The rates of examinees and pupils entitled to a certificate are

¹ See additional CBS publications on matriculation exams:

Twelfth Grade Pupils, Examinees, and Entitled to Matriculation Certificates in Localities – 1988/89, Publication No. 907, Jerusalem, 1992 (Hebrew only).

Twelfth Grade Pupils of the 1993/94 School Year who Sat for Matriculation and Completion Examinations in 1994 and are Entitled to a Certificate, by Localities, Publication No. 1064, Jerusalem, 1997 (Hebrew only).

Twelfth Grade Pupils, Matriculation Examinees and Entitled to a Certificate, by Locality of Residence, 1996, Publication No. 1115, Jerusalem, 1999.

Twelfth Grade Pupils, Matriculation Examinees and Entitled to a Certificate, by Locality of Residence, 1998, Publication No. 1169, Jerusalem, 2002.

Twelfth Grade Pupils, Matriculation Examinees and Entitled to a Certificate, by Locality of Residence 2002–2003, Publication No. 1233, Jerusalem, 2005.

Pupils who Took Matriculation and Final Exams and Are Entitled to Certificates, 1990-1991, Publication No. 983, Jerusalem, 1994 (Hebrew only).

Pupils who Took Matriculation and Final Exams and Are Entitled to Certificates, 1993/1994, Publication No. 1045, Jerusalem, 1997.

Pupils who Took Matriculation and Final Exams and Are Entitled to Certificates, 1995/1996, Publication No. 1129, Jerusalem, 2000.

therefore important indices for evaluating the output of the post-primary education system.

This publication presents data on pupils in the technological track who took matriculation exams, by specialization. A distinction is made between **entitled examinees who met university entrance requirements** and are candidates for continuing studies, on the one hand, and **other persons entitled to a matriculation certificate**, on the other. At the same time, examinees who are not entitled to a matriculation certificate are presented according to their **relative achievement**. Relative achievement is measured according to the number of units of study achieved by each examinee, and indicates how close the examinee is to obtaining a matriculation certificate.

The publication deals with these aspects of matriculation exams, and discusses the differences among different population groups and among pupils in various specializations:

- (1) The entire population of twelfth grade pupils;
- (2) The rate of matriculation examinees among all twelfth grade pupils;
- (3) The rate of examinees who are entitled to a matriculation certificate, within all twelfth grade pupils and among all examinees;
- (4) The rate of entitled examinees who met university entrance requirements (within all twelfth grade pupils and among all examinees entitled to a matriculation certificate).

The presentation of data includes two main comparisons:

- All pupils in the technological track compared with all pupils in the academic track, by achievements on the matriculation exams and by socio-economic characteristics.
- In the technological track – a comparison of pupils in different specializations, by achievements on matriculation exams. In the tables following the introduction, the data on pupils are presented by specialization. However, the analysis in the introduction presents data on pupils by **clusters of specializations** which were aggregated according to common characteristics, such as type of program and content, and orientation to advanced technologies.

B. MAIN FINDINGS

1. General

(a) In 2003, there were 32,000 twelfth grade pupils in the technological track – about a third (35%) of all pupils in that cohort in Hebrew and Arab education. The academic track comprised 64% of all pupils, and the agricultural track – 1%. Comparison with data for previous years shows a gradual increase in the relative share of twelfth grade pupils enrolled in the technological track – from 30% in 1998 to 35% in 2003.

The increase in the number of pupils in the technological track was evident in both sectors, but was especially significant in the **Arab education sector**, where the proportion of pupils in the technological track rose from 21% in 1998 to 37% in 2003. During that period, several new specializations were added in the Arab education sector, such as: biotechnology, scientific-technological studies, administration, industry and management, arts of design, and cosmetology (see also Table 3 among the tables following the introduction).

Table 1: Twelfth Grade Pupils, by Track, Sector and Cohort

	Hebrew education				Arab education			
	1998	2000	2001	2003	1998	2000	2001	2003
	Absolute numbers							
Pupils – total	71,411	76,149	78,534	82,057	11,350	12,580	13,109	14,387
	Percentages							
Pupils – total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Track								
Academic	67.1	66.6	67.2	64.2	77.7	70.1	70.8	63.1
Technological	31.4	32.2	31.9	34.5	20.9	28.5	28.3	36.8
Agricultural	1.4	1.2	0.9	1.3	1.4	1.4	0.9	0.1

(b) Fifty-six percent of the pupils (54,000) in the 2002/03 cohort were entitled to a matriculation certificate.

Of all twelfth grade pupils, 82% took the matriculation exams at the end of the 2002/03 school year. Two thirds of the examinees passed the exams and were entitled to a matriculation certificate.

The vast majority of entitled examinees (81%) passed the exams at a level commensurate with university entrance requirements. The university entrance requirements include 3 units of mathematics, 4 units of English, and one subject at an enhanced level (at least 4 units) besides English.

Longitudinal analysis of various aspects of matriculation exams reveals that the rates of examinees, of entitled pupils and of those among them who met university entrance requirements were higher among pupils in the academic track than in the technological one.

As of 2001, the Ministry of Education, Culture and Sport has enabled pupils to revise their matriculation scores in English and mathematics by taking make-up exams. The addition of make-up exams in the above-mentioned subjects led to a rise in the rates of entitlement to a matriculation certificate among twelfth grade pupils in the **Hebrew and Arab education sectors**, from 51% in 2000 to 56% in 2003. Concomitantly, the gap in achievement between pupils in the academic and technological tracks decreased. Although this decrease was evident in both sectors, it was particularly significant in the Arab sector. In 2003, 89% of the pupils in the **academic track** took matriculation exams, compared with 81% in the **technological track**; and 73% of the examinees in the **academic track** were entitled to a matriculation certificate, compared with 60% in the **technological track** (see Table 2 in this introduction, and Table 3 among the tables following the introduction).

- (c) Examination of the data on pupils in the technological track who were divided into clusters of **specializations**¹ reveals a high degree of variance with respect to the composition of population groups in the clusters, as well as with respect to the achievements on matriculation exams among pupils in different clusters. At one extreme, only a third of the pupils in the clusters **Administration and Industrial Systems** and **Engineering, Planning and Control** were entitled to matriculation certificates, and at the other extreme, the achievements of pupils in the cluster **Science-Based Technologies** were substantially higher even than those of pupils in the **academic track**.

¹ See explanation in Chapter B, Section 2: "Clustering of Specializations in the Technological Track."

(d) The increase in entitlement rates following the addition of make-up exams in English and mathematics was not necessarily accompanied by a rise in the level of matriculation certificates: 80%-81% of the **entitled pupils** in 2001-2003 received a matriculation certificate that was commensurate with university entrance requirements, compared with 82% in previous years.

Pupils in the **technological track**, in both the Hebrew and Arab education sectors, were an exception to this trend: the percentage of entitled pupils in this track increased in most of the clusters, and the increase was accompanied by a rise in the level of the matriculation certificates.

Table 2: Twelfth Grade Pupils Entitled to a Matriculation Certificate who Met University Entrance Requirements, by Cohort, Track, and Cluster of Specializations – Hebrew and Arab Education

	2000		2001		2003	
	Entitled to a certificate, as percentage of pupils	Those who met university entrance requirements, as percentage of entitled to a certificate	Entitled to a certificate, as percentage of pupils	Those who met university entrance requirements, as percentage of entitled to a certificate	Entitled to a certificate, as percentage of pupils	Those who met university entrance requirements, as percentage of entitled to a certificate
Grand total	50.6	81.8	55.1	80.2	56.4	80.6
Academic track	61.6	84.7	66.6	82.5	65.0	83.0
Agricultural track	40.8	63.4	46.9	60.1	50.5	68.4
Technological track – total	38.6	73.2	43.1	73.3	48.2	75.2
Cluster of specializations						
Planning, engineering and control systems	23.9	61.1	27.8	63.0	29.4	64.8
Science-based technologies	73.9	85.8	78.4	86.7	78.9	89.5
Communications, paramedical and education systems	43.8	69.7	49.4	70.0	55.9	68.2
Administration and industrial systems	27.8	56.5	28.7	51.6	33.4	52.7
Design	23.9	65.9	29.6	68.1	39.0	74.1

- (e) Of the examinees in the Hebrew and Arab education sectors, 69% took the English matriculation exams at an enhanced level, which is defined as a level of 4 units of study or more.

About half of the examinees in the Hebrew and Arab education sectors (46%) took matriculation exams in at least one scientific subject at an enhanced level. Scientific subjects included mathematics, physics, chemistry, biology, and computer sciences.

Of those examinees, 20% took exams in one scientific subject at an enhanced level (mainly mathematics), 17% took exams in two such subjects, and other 9% took exams in three of the enhanced scientific subjects or more.

- (f) The chances of taking matriculation exams and passing them were higher among pupils in one or more of the following population groups:

- Pupils in Hebrew education (compared with pupils in Arab education);
- Pupils in the academic track (compared with those in technological and agricultural tracks);
- Pupils in the technological track who specialized in the cluster Science-Based Technologies (compared with those in other clusters of specializations in that track, and compared with pupils in the academic track);
- Girls (compared with boys).

Among pupils in Hebrew education:

- Pupils in schools under general and ARE (Administration of Religious Education) supervision (compared with those in schools under ultra-orthodox supervision);
- Israeli-born pupils whose fathers were born in Israel and pupils of European/American origin (compared with pupils of Asian/African origin).

Among pupils in Arab education: Christian pupils (compared with Moslem and Druze pupils).

Additionally, the findings revealed that the higher the parents' level of education (in terms of years of schooling), the greater the pupil's chances of receiving a matriculation certificate.

(g) About a third of the matriculation examinees in the Hebrew and Arab education sectors were not entitled to a matriculation certificate. Twenty-seven percent of the not-entitled pupils in the **academic track** compared with 30% of the not-entitled pupils in the **technological track** had achieved at least 18 out of the 20 required units of study and were close to receiving a matriculation certificate.

2. Clustering of Specializations in the Technological Track

To identify trends in the development of the technological track, and to allow for meaningful analysis of the data, the fields of specialization were aggregated into clusters by **type**. Aggregation into clusters was carried out by staff members at the Ministry of Education, Culture and Sport, so that different specializations in each cluster would be based on common areas of knowledge. The clusters of specializations are similar to the aggregations derived by the ministry in preparation for the reform in technological education.^{1 2} This division aimed, *inter alia*, to combine related subjects from different fields of specialization, so that the subjects could be taught according to common scientific and technological principles (see Table 3).

¹ The Ministry of Education, Culture and Sport. "Implementation of the Reform in Technological Education in the Entire Education System", Director General's Circular 2003/04 1/(a), 1 September 2003 (Hebrew only).

² The cluster "Science-Based Technologies" as determined in the Ministry of Education, Culture and Sport comprises two aggregates of fields: high technology systems, and advanced knowledge systems. The other clusters are completely congruent with the aggregates of fields.

Table 3: Clusters of Specializations in the Technological Track

Cluster of specializations	Specializations included in the cluster
Engineering, planning and control	Mechanics, electricity-electronics (excl. general computers and control, and computers and control for agriculture), maritime studies
Science-based technologies	General computers and control, computers and control for agriculture (in the specialization electricity-electronics), information technologies, industrial chemistry, biotechnology, and scientific-technological studies
Communications, paramedical and education systems	Communications technologies, nursing and other paramedical professions, early childhood education
Administration and industrial systems	Administration, industry and management, tourism
Design	Construction and architecture, wood work, arts of design, fashion, cosmetology

With regard to the data, however, the composition of specializations in a cluster cannot be completely homogeneous, and there may be variance in matriculation exams achievements among pupils in different fields of specialization in each cluster (see Tables 4–6).

Table 4: Twelfth Grade Pupils, Matriculation Examinees, and Entitled to a Certificate, by Track, Cluster and Specialization – Hebrew and Arab Education

Percentages, unless otherwise stated

2003

	Pupils – total, absolute numbers	Examinees, of pupils	Entitled to a certificate		Met university entrance requirements		
			Of pupils	Of examinees	Of pupils	Of examinees	Of entitled to a certificate
Grand total	96,444	82.5	56.4	68.3	45.5	55.1	80.6
Academic track	58,928	89.2	65.0	72.9	54.0	60.5	83.0
Agricultural track	1,051	91.8	50.5	55.0	34.5	37.6	68.4
Technological track – total	32,052	81.0	48.4	59.8	36.4	45.0	75.2
Cluster and specialization							
Engineering, planning and control – total	5,874	68.9	29.4	42.7	19.1	27.7	64.8
Mechanics	3,305	70.7	32.2	45.5	22.0	31.1	68.4
Electricity-electronics ⁽¹⁾	2,370	63.9	24.6	38.5	14.7	23.0	59.7
Maritime studies	199	100.0	41.7	41.7	23.1	23.1	55.4
Science-based technologies – total	8,765	97.9	78.9	80.7	70.7	72.2	89.5
Electronic systems, computerization and control ⁽¹⁾	3,138	97.3	72.6	74.6	59.7	61.3	82.2
Information technologies	3,731	97.3	79.8	81.9	73.9	75.9	92.6
Industrial chemistry	53	98.1	52.8	53.8	43.4	44.2	82.1
Biotechnology	903	100.0	91.1	91.1	87.9	87.9	96.5
Scientific-technological studies	940	99.8	86.6	86.8	79.7	79.9	92.0
Communications, paramedical and education systems – total	3,496	89.6	55.9	62.4	38.2	42.6	68.3
Communications technologies	2,484	89.1	58.0	65.1	43.6	48.9	75.1
Nursing and other paramedical professions	357	99.4	73.4	73.8	40.9	41.1	55.7
Early childhood education	655	86.4	38.6	44.7	16.3	18.9	42.3
Administration and industrial systems – total	8,608	73.1	33.4	45.7	17.6	24.1	52.7
Administration	7,675	71.1	30.5	42.8	14.3	20.1	46.9
Industry and management	515	99.6	71.7	71.9	57.3	57.5	79.9
Tourism	418	77.8	40.0	51.4	29.9	38.5	74.9
Design – total	5,232	74.5	39.0	52.3	28.9	38.8	74.1
Construction and architecture	649	85.7	45.3	52.9	34.5	40.3	76.2
Wood work	140	..	..	..	..	..	..
Arts of design	3,052	84.7	52.1	61.6	40.6	48.0	77.9
Fashion	974	68.2	15.9	23.3	4.9	7.2	31.0
Cosmetology	417	..	..	..	..	..	..

⁽¹⁾ Several specializations of electricity-electronics were included in the cluster Science-Based Technologies: electronic systems; general computerization and control, and computerization and control for agriculture.

Table 5: Twelfth Grade Pupils, Matriculation Examinees, and Entitled to a Certificate, by Track, Cluster and Specialization – Hebrew Education

Percentages, unless otherwise stated

2003

	Pupils – total, absolute numbers	Examinees, of pupils	Entitled to a certificate		Met university entrance requirements		
			Of pupils	Of examinees	Of pupils	Of examinees	Of entitled to a certificate
Grand total	82,057	81.5	57.4	70.4	48.0	58.9	83.7
Academic track	49,942	88.2	66.3	75.2	57.3	65.0	86.5
Agricultural track	1,040	91.8	51.0	55.5	34.8	37.9	68.3
Technological track – total	26,810	81.3	50.2	61.7	38.8	47.7	77.3
Cluster and specialization							
Engineering, planning and control – total	4,492	71.5	34.0	47.5	22.7	31.7	66.7
Mechanics	2,452	74.7	40.2	53.9	28.7	38.5	71.4
Electricity-electronics ⁽¹⁾	1,841	64.3	24.8	38.6	14.5	22.6	58.4
Maritime studies	199	100.0	41.7	41.7	23.1	23.1	55.4
Science-based technologies – total	7,547	97.8	78.9	80.7	70.8	72.4	89.7
Electronic systems, computerization and control ⁽¹⁾	2,433	97.5	70.5	72.3	56.1	57.6	79.6
Information technologies	3,331	97.0	79.8	82.2	74.6	76.9	93.5
Industrial chemistry	53	98.1	52.8	53.8	43.4	44.2	82.1
Biotechnology	843	100.0	92.6	92.6	89.9	89.9	97.1
Scientific-technological studies	887	99.8	87.4	87.6	80.5	80.7	92.1
Communications, paramedical and education systems – total	2,682	88.7	57.5	64.8	42.4	47.7	73.7
Communications technologies	2,307	89.7	59.6	66.4	46.2	51.4	77.5
Nursing and other paramedical professions	143	99.3	64.3	64.8	31.5	31.7	48.9
Early childhood education	232	72.0	31.9	44.3	11.2	15.6	35.1
Administration and industrial systems – total	7,311	71.9	32.8	45.6	19.1	26.5	58.2
Administration	6,451	69.4	29.2	42.0	15.2	21.9	52.1
Industry and management	500	99.6	72.0	72.3	57.8	58.0	80.3
Tourism	360	78.6	43.1	54.8	34.7	44.2	80.6
Design – total	4,701	75.9	43.0	56.7	32.0	42.2	74.4
Construction and architecture	577	84.2	49.0	58.2	37.8	44.9	77.0
Wood work	91	..	..	..	..	..	..
Arts of design	3,019	84.9	52.6	62.0	41.1	48.4	78.0
Fashion	656	70.4	23.0	32.7	7.3	10.4	31.8
Cosmetology	358	..	..	..	..	..	..

⁽¹⁾ Several specializations of electricity-electronics were included in the cluster Science-Based Technologies: electronic systems; general computerization and control; and computerization and control for agriculture.

Table 6: Twelfth Grade Pupils, Matriculation Examinees, and Entitled to a Certificate, by Track, Cluster and Specialization – Arab Education

Percentages, unless otherwise stated

2003

	Pupils – total, absolute numbers	Examinees, of pupils	Entitled to a certificate		Met university entrance requirements		
			Of pupils	Of examinees	Of pupils	Of examinees	Of entitled to a certificate
Grand total	14,387	88.4	50.7	57.4	31.0	35.0	61.1
Academic track	8,986	95.0	58.1	61.1	35.3	37.2	60.8
Technological track – total	5,242	79.2	39.5	49.9	24.4	30.8	61.7
Cluster and specialization							
Engineering, planning and control – total	1,382	60.6	14.6	24.1	7.4	12.3	51.0
Mechanics	853	59.4	8.9	15.0	2.6	4.3	28.9
Electricity-electronics ⁽¹⁾	529	62.6	23.8	38.1	15.3	24.5	64.3
Science-based technologies – total	1,218	97.9	78.9	80.5	69.7	71.2	88.3
Electronic systems, computerization and control ⁽¹⁾	705	96.4	79.7	82.6	71.8	74.4	90.0
Information technologies	400	100.0	79.5	79.5	68.0	68.0	85.5
Biotechnology	60	100.0	70.0	70.0	60.0	60.0	85.7
Scientific-technological studies	53	100.0	73.6	73.6	66.0	66.0	89.7
Communications, paramedical and education systems – total	814	92.7	51.0	55.0	24.4	26.4	47.9
Communications technologies	177	80.8	37.3	46.2	9.6	11.9	25.8
Nursing and other paramedical professions	214	99.5	79.4	79.8	47.2	47.4	59.4
Early childhood education	423	94.3	42.3	44.9	19.1	20.3	45.3
Administration and industrial systems – total	1,297	79.9	36.8	46.1	9.4	11.8	25.5
Administration	1,224	80.0	37.3	46.7	9.5	11.8	25.4
Industry and management	15	(100.0)	(60.0)	(60.0)	(40.0)	..	..
Tourism	58	72.4	20.7	28.6	–	–	–
Design – total	531	62.5	3.2	5.1	1.1	1.8	..
Construction and architecture	72	97.2	15.3	15.7	8.3	8.6	..
Wood work	49	..	..	..	..	..	..
Arts of design	33	66.7	6.1	9.1	–	–	–
Fashion	318	63.5	1.3	2.0	–	–	–
Cosmetology	59	..	..	..	..	..	..

⁽¹⁾ Several specializations of electricity-electronics were included in the cluster Science-Based Technologies: electronic systems; general computerization and control; and computerization and control for agriculture.

3. Twelfth Grade Pupils, Matriculation Examinees and Entitled to a Certificate

Track and Clusters of Specializations

The increase in the proportion of pupils in the technological track from 30% in 1998 to 35% in 2003 has been accompanied by changes in the proportion of pupils in some clusters. Those changes reflect the directions in which the technological track has been developing. The relative share of pupils in the clusters **Science-Based Technologies**, and **Communications, Paramedical and Education Systems** has increased substantially, especially in the Arab education sector, where new specializations have been added. At the same time, the proportion of pupils in the cluster **Engineering, Planning and Control** has declined.

Table 7: Twelfth Grade Pupils in the Technological Track, by Cluster of Specializations and Cohort

	Total			Hebrew education			Arab education		
	1998	2001	2003	1998	2001	2003	1998	2001	2003
Technological track – total⁽¹⁾	23,087	25,858	32,052	20,809	22,454	26,810	2,278	3,404	5,242
	Absolute numbers								
Technological track – total^{(1) (2)}	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Percentages								
Thereof: Cluster of specializations									
Engineering, planning and control	25.0	21.4	18.3	24.2	20.4	16.7	32.5	27.7	26.4
Science-based technologies	18.2	23.6	27.3	19.1	24.6	28.2	10.0	17.5	23.2
Communications, paramedical and education systems	5.7	8.0	10.9	5.7	7.6	10.0	6.5	11.0	15.5
Administration and industrial systems	30.5	27.1	26.9	30.8	27.6	27.3	27.9	23.6	24.7
Design	17.8	16.8	16.3	17.3	16.8	17.5	21.6	17.0	10.1

⁽¹⁾ To enable comparison with data for 2003, the table does not include 544 pupils in 1998 and 927 pupils in 2001 who were enrolled in the technological track but had an academic specialization. See also Chapter E: "Explanations and Definitions."

⁽²⁾ The total data include 3% of the technological track pupils in 1998 and 2001, and 0.2% of the pupils in 2003 who were not classified to a cluster.

The highest rates in the education system of matriculation examinees, of pupils entitled to a matriculation certificate, and of recipients of a matriculation certificate at a level commensurate with university entrance requirements were found among pupils in the technological track who were enrolled in specializations of the cluster of **Science-Based Technologies**. Seventy-one percent of the **twelfth grade pupils** and 90% of pupils in that cluster who were **entitled to a matriculation certificate** met university entrance requirements. However, in 2003 too pupils in the **academic track** had higher achievements on the matriculation exams (rates of examinees, entitlement, and meeting university entrance requirements) than **the entire** number of pupils in the **technological track**.

In the other clusters in the **technological track**, high entitlement rates were found among pupils in the cluster **Communications, Paramedical and Education Systems**, whereas the low entitlement rates were found among pupils in the clusters **Engineering, Planning and Control**, as well as **Design**.

Table 8: Twelfth Grade Pupils, Matriculation Examinees and Entitled to a Certificate, by Sector, Track and Cluster of Specializations

Percentages, unless otherwise stated

2003

	Pupils – total, absolute numbers	Examinees, of pupils	Entitled to a certificate		Met university entrance requirements		
			Of pupils	Of examinees	Of pupils	Of examinees	Of entitled to a certificate
Hebrew education							
Grand total	82,057	81.5	57.4	70.4	48.0	58.9	83.7
Academic track	49,942	88.2	66.3	75.2	57.3	65.0	86.5
Agricultural track	1,040	91.8	51.0	55.5	34.8	37.9	68.3
Technological track – total	26,810	81.3	50.2	61.7	38.8	47.7	77.3
Cluster of specializations							
Engineering, planning and control	4,492	71.5	34.0	47.5	22.7	31.7	66.7
Science-based technologies	7,547	97.8	78.9	80.7	70.8	72.4	89.7
Communications, paramedical, and education systems	2,682	88.7	57.5	64.8	42.4	47.7	73.7
Administration and industrial systems	7,311	71.9	32.8	45.6	19.1	26.5	58.2
Design	4,701	75.9	43.0	56.7	32.0	42.2	74.4
Arab education							
Grand total	14,387	88.4	50.7	57.4	31.0	35.0	61.1
Academic track	8,986	95.0	58.1	61.1	35.3	37.2	60.8
Technological track – total	5,242	79.2	39.5	49.9	24.4	30.8	61.7
Cluster of specializations							
Engineering, planning and control	1,382	60.6	14.6	24.1	7.4	12.3	51.0
Science-based technologies	1,218	97.9	78.9	80.5	69.7	71.2	88.3
Communications, paramedical, and education systems	814	92.7	51.0	55.0	24.4	26.4	47.9
Administration and industrial systems	1,297	79.9	36.8	46.1	9.4	11.8	25.5
Design	531	62.5	3.2	5.1	1.1	1.8	..

As mentioned, entitlement rates were highest among pupils in the following population groups:

In the Hebrew and Arab education sectors: girls; and pupils whose parents have medium to high levels of education.

In the Hebrew education sector:

Pupils in schools under general supervision and under the supervision of the ARE (Administration of Religious Education);

Israeli-born pupils whose father was born in Israel;

Pupils of European/American origin;

In the Arab education sector: Christian pupils.

It was also found that the higher the parents' level of education (in terms of years of schooling), the greater the pupil's chances of attaining a matriculation certificate.

The proportion of pupils from the above groups (excluding those in schools under general supervision) was also substantially higher in the **academic track** than their relative proportion in the total twelfth grade pupils.

The population of pupils in the **technological track** is heterogeneous, and the composition of population groups in each cluster varies. For example, in the cluster **Science-Based Technologies**, where pupils had the greatest chances of attaining a matriculation certificate, the representation of the following population groups was especially high: boys; and pupils whose fathers had at least 13 years of schooling; in the Hebrew education sector – pupils of European/American origin (some of whom are immigrants from the former USSR, see Table 17); in the Arab education sector – Christians.

Table 9: Twelfth Grade Pupils, by Track, Cluster of Specializations, and Selected Characteristics – Hebrew Education

2003

	Total	Sex		Origin			Father's years of schooling			
		Boys	Girls	Israel	Asia/ Africa	Europe/ America	1–8	9–12	13–15	16 and over
	Absolute numbers									
Grand total	82,057	40,217	41,840	40,405	17,713	22,131	4,893	35,921	13,263	16,147
	Percentages									
Grand total	100.0	49.0	51.0	50.3	22.1	27.6	7.0	51.1	18.9	23.0
Academic track	100.0	43.5	56.5	53.1	20.6	26.3	5.4	48.1	20.1	26.4
Agricultural track	100.0	47.8	52.2	33.9	31.8	34.3	14.5	54.6	17.7	13.2
Technological track – total	100.0	56.8	43.2	44.3	25.5	30.2	10.2	59.6	16.2	14.0
Cluster of specializations										
Engineering, planning and control	100.0	92.7	7.3	38.7	30.3	31.0	12.6	63.2	13.9	10.3
Science-based technologies	100.0	75.3	24.7	43.0	19.8	37.2	7.0	47.8	22.3	22.8
Communications, paramedical, and education systems	100.0	37.7	62.3	47.9	24.5	27.6	8.5	62.5	16.1	12.9
Administration and industrial systems	100.0	37.6	62.4	45.9	29.0	25.1	13.3	69.1	10.6	7.0
Design	100.0	33.7	66.3	47.1	25.3	27.6	9.6	60.0	16.9	13.5

Table 10: Twelfth Grade Pupils, by Track, Cluster of Specializations, and Selected Characteristics – Arab Education

2003

	Total	Sex		Religion			Father's years of schooling					
		Boys	Girls	Moslems	Christians	Druze	1–8	9–12	13–15	16 and over		
Grand total	14,387	6,613	7,774	11,067	1,541	1,741	5,099	5,634	1,062	825		
				Absolute numbers								
Grand total	100.0	46.0	54.0	77.2	10.7	12.1	40.4	44.6	8.4	6.5		
				Percentages								
Academic track	100.0	42.3	57.7	76.4	9.7	13.9	39.5	44.0	9.3	7.2		
Technological track – total	100.0	51.4	48.6	78.5	12.3	9.2	41.9	45.6	7.0	5.5		
Cluster of specializations												
Engineering, planning and control	100.0	92.2	7.8	79.8	9.4	10.8	40.3	54.6	3.6	1.5		
Science-based technologies	100.0	54.1	45.9	65.8	24.0	10.4	21.0	44.6	17.3	17.1		
Communications, paramedical, and education systems	100.0	19.2	80.8	90.4	9.5	0.1	52.6	42.0	4.1	1.3		
Administration and industrial systems	100.0	37.3	62.7	80.2	7.1	12.7	50.2	43.3	4.1	2.4		
Design	100.0	23.0	77.0	82.1	10.6	7.3	62.1	34.1	2.4	1.4		

Sector

Comparison of the Hebrew and Arab education sectors reveals higher examinee rates and lower entitlement rates in the Arab education sector.

Disparities in the rates of entitled twelfth grade pupils declined from 52% in the Hebrew education sector and 42% in the Arab education sector in 2000, to 57% and 51% in the Hebrew and Arab education sectors, respectively, in 2003. However, the

disparity in the rate of entitled pupils who met university entrance requirements remained stable.

This trend did not include pupils in the cluster Science-Based Technologies in the Arab education sector, whose achievements were comparable to those of their counterparts in the Hebrew education sector with respect to each of the characteristics of the matriculation exams, including the proportion of pupils who met university entrance requirements (see Table 8).

Gender

In both the Hebrew and Arab education sectors, the examinee and entitlement rates were higher for girls than for boys. This is related to the fact that more girls than boys tend to study in the **academic track**, in which there is a greater chance of taking the matriculation exams and of entitlement to a matriculation certificate.

In the technological track, the proportion of boys in the clusters Engineering, Planning and Control and Science-Based Technologies was high, whereas the proportion of girls was high in the clusters: Communications, Paramedical and Education Systems; Administration and Industrial Systems; and Design (see Tables 9–10).

However, rate of examinees and rate of entitled to a certificate were higher for girls than for boys in the academic and agricultural tracks as well as in most clusters of the technological track – regardless of the number of the relative proportion of girls in each cluster.

**Table 11: Matriculation Examinees and Entitled to a Certificate,
by Track, Cluster of Specializations, Sex and Sector**

2003

	Examinees			Entitled to a certificate		
	Total	Boys	Girls	Total	Boys	Girls
Hebrew education						
	Absolute numbers			Absolute numbers		
Grand total	66,855	31,337	35,518	47,082	20,584	26,498
	Percentage of pupils in each cell			Percentage of examinees in each cell		
Grand total	81.5	77.9	84.9	70.4	65.7	74.6
Academic track	88.2	85.8	90.0	75.2	69.8	79.1
Agricultural track	91.8	88.9	94.5	55.5	50.7	59.6
Technological track – total	81.3	80.3	82.6	61.7	60.1	63.6
Cluster of specializations						
Engineering, planning and control	71.5	69.8	93.3	47.5 ⁽¹⁾	45.1	70.4
Science-based technologies	97.8	98.1	97.2	80.7	79.1	85.6
Communications, paramedical and education systems	88.7	82.8	92.3	64.8	58.5	68.2
Administration and industrial systems	71.9	70.6	72.7	45.6	38.3	49.8
Design	75.9	61.5	83.2	56.7	41.5	62.4
Arab Education						
	Absolute numbers			Absolute numbers		
Grand total	12,719	5,491	7,228	7,296	2,762	4,534
	Percentage of pupils in each cell			Percentage of examinees in each cell		
Grand total	88.4	83.0	93.0	57.4	50.3	62.7
Academic track	95.0	92.5	96.9	61.1	54.4	65.9
Technological track – total	79.2	72.5	86.4	49.9	43.4	55.7
Cluster of specializations						
Engineering, planning and control	60.6	58.6	85.2	24.1 ⁽¹⁾	17.8	75.0
Science-based technologies	97.9	96.2	100.0	80.5	77.1	84.4
Communications, paramedical and education systems	92.7	84.0	94.8	55.0	45.8	56.9
Administration and industrial systems	79.9	77.5	81.3	46.1	43.5	47.7
Design	62.5	54.9	64.8	5.1	4.5	5.3

⁽¹⁾ The total percentage of entitled pupils in the cluster engineering, planning and control is only slightly affected by the high rates of success among girls, because they comprised only 7% of all pupils in the cluster in the Hebrew education sector, and 8% in the Arab education sector (see Tables 9–10).

Supervision – Hebrew Education Sector

The supervision systems (general, ARE – Administration of Religious Education, and ultra-orthodox supervision) are defined by the extent of their orientation toward religious education. The supervision systems can be distinguished by their curricular content and by their values, as reflected also in their emphasis on matriculation exams.

Pupils in schools under ARE supervision had similar examinee and entitlement rates. The examinee rates totaled 90% and 92% of the pupils in the general and ARE systems, respectively, and entitlement rates were 64% and 67% of the examinees in the general and ARE systems, respectively. By contrast, only 18% of the twelfth grade pupils in the ultra-orthodox schools took matriculation exams, and only 46% of those examinees were entitled to a matriculation certificate.

Between 1998 and 2002, about a third of all pupils in schools under **general supervision** were enrolled in the technological track, compared with nearly a quarter of the pupils in schools under **ARE** supervision. In 2003, the gap narrowed and the proportions were 38% versus 29%, respectively.

Table 12: Twelfth Grade Pupils and Entitled to a Certificate, by Supervision, Track and Cohort – Hebrew Education

Cohort	Pupils					Entitled to a certificate			
	Total	Total	Track			Total	Track		
			Aca- demic	Techno- logical	Agri- cultural		Aca- demic	Techno- logical	Agri- cultural
	Absolute numbers	Percentages				Percentage of pupils in each cell			
1998 – Total	71,411	100.0	67.1	31.3	1.6	51.4	63.0	35.1	41.5
Thereof: supervision									
General	51,520	100.0	63.2	35.1	1.7	56.5	69.3	36.3	40.0
ARE ⁽¹⁾	12,548	100.0	74.0	24.1	1.9	56.7	66.7	31.8	46.6
2000 – Total	76,149	100.0	66.6	32.2	1.2	52.1	64.0	40.3	42.9
Thereof: supervision									
General	54,303	100.0	63.2	35.6	1.3	57.4	67.9	41.1	44.1
ARE ⁽¹⁾	12,985	100.0	74.2	24.7	1.1	61.2	70.4	39.7	37.0
2001 – Total	78,534	100.0	67.2	31.9	0.9	55.6	67.9	44.6	44.7
Thereof: supervision									
General	55,619	100.0	63.9	35.1	1.0	61.8	71.8	45.7	44.9
ARE ⁽¹⁾	13,207	100.0	75.1	24.1	0.8	66.1	74.5	44.8	43.1
2002 – Total	82,805	100.0	64.4	34.3	1.3	56.3	67.3	47.8	46.1
Thereof: supervision									
General	58,141	100.0	62.0	36.6	1.4	63.2	73.1	48.7	49.2
ARE ⁽¹⁾	13,836	100.0	73.7	25.4	0.9	66.3	73.9	48.9	29.0
2003 – Total	82,057	100.0	64.2	34.5	1.3	57.4	66.3	50.2	51.0
Thereof: supervision									
General	58,353	100.0	60.7	37.8	1.5	63.6	72.7	50.2	52.0
ARE ⁽¹⁾	13,670	100.0	69.9	28.8	1.3	67.2	73.3	55.9	45.9

⁽¹⁾ Administration of Religious Education.

In addition, the findings revealed that in 2003 the **percentage of entitled examinees** in the technological track was higher in schools under the ARE (Administration of Religious Education) supervision than in schools under general supervision. Probably this was due to the higher proportion in the ARE supervision – a third (compared with a quarter in the general supervision) of pupils in the cluster Science-Based Technologies, where the chances of taking matriculation exams and receiving a matriculation certificate are even higher than in the academic track.

Table 13: Pupils in the Technological Track, by Supervision and Cluster of Specializations

2003							
	Technological track – total	Technological track – total	Engineering, planning and control	Science-based technologies	Communications, paramedical and education systems	Administration and industrial systems	Design
	Absolute numbers	Percentages					
Pupils – total	26,810	100.0	16.8	28.2	10.0	27.4	17.6
Thereof:							
General Supervision	21,907	100.0	16.3	27.4	10.6	29.1	16.6
ARE ⁽¹⁾ Supervision	3,889	100.0	23.6	34.4	9.0	16.0	17.0

⁽¹⁾ Administration of Religious Education.

Table 14: Matriculation Examinees and Entitled to a Certificate, by Supervision, Track and Cluster of Specializations

2003						
	Examinees			Entitled to a certificate		
	Total	Thereof, in supervision:		Total	Thereof, in supervision:	
		General	ARE ⁽¹⁾		General	ARE ⁽¹⁾
	Absolute numbers			Absolute numbers		
Grand total	66,855	52,539	12,550	47,082	37,091	9,186
	Percentage of pupils in each cell			Percentage of examinees in each cell		
Grand total	81.5	90.0	91.8	70.4	70.6	73.2
Academic track	88.2	96.3	96.0	75.2	75.5	76.4
Agricultural track	91.8	90.2	99.4	55.5	57.7	46.1
Technological track – total	81.3	81.5	84.8	61.7	61.9	65.9
Cluster of specializations						
Engineering, planning and control	71.5	72.4	69.6	47.5	50.1	37.1
Science-based technologies	97.8	98.6	98.2	80.7	82.3	79.2
Communications, paramedical, and education systems	88.7	87.6	96.0	64.8	63.4	73.0
Administration and industrial systems	71.9	71.1	82.7	45.6	45.4	46.8
Design	75.9	77.9	75.1	56.7	55.5	82.5

⁽¹⁾ Administration of Religious Education.

Origin – Hebrew Education Sector

Pupils of Israeli origin (Israeli-born whose fathers are also Israeli-born) showed a greater tendency to enroll in the academic track than in the agricultural or technological track. By contrast, pupils of Asian/African and European/American origin were over-represented in the agricultural and technological tracks, although they were concentrated in different clusters.

The proportion of pupils of **Asian/African** origin was relatively high in the clusters Engineering, Planning and Control as well as in Administration and Industrial Systems, whereas the proportion of pupils of **European/American** origin was high in Science-Based Technologies (see Table 9).

In the **academic track**, the chances of taking the matriculation exams were similar for pupils of **Asian/African** origin and pupils of Israeli and European/American origin. However, pupils of **Asian/African** origin had a lower probability of entitlement to a matriculation certificate than did their counterparts in the other two groups.

In the **technological track**, all of the pupils in the cluster Science-Based Technologies had similar chances of taking matriculation exams, regardless of origin. However, pupils of **Asian/African** origin had slightly lower chances of receiving a matriculation certificate. Regarding the other clusters, the findings revealed that both chances of taking matriculation exams and of receiving a matriculation certificate were lower among pupils of Asian/African origin than among pupils in the other two groups.

Table 15: Matriculation Examinees and Entitled to a Certificate, by Track, Cluster of Specializations, Origin and Country of Birth – Hebrew Education

2003

	Total	Origin and country of birth				
		Israel	Asian/African		European/American	
			Total	Thereof: Ethiopian born	Total	Thereof: Born in the former USSR
Examinees						
Absolute numbers						
Grand total	66,855	32,799	14,846	1,209	18,764	9,884
Percentage of pupils in each cell						
Grand total	81.5	81.2	83.8	82.1	84.8	89.8
Academic track	88.2	87.6	92.1	92.7	89.5	94.8
Agricultural track	91.8	92.1	89.8	88.8	93.4	95.0
Technological track – total	81.3	81.7	76.9	71.6	85.4	85.6
Cluster of specializations						
Engineering, planning and control	71.5	70.0	66.3	73.5	78.2	80.4
Science-based technologies	97.8	97.8	97.8	100.0	98.7	98.5
Communications, paramedical, and education systems	88.7	90.2	84.4	82.8	90.7	88.9
Administration and industrial systems	71.9	72.8	69.0	63.5	73.6	73.4
Design	75.9	77.1	73.3	50.0	79.1	78.2
Entitled to a certificate						
Absolute numbers						
Grand total	47,082	23,511	9,620	622	13,686	6,871
Percentage of examinees in each cell						
Grand total	70.4	71.7	64.8	51.4	72.9	69.5
Academic track	75.2	76.0	70.9	59.4	77.1	74.0
Agricultural track	55.5	61.2	43.8	42.0	60.3	57.2
Technological track – total	61.7	61.9	55.2	44.2	66.6	65.1
Cluster of specializations						
Engineering, planning and control	47.5	49.9	40.8	32.0	51.4	51.9
Science-based technologies	80.7	81.0	76.9	75.9	82.5	80.5
Communications, paramedical, and education systems	64.8	66.2	62.2	58.3	64.7	62.3
Administration and industrial systems	45.6	43.9	42.8	43.4	51.4	52.5
Design	56.7	57.6	50.3	32.3	60.8	55.4

Immigrants – Hebrew Education

The number of twelfth grade pupils born abroad in 2003 was 15,200: 11,000 immigrated to Israel from the former USSR, about 1,500 arrived from Ethiopia, and about 2,700 – from other countries.

The Israeli-born pupils showed a greater tendency to enroll in the academic track (two thirds of them were enrolled in the academic track, compared with a third in the technological track, and one percent in the agricultural track).

By comparison, pupils born abroad showed a greater tendency to enroll in the technological and agricultural tracks. Of the immigrants from the former USSR, 50% were enrolled in the academic track, 47% in the technological track, and 3% in the agricultural track. Of the Ethiopian immigrants, 44.5% were enrolled in the academic track, the same rate in the technological track, and 11% – in the agricultural track.

**Table 16: Twelfth Grade Pupils, by Country of Birth and Track
Hebrew Education**

2003					
	Total	Total	Track		
			Academic	Techno-logical	Agricultural
	Absolute numbers	Percentages			
Total	82,057	100.0	64.2	34.5	1.3
Thereof: Country of birth					
Israel	65,478	100.0	66.7	32.4	0.9
Former USSR	11,011	100.0	49.9	47.5	2.6
Ethiopia	1,473	100.0	44.5	44.5	11.0

Immigrants from the former USSR in the technological track preferred to study in the following clusters: Science-Based Technologies (a quarter of all pupils in the cluster were born in the former USSR), Administration and Industrial Systems, and Engineering, Planning and Control. About three quarters of all Ethiopian-born pupils in the technological track were also concentrated in the latter two clusters (See Table 17).

Table 17: Twelfth Grade Pupils in the Technological Track, by Cluster of Specializations and Country of Birth

2003

	Techno- logical track – Total	Cluster of specializations				
		Engineering, planning and control	Science-based technologies	Communi- cations, paramed- ical and education systems	Adminis- tration and industrial systems	Design
		Absolute numbers				
Total	26,810	4,492	7,547	2,682	7,311	4,701
Israeli-born	20,152	3,067	5,343	2,189	5,770	3,716
Former USSR	5,190	1,042	1,873	379	1,179	711
Ethiopia	648	268	79	29	203	68
Other countries	708	108	212	79	144	162
		Percentages				
Total	100.0	16.8	28.3	10.0	27.3	17.6
Israeli-born	100.0	15.3	26.6	10.9	28.7	18.5
Former USSR	100.0	20.1	36.1	7.3	22.8	13.7
Ethiopia	100.0	41.5	12.2	4.5	31.3	10.5
Other countries	100.0	15.4	30.0	11.2	20.4	23.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Israeli-born	75.6	68.4	71.2	81.8	79.0	79.7
Former USSR	19.4	23.2	24.9	14.2	16.2	15.3
Ethiopia	2.4	6.0	1.1	1.1	2.8	1.5
Other countries	2.6	2.4	2.8	2.9	2.0	3.5

In the academic and agricultural tracks, as well as in the cluster Engineering, Planning and Control of the technological track, the **rates of examinees** among pupils born in the **former USSR** were even higher than the rates among pupils of European/American origin as a whole. Although **rates of entitlement** among pupils born in the former USSR (within all examinees) were greater than or equal to the national average in the Hebrew education sector, in most cases they were lower than the entitlement rates for all pupils of European/American origin.

Regarding **Ethiopian immigrants**, the **examinee rates** among them were higher than the national average in the Hebrew education sector in the academic track, as well as in the clusters Engineering, Planning and Control, and Science-Based Technologies in the technological track. However, in most cases the **entitlement rates** among these pupils were lower than the overall entitlement rates among pupils of Asian/African origin as well as among pupils from other ethnic groups.

The smallest gap in entitlement rates among Ethiopian immigrant pupils compared with pupils from other population groups was found in the cluster **Science-Based Technologies**: 76%, compared with 81% on the average in the Hebrew education system (see Table 15).

Religion – Arab Education

Christian pupils showed a greater tendency to enroll in the technological track than did their Moslem and Druze counterparts – particularly in the cluster Science-Based Technologies. In 2003, a quarter of the pupils in that cluster were Christian, although the proportion of Christians among all twelfth grade pupils was only 11% (see Table 10).

Examination of the different characteristics of pupils in relation to matriculation exams (examinees, those entitled to a matriculation certificate, and those who met university entrance requirements) indicates that in the academic track as well as in the technological track, the achievements of Christian pupils were higher than those of their Moslem and Druze peers.

In the **academic track**, 70% of the Christian examinees versus 61% of the Moslem examinees and 55% of the Druze examinees were entitled to a matriculation certificate in 2003.

In the **technological track**, the discrepancy was greater: the proportion of entitled examinees among the Christian pupils was two thirds, compared with 48% among the Moslem examinees and 43% among the Druze examinees.

In the cluster Science-Based Technologies all the Christian and the Druze pupils (100%) as well as almost all the Moslems pupils took matriculation exams. The highest entitlement rates among examinees in this cluster were found within Christians: 88% compared with 79% and 73%, respectively, among the Moslems and the Druze.

**Table 18: Matriculation Examinees and Entitled to a Certificate,
by Track, Cluster of Specializations and Religion – Arab Education**

2003

	Examinees				Entitled to a certificate			
	Total	Religion			Total	Religion		
		Moslems	Christians	Druze		Moslems	Christians	Druze
	Absolute numbers				Absolute numbers			
Grand total	12,719	9,617	1,446	1,641	7,296	5,450	985	850
	Percentage of pupils in each cell				Percentage of examinees in each cell			
Grand total	88.4	86.9	93.8	94.3	57.4	56.7	68.1	51.8
Academic track	95.0	94.4	97.8	97.8	61.1	61.1	69.9	54.8
Technological track – total	79.2	76.5	91.8	86.3	49.9	47.8	65.9	43.1
Cluster of specializations								
Engineering, planning and control	60.6	58.3	77.5	63.8	24.1	22.2	50.0	9.5
Science-based technologies	97.9	96.9	100.0	100.0	80.5	79.1	87.7	73.2
Communications, paramedical, and education systems	92.7	93.1	89.6	..	55.0	56.1	44.9	-
Administration and industrial systems	79.9	75.3	98.9	98.2	46.1	44.8	56.0	46.9
Design	62.5	59.9	73.2	76.9	5.1	5.0	7.3	3.3

Father's Level of Education

Statistical analyses performed to calculate the correlation between father's level of education and access to a matriculation certificate in the Hebrew education sector included only pupils in schools under general and ARE (Administration of Religious Education) supervision,¹ because the father's years of schooling in the ultra-orthodox sector may include yeshiva studies.

The higher the father's level of education, the higher the proportion of pupils who tended to enroll in the **academic track** (see Tables 4–5, following the introduction).

In the technological track, the findings revealed a correlation between father's education and choice of specialization: pupils whose fathers had at least 13 years of schooling showed a greater tendency to specialize in fields of the cluster Science-Based Technologies, where chances of entitlement to a matriculation certificate are high, whereas pupils whose fathers had low or medium levels of education tended to choose specializations of other clusters (Tables 9–10).

In both the Hebrew and Arab education sectors, it was found that the higher the father's level of education, the greater the probability of taking matriculation exams and receiving a matriculation certificate. The impact of father's education is higher for the **technological track** pupils than for others: the higher the father's level of education, the narrower the gap between the technological and academic tracks in terms of access to matriculation exams.

The narrowest gap between the pupils whose fathers had a low level of education and those whose fathers had at least 13 years of schooling was found in the cluster Science-Based Technologies.

¹ The data on the Hebrew education sector in Table 19 relate only to pupils in schools under general and ARE supervision. However, the data presented in Table 4 among the tables following the introduction relate to all pupils in the Hebrew education sector, including ultra-orthodox supervision.

**Table 19: Matriculation Examinees and Entitled to a Certificate, by Track,
Sector, and Father's Years of Schooling**

2003

	Examinees					Entitled to a certificate				
	Total	Father's years of schooling				Total	Father's years of schooling			
		1-8	9-12	13-15	16 and over		1-8	9-12	13-15	16 and over
Hebrew education										
	Absolute numbers					Absolute numbers				
Grand total⁽¹⁾	65,089	3,853	29,794	11,055	12,514	46,277	2,233	19,711	8,764	10,726
	Percentage of pupils in each cell					Percentage of examinees in each cell				
Grand total⁽¹⁾	90.4	82.9	89.2	95.2	97.2	71.1	57.9	66.2	79.3	85.7
Academic track	96.3	94.2	96.3	97.8	98.5	75.7	66.1	71.3	81.2	87.4
Agricultural track	91.8	92.9	89.4	92.7	97.1	55.5	54.3	51.4	68.7	69.0
Technological track – total	82.0	72.6	79.5	91.4	96.0	62.6	47.6	57.5	75.3	81.0
Cluster of specializations										
Engineering, planning and control	71.8	67.4	64.6	84.2	91.5	47.5	30.5	44.9	60.1	74.3
Science-based technologies	98.5	99.3	98.2	98.8	99.7	81.7	76.6	77.1	85.9	89.0
Communications, paramedical, and education systems	88.7	78.6	88.1	92.7	96.3	64.8	52.6	61.5	76.2	78.0
Administration and industrial systems	72.1	63.9	71.2	82.1	88.8	45.6	35.7	43.4	60.9	63.9
Design	77.5	63.4	78.6	88.4	94.6	59.5	38.8	54.7	71.6	75.3
Arab Education										
	Absolute numbers					Absolute numbers				
Grand total	12,719	4,384	5,084	1,041	814	7,296	2,245	2,922	752	658
	Percentage of pupils in each cell					Percentage of examinees in each cell				
Grand total	88.4	86.0	90.2	98.0	98.7	50.7	51.2	57.5	72.2	80.8
Academic track	95.0	95.2	97.1	98.9	98.6	58.1	55.9	63.2	70.6	80.9
Technological track – total	79.2	72.6	80.8	96.4	98.8	39.5	41.8	46.6	76.4	80.8
Cluster of specializations										
Engineering, planning and control	60.6	57.3	59.5	91.5	89.5	14.6	22.1	20.0	60.5	(52.9)
Science-based technologies	97.9	94.2	99.0	100.0	100.0	78.9	79.8	75.4	85.4	88.3
Communications, paramedical, and education systems	92.7	88.2	97.3	88.0	..	51.0	50.5	54.2	81.8	..
Administration and industrial systems	79.9	77.7	87.1	93.6	100.0	36.8	45.2	45.5	61.4	59.3
Design	62.5	56.3	71.1	..	..	3.2	3.4	7.3	..	..

(1) Including only pupils under the general and the ARE (Administration of Religious Education) supervision.

4. Entitled to a Certificate who Met University Entrance Requirements

The rate of entitled pupils who met university entrance requirements is an additional measure for evaluating the output of the education system. University entrance requirements include 3 units of mathematics, 4 units of English, and one subject at an enhanced level (at least 4 units) in addition to English. Of the entitled pupils, 44,000 (81%) met university entrance requirements, and were potential candidates for higher education in universities. Of the examinees, 55% met university entrance requirements, compared with 68% (of the examinees) who were entitled to a matriculation certificate.

As mentioned, the possibility of make-up exams in English and mathematics diminished the discrepancy between pupils from different population groups with regard to the chances of taking the matriculation exams and entitlement to a matriculation certificate. Now, the discrepancies between the groups are mainly in terms of access to higher education. Among pupils from population groups with lower chances of passing the matriculation exams the gap in entitlement rate decreased for the most part, but not the disparity in meeting university entrance requirements. These groups included pupils whose fathers had low and middle levels of education; all of the pupils in the **Arab education sector**, mainly Druze pupils in this sector; pupils of Asian/African origin in the **Hebrew education sector**.

Pupils in schools under ultra-orthodox supervision in the Hebrew education sector, Moslem pupils in the Arab education sector and pupils in the technological track in both the Hebrew and Arab education sectors were an exception to this trend: the percentage of examinees and entitled pupils increased in those groups, and the level of the matriculation certificate rose at the same time.

By comparison, pupils from established socio-economic groups who also had good chances of passing the matriculation exams in the past (e.g., pupils whose fathers had completed at least 13 years of schooling) had higher chances of entitlement while the percentage of pupils who met university entrance requirements did not decrease among them.

Regarding the **technological track**, the findings revealed that in the **Hebrew education sector** the rate of pupils who met university entrance requirements increased in all of the clusters, except Administration and Industrial Systems. The largest increase was found among specializations in the cluster of Design, where the rate of entitled examinees who met university entrance requirements rose from 67% to 74%.

In the **Arab education sector**, the rate of entitlement to a matriculation certificate rose among pupils enrolled in the clusters: Engineering, Planning and Control; Administration and Industrial Systems; and Communications, Paramedical, and Education Systems. However, the proportion of examinees who met university requirements rose concomitantly only among pupils in the last cluster. Regarding the cluster Science-Based Technologies, it was found that the rate of entitlement to a matriculation certificate declined slightly between 2000 and 2003, although the rate of entitled examinees who met university entrance requirements rose from 85% to 88%.

Table 20: Twelfth Grade Pupils, Matriculation Examinees, and Entitled to a Certificate who Met University Entrance Requirements in 2000 and 2003, by Various Characteristics – Hebrew Education

	2000				2003			
	Examinees, as percentage of pupils	Entitled to a certificate, as percentage of pupils	Entitled to a certificate, as percentage of examinees	Those who met university entrance requirements, as percentage of entitled to a certificate	Examinees, as percentage of pupils	Entitled to a certificate, as percentage of pupils	Entitled to a certificate, as percentage of examinees	Those who met university entrance requirements, as percentage of entitled to a certificate
Grand total	79.4	52.1	65.6	84.7	81.5	57.4	70.4	83.7
Thereof:								
Academic track	91.0	64.0	70.4	87.9	88.2	66.3	75.2	86.5
Technological track – total	73.3	40.3	55.0	74.9	81.3	50.2	61.7	77.3
Cluster of specializations								
Engineering, planning and control	57.3	25.9	45.2	61.7	71.5	34.0	47.5	66.7
Science-based technologies	98.0	73.3	74.8	85.9	97.8	78.9	80.7	89.7
Communications, paramedical, and education	80.2	45.9	57.2	72.6	88.7	57.5	64.8	73.7
Administration and industrial systems	66.6	27.3	41.0	60.1	71.9	32.8	45.6	58.2
Design	63.3	27.7	43.7	67.2	75.9	43.0	56.7	74.4
Supervision								
General	87.7	57.4	65.5	87.2	90.0	63.6	70.6	86.1
ARE ⁽¹⁾	88.7	61.3	69.0	77.8	91.8	67.2	73.2	77.6
Ultra-orthodox	14.9	6.0	40.0	38.1	17.6	8.0	45.6	41.6
Origin								
Israel	80.2	53.7	67.0	86.7	81.2	58.2	71.7	85.1
Asia/Africa	79.1	46.8	59.2	75.8	83.8	54.3	64.8	74.6
Europe/America	83.4	58.3	69.9	88.6	84.8	61.8	72.9	87.7
Father's years of schooling								
1–8	74.6	39.3	52.6	72.9	80.3	45.9	57.1	72.0
9–12	81.7	48.9	59.8	81.2	84.8	55.6	65.6	78.5
13–15	83.5	62.0	74.3	89.0	84.8	66.9	78.8	90.1
16 and over	75.1	61.1	81.4	93.1	79.7	67.7	85.0	93.3

⁽¹⁾ Administration of Religious Education.

Table 21: Twelfth Grade Pupils, Matriculation Examinees, and Entitled to a Certificate who Met University Entrance Requirements in 2000 and 2003, by Various Characteristics – Arab Education

	2000				2003			
	Examinees, as percentage of pupils	Entitled to a certificate, as percentage of pupils	Entitled to a certificate, as percentage of examinees	Those who met university entrance requirements, as percentage of entitled to a certificate	Examinees, as percentage of pupils	Entitled to a certificate, as percentage of pupils	Entitled to a certificate, as percentage of examinees	Those who met university entrance requirements, as percentage of entitled to a certificate
Grand total	88.8	41.8	47.0	60.7	88.4	50.7	57.4	61.1
Thereof:								
Academic track	94.2	48.4	51.4	61.7	95.0	58.1	61.1	60.9
Technological track – total	78.3	27.6	35.2	57.4	79.2	39.5	49.9	61.7
Cluster of specializations								
Engineering, planning and control	69.0	14.4	20.8	56.0	60.6	14.6	24.1	51.0
Science-based technologies	97.9	80.8	82.5	84.8	97.9	78.9	80.5	88.3
Communications, paramedical, and education systems	90.0	31.8	35.4	44.2	92.7	51.0	55.0	47.9
Administration and industrial systems	90.3	31.1	34.4	35.5	79.9	36.8	46.2	25.5
Design	53.0	3.6	6.8	(12.5)	62.5	3.2	5.1	..
Religion								
Moslems	86.5	39.2	45.4	56.3	86.9	49.2	56.7	58.5
Christians	96.1	63.5	66.1	81.5	93.8	63.9	68.1	80.9
Druze	97.2	38.7	40.0	58.3	94.3	48.8	51.8	54.5
Father's years of schooling								
1–8	85.9	33.2	38.6	52.4	86.0	44.0	51.2	50.3
9–12	93.2	47.0	50.4	61.9	90.2	51.9	57.5	60.9
13–15	97.4	67.9	69.7	75.8	98.0	70.8	72.2	78.3
16 and over	97.7	78.8	80.6	84.9	98.7	79.8	80.8	86.0

5. Examinees in English and Scientific Subjects at an Enhanced Level

The proportion of pupils who took matriculation exams in English and scientific subjects at an enhanced level is another means for evaluating the level of matriculation certificates. Matriculation exams are offered according to the number of units of study in each subject – from the basic level, which includes 1 to 3 units, to the enhanced level, which includes 4 units or more. A subject at an enhanced level is taught comprehensively, preparing pupils for continuing studies in that field.

Of all examinees, 69% (73% in the Hebrew education sector and 49% in the Arab education sector) took the matriculation exams in English at an enhanced level.

Of all matriculation examinees, 46% (45% in the Hebrew education sector and 48% in the Arab education sector) took the exams in at least one scientific subject at an enhanced level. Scientific subjects include mathematics, physics, chemistry, biology, and computer studies.

Of all matriculation examinees in the Hebrew and Arab education sectors, 20% took the exams in one scientific subject (usually mathematics) at an enhanced level, 17% took the exams in two such subjects, and 9% took the exams in 3 such subjects or more.

In both the Hebrew and Arab education sectors, the percentages of examinees in English and scientific subjects at an enhanced level were higher among pupils in the academic track than among all pupils in the technological track.

However, analysis of the findings for the technological track by cluster reveals that the pupils in **Science-Based Technologies** surpassed their counterparts in the academic track with regard to the rates of examinees who took exams in English, mathematics, physics, and computer sciences at an enhanced level, as well as in terms of the number of scientific subjects at an enhanced level in which each examinee tested. By contrast, pupils in the **academic track** surpassed their counterparts in Science-Based Technologies with regard to the rates of examinees who tested in chemistry and biology at an enhanced level.

Table 22: Matriculation Examinees in English and Scientific Subjects at an Enhanced Level, by Track and Cluster of Specializations – Hebrew Education

2003

	Grand Total	Thereof:						
		Academic track	Technological track – total	Cluster of specializations				
				Engineering, planning and control	Science-based technologies	Communications, paramedical and education systems	Administration and industrial systems	Design
Absolute numbers								
Examinees – total	66,855	44,044	21,806	3,212	7,385	2,379	5,259	3,567
Percentage of examinees in each cell								
Examined in English at an enhanced level	73.2	79.5	61.4	46.0	84.6	63.8	40.8	56.0
Scientific subjects								
Examined in at least one subject at an enhanced level	45.0	49.2	36.9	21.7	75.1	19.8	11.4	20.2
Number of subjects:								
1	19.9	21.5	16.4	9.9	25.1	16.7	8.9	14.7
2	16.5	18.5	12.8	9.1	29.0	2.6	2.0	5.2
3 or more	8.6	9.2	7.7	2.7	21.0	0.5	0.5	0.3
Mathematics	39.0	42.4	32.6	19.9	65.2	17.9	10.5	18.9
Physics	9.6	9.1	11.1	9.8	26.8	0.8	1.2	1.0
Chemistry	6.1	8.4	1.5	1.6	2.9	0.6	0.3	0.9
Biology	12.7	16.4	4.9	1.6	10.5	3.2	1.2	3.0
Computer sciences	11.7	10.1	15.1	3.3	41.2	0.8	1.2	2.0

Table 23: Matriculation Examinees in English and Scientific Subjects at an Enhanced Level, by Track and Cluster of Specializations – Arab Education

2003

	Grand Total	Thereof:						
		Academic track	Technological track – total	Cluster of specializations				
				Engineering, planning and control	Science-based technologies	Communications, paramedical and education systems	Administration and industrial systems	Design
Examinees – total	12,719	8,540	4,154	838	1,193	755	1,036	332
	Absolute numbers							
Examined in English at an enhanced level	49.1	52.1	43.3	20.0	93.6	35.0	22.2	5.4
	Percentage of examinees in each cell							
Scientific subjects								
Examined in at least one subject at an enhanced level	48.5	53.7	37.8	16.9	93.7	31.4	6.7	1.5
Number of subjects:								
1	19.1	22.1	13.0	7.0	23.1	17.9	6.3	1.5
2	18.3	19.1	16.7	6.7	44.6	13.5	0.4	-
3 or more	11.1	12.5	8.1	3.2	26.0	-	-	-
Mathematics	33.2	33.9	31.9	16.1	84.4	14.7	6.6	1.5
Physics	12.0	9.9	16.4	6.1	52.9	-	-	-
Chemistry	12.3	17.0	2.7	3.8	4.4	3.7	-	-
Biology	26.4	34.2	10.5	3.5	17.1	26.5	0.5	-
Computer sciences	5.6	3.8	9.3	0.6	31.9	-	-	-

6. Examinees Not Entitled to a Certificate, by Relative Achievement on Matriculation Exams

An examinee may not be entitled to a matriculation certificate for various reasons: lacking an exam in a required subject, lacking an exam in a subject at an enhanced level, achieving fewer than 20 units of study (the minimum number of units required to receive a matriculation certificate), and so on. In this publication, the number of units attained by examinees is regarded as the main indicator of how far they are from receiving a matriculation certificate, although there may be examinees who achieved over 20 units and failed to meet one of the other requirements or more.

Approximately a third of the pupils who took the matriculation exams in the Hebrew and Arab education sectors were not entitled to a matriculation certificate. In the academic track, 27% of the pupils attained at least 18 units of study and were close to receiving a matriculation certificate, compared with 30% of pupils in the technological track (in both the Hebrew and Arab education sectors). These data were calculated according to the total number of examinees not entitled to a certificate, whereas the data in Table 24 were calculated within pupils who were not entitled to a certificate but passed at least one exam.

The pupils who achieved a **small number of units of study** (up to 10) were mainly from the following population groups: pupils in the agricultural and technological tracks (versus pupils in the academic track); pupils in the clusters Engineering, Planning and Control and Administration and Industrial Systems of the technological track, as well as pupils in the Design cluster in Arab education sector.

The not-entitled pupils who accumulated **18 units of study or more** and were **close to receiving a matriculation certificate**, included, on the one hand, pupils of clusters with a high rate of entitlement: Science-Based Technologies, and Communications, Paramedical and Education Systems; on the other hand, this population also consisted of the pupils in the cluster Administration and Industrial Systems in the Arab education sector – half of these pupils who took matriculation exams did not meet the requirements.

Table 24: Examinees Not Entitled to a Certificate, Who Passed at Least One Exam, by Number of Units of Study, and by Sector, Track, and Cluster of Specializations

2003

	Not-entitled to a certificate		Percentage of not-entitled to a certificate, by number of accumulated units of study		Not-entitled to a certificate		Percentage of not-entitled to a certificate, by number of accumulated units of study	
	Total – absolute numbers	Percentage of examinees	Up to 10 units	18 units and over	Total – absolute numbers	Percentage of examinees	Up to 10 units	18 units and over
	Hebrew education				Arab education			
Grand total	18,900	28.3	35.3	27.6	4,919	38.7	34.6	38.2
Academic track	10,501	23.8	33.6	25.6	3,054	35.8	30.4	39.4
Agricultural track	408	42.7	40.0	27.6	..	..	..	..
Technological track – total	7,958	36.5	37.5	30.7	1,852	44.6	41.9	35.9
Cluster of specializations								
Engineering, planning and control	1,611	50.2	41.2	30.9	546	65.2	52.3	24.4
Science-based technologies	1,402	19.0	26.3	44.2	229	19.2	13.0	75.0
Communications, paramedical, and education systems	803	33.8	23.1	37.3	301	39.9	26.6	37.8
Administration and industrial systems	2,685	51.1	46.6	21.9	507	48.9	39.6	41.9
Design	1,456	40.8	35.0	29.4	269	81.0	66.2	11.1

C. POPULATION

The data in this publication refer to the twelfth grade cohort of 2002/03.

Pupils and examinees belonging to the following population groups were included in the data processing:

- (1) Twelfth grade pupils attending schools under the supervision of the Ministry of Education, Culture and Sport – excluding those from East Jerusalem in the Arab education sector. These pupils were excluded from the present and previous survey populations, because most of them take matriculation exams outside of the framework of the Israeli Ministry of Education, Culture and Sport.
- (2) Matriculation examinees who were also included in the files of twelfth grade pupils; examinees not appearing in the files of pupils were not included in the processing.

Hence, the size of the examinee and entitled populations appearing in the publication differ from those presented in the Statistical Abstract of Israel (see Table 25).¹

However, the data do not include external examinees. The number of external examinees entitled to a matriculation certificate in 2003 was 1,980.

Table 25: Matriculation Examinees and Entitled to a Certificate, by Sector – Data of the Statistical Abstract of Israel and the Current Publication

	In the Statistical Abstract of Israel	In the current publication
Hebrew Education		
Examinees	67,359	66,855
Entitled to a certificate	47,136	47,082
Rate of entitled to a certificate per 100 examinees	70.0	70.4
Arab Education		
Examinees	12,897	12,719
Entitled to a certificate	7,333	7,296
Rate of entitled to a certificate per 100 examinees	56.9	57.4

¹ See *Statistical Abstract of Israel, 2004*, No. 55, Table 8.23, Jerusalem – 2004.

D. METHOD AND SOURCES OF DATA

The following files served as the sources of data:

The 2002/03 file of twelfth grade pupils: The file was produced at the Central Bureau of Statistics, based on the student files prepared by the Ministry of Education, Culture and Sport. After filling in missing personal information copied from the Population Register, the final files included each pupil's identification number, characteristics of study, and various personal details.

The 2003 files of matriculation examinees and those entitled to an internal matriculation certificate: The file was produced at the Central Bureau of Statistics, based on data from the 2003 Matriculation Exams Files, which were obtained from the Ministry of Education, Culture and Sport. The files included exams taken during the main period of examination (June 2003) and the secondary period (December 2003). In addition to the information about exams, the files include personal characteristics of each examinee which were copied from the Population Register.

The files were combined according to the pupils' identification numbers, to form the **2003 file of twelfth grade pupils, examinees and entitled to a certificate**, which was used as the basis for processing the survey data.

E. EXPLANATIONS AND DEFINITIONS

1. Explanations

- (a) The matriculation exam dates are presented in this publication according to the Gregorian year, e.g., 2003, because they include the results of exams taken at the main and secondary periods of examination in that year (e.g., June 2003 and December 2003, respectively). Data on matriculation exams from 2001 relate to the 2000/01 cohort, data on exams from 2000 relate to the 1999/2000 cohort, and data on exams from 1998 relate to the 1997/98 cohort.
- (b) In the tables, the total at absolute numbers include unknown cases. Therefore, in some instances the data may not add up to the total number appearing in the table.
- (c) Percentages calculated from absolute numbers smaller than 25 appear in parentheses.
- (d) The symbol (..) refers to data that cannot be presented for reasons of confidentiality, or data based on a small number of cases.

2. Features of System and Personal Characteristics of pupils

Track – refers to the pupil's individual track of studies, as listed in the file of the Ministry of Education, Culture and Sport.

Field of specialization – refers to the field in which the pupil is specializing, as listed in the same file.

About 4,000 pupils who were listed in the Technological Track in the 2002/03 file of pupils but were enrolled in an academic field of specialization are included in the total figures but not in the analyses by track and specialization.

Since a large proportion of the pupils in schools under ultra-orthodox supervision are in this category, they are not presented by track and specialization in this publication.

Cluster of specializations – the classification of pupils in the technological track by clusters of specializations was devised by the Ministry of Education, Culture and Sport. The fields of specialization included in each cluster are listed in Chapter B, Section 2: “Clustering of Specializations in the Technological Track”.

University entrance requirements – include three units of study in mathematics, four units of study in English, and one subject at an enhanced level (at least four units of study) besides English.

An enhanced level in any subject covers 4 units of study or more.

Origin – Israeli-born pupils were classified by their **father's continent of birth**. The category “Israel” refers only to those pupils born in Israel whose fathers were also born in Israel.

Locality of residence – refers to the pupil's locality of residence in twelfth grade.

Socio-economic cluster of the local authority – based on the socio-economic index of local authorities developed by the Central Bureau of Statistics.¹ This index reflects the socio-economic level of each local authority based on an analysis of selected demographic, social and economic variables.

The rate of twelfth grade pupils who received matriculation certificates by locality of residents, during the year referred to the socio-economic index is also among the variables included in this analysis.

¹ See: Central Bureau of Statistics, *Characterization and Classification of Local Authorities by the Socio-Economic Level of the Population, 2001*, Publication No. 1222, Jerusalem, 2004.

In the original classification, local authorities were allocated to 10 clusters: the first cluster consisted of authorities with the lowest values on the socio-economic index, and the tenth cluster consisted of authorities with the highest values on this index. In the following tables, pairs of adjacent clusters were combined so that localities of residence are presented according to five clusters.

In evaluating the data, it should be borne in mind that the socio-economic index and the clusters were prepared for local authorities only. This category includes municipalities and local councils but does not include regional councils. Therefore, pupils living in localities under the jurisdiction of regional councils were not included in the tables presenting this variable.

It should also be taken into account that the socio-economic index is updated frequently, and variables included in the socio-economic index for 2001,¹ which is the basis for the data presented in Tables 4–5 following the introduction, are different from the variables included in the socio-economic indices used for the 1996 Survey and the 1998 Survey (publications 1115 and 1169, respectively). This needs to be taken into consideration in comparison of the data from the three surveys according to the socio-economic cluster of the locality of residence.

¹ See *ibid.*