



May 2017 Examinations

Electrical Workers Registration Board.



1. Overview – May 2017 examinations

	Number of candidates sitting- exam	Number <u>of</u> candidates who passed- exam	Pass rate %	Average score	Median score
Electrical Appliance Serviceperson (EAS)	60	50	83	75	81.5
Electrical Appliance Serviceperson (Qualified) (EASQ)					
Electrical Service Technician (EST)	111	78	70	62	65.5
Electrician Regulations (ER)	94	63	67	61.5	61.5
Electrician Theory (ET)					
Electrical Inspector <u>inspector</u> (EI)					
Electrical Installer (EIN)					
Associated Tradesperson (AT)	12	12	100	77	79
TOTAL	277	203	73	66	66.5

2. Issues of interest – May 2017

Overall

Comment	Suggestion or recommendation for Board consideration
<p>The moderation and marking of the examination papers went well.</p> <p>There were no significant issues that arose.</p> <p>The overall pass rate of <u>73% is consistent with pass rates for May examinations</u>58% is lower than that in previous examination rounds due to the low pass rate for the Electrician Theory examination.</p> <p>However, when the Electrician Theory result is removed, the overall pass rate rises to 66.5% which is close the running yearly average for exams of 67.5%.</p>	<p><u>Nil</u></p>

Electrical Appliance Serviceperson

Comment	Suggestion or recommendation for Board consideration
<p>The pass rate of <u>83.76%</u> is consistent with other EAS examinations.</p> <p><u>1 candidate gained 100 marks.</u></p> <p><u>11 candidates gained between 90 and 98 marks.</u></p> <p>Marker comments:</p> <ul style="list-style-type: none"> The examination paper was well moderated with only one change required to the answer schedule. All questions were generally well answered although some had difficulty with the calculation questions. The safety type questions were very well answered showing that this area is well covered in tuition. 	<p>Nil</p>

Electrical Appliance Serviceperson (Qualified)

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Comment	Suggestion or recommendation for Board consideration
There was no Electrical Appliance Serviceperson (Qualified) examination in May 2017.	

Electrical Service Technician

Comment	Suggestion or recommendation for Board consideration
<p>The pass rate of <u>70.64%</u> is <u>consistent with results an average result</u> for this examination.</p> <p><u>1 candidate gained 92 marks.</u></p> <p><u>Candidates had difficulty with question 3 which related to drawing the supply and winding connections to motor terminal blocks and fault diagnosis.</u></p> <p><u>Very few candidates could accurately diagnose the faults. Only 37 of the 111 candidates were able to gain 5 marks or more for this question.</u></p> <p><u>Markers comments</u></p> <p><u>The examination was well balanced in terms of difficulty. There was a balance between a large block of marks that were relatively easy to obtain and the balance which required a little more understanding and study.</u></p> <p><u>Comprehension of the questions seems to have improved. Possibly tutors could also give tips on calculator usage and the effects of truncation in a long calculation.</u></p> <p><u>Moderation was generally well done. However, the following present themselves.</u></p> <p><u>Consideration needs to be given of implications of including bullet points after the text of a question (such as 3(a)). This could be to include something like "the answer should include but not be limited to ..." or listing ALL points that attract marks. Alternatively, this could be used as a means of checking whether the candidate reads the question.</u></p>	

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Electrician Regulations

Comment	Suggestion or recommendation for Board consideration
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The pass rate of 657% from two examinations is consistent with the overall pass rate for Regulations examination. ~~what is expected from this examination.~~

In the February examination:
~~There were 4 examinations in the May period:~~

- ~~• 9 October — 15 candidates sat and passed (passed)~~
- ~~• 1 candidate gained 90 marks.~~

In the April examination:

- ~~• 896 May 5 candidates sat and 58 (all passed)~~
 - ~~• 1 candidate gained 91 marks.~~
- ~~26 May — 764 candidates (492 passed)~~
~~4 December — 6 candidates (4 passed)~~

~~Markers comments — ER 83~~

~~Candidates had difficulty with the following: The pass rate was 64%.~~

Question 3

~~This required candidates to calculate a cable size based on load and voltage drop. About half of the candidates gained 5 marks or more which is consistent with results of previous questions of this type. ~~was a good examination paper with some challenging questions for the candidates on both regulations and standards.~~~~

Question 5

~~This question related to various aspects of testing required by the Regulations and AS/NZS 3000.~~

~~Only 14 of the 89 candidates gained 7.5 marks or more for this question.~~

Question 9

~~This question related to the safe work practices detailed in the Regulations. More than half of the candidates were not familiar with these requirements. Like most Regulations examinations there are various interpretations in the approach the candidate may take in analysing the question.~~

~~Numerous changes or variations were made to the answer schedule, some of course prompted by answers received from candidates.~~

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Electrician Theory

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Comment	Suggestion or recommendation for Board consideration
There was no Electrician Theory examination in May 2017.	

Electrical Inspector

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Comment	Suggestion or recommendation for Board consideration
There was no Electrical Inspector examination in May 2017.	

Electrical Installer

Comment	Suggestion or recommendation for Board consideration
There was no Electrical Installer examination in May 2017.	

Associated Tradesperson

Comment	Suggestion or recommendation for Board consideration
<p><u>All 12 candidates passed this examination.</u></p> <p><u>There were:</u></p> <p>8 October examination 10 plumber / gasfitter candidates sat and 9 passed</p> <p>2 1 plumber candidates sat and both passed</p> <p>29 October examination 8 1 gasfitter / plumber candidates sat and all passed</p>	

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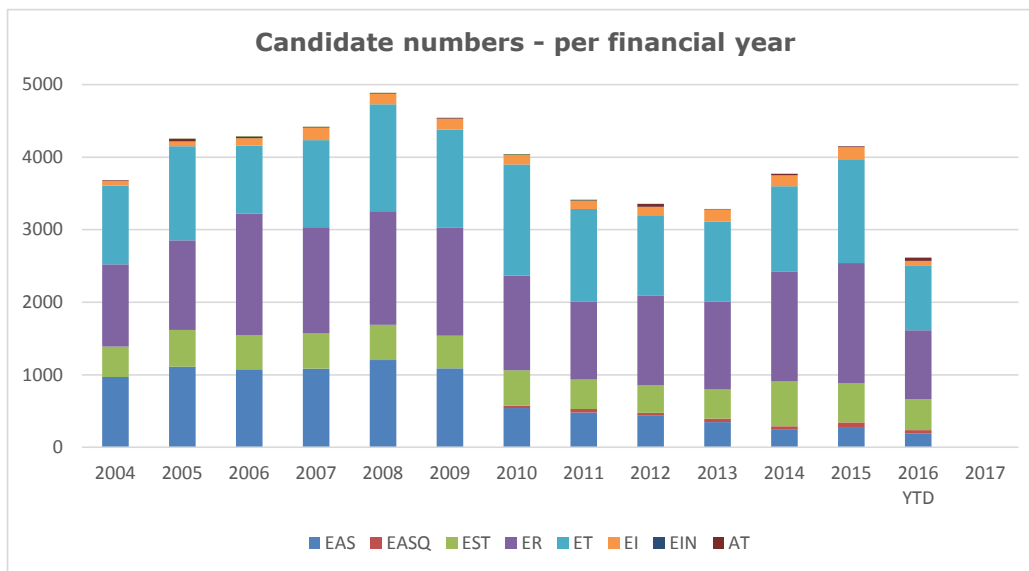
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3. Trends in examination candidate numbers

3.1 Per year

Candidate numbers continue to rise after gradually falling between 2008 and 2013.



	EAS	EASQ	EST	ER	ET	EI	EIN	AT	ES	Total
2004	969		419	1135	1087	63		10		3683
2005	1110		510	1234	1295	68		35	1	4253
2006	1074		472	1675	937	104		17	9	4288
2007	1084		488	1464	1198	172		3	9	4418
2008	1205		486	1563	1475	146		8	1	4884
2009	1090		448	1490	1351	153		7	6	4545
2010	540	34	487	1308	1530	131	3		7	4040
2011	482	46	407	1076	1277	112	5	1	7	3413
2012	437	37	384	1238	1093	126	4	38		3357
2013	348	48	401	1209	1104	170	5	2		3287
2014	250	42	618	1515	1176	147	4	18		3770
2015	269	74	537	1660	1420	178	3	10		4151
2016 YTD	190	49	428	947	896	60	1	44		2615
Total	9048	330	6085	17514	15839	1630	25	193	40	50704

3.2 Per examination round

On average, in each year:

Generally, candidate numbers in the November and June examinations comprise about 90% of the total number sitting in any year. November candidate numbers tend to be slightly higher than June.

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- Candidate numbers for May examinations have generally declined since 2010 and comprise candidates about 4% to 5.5% of the yearly total.

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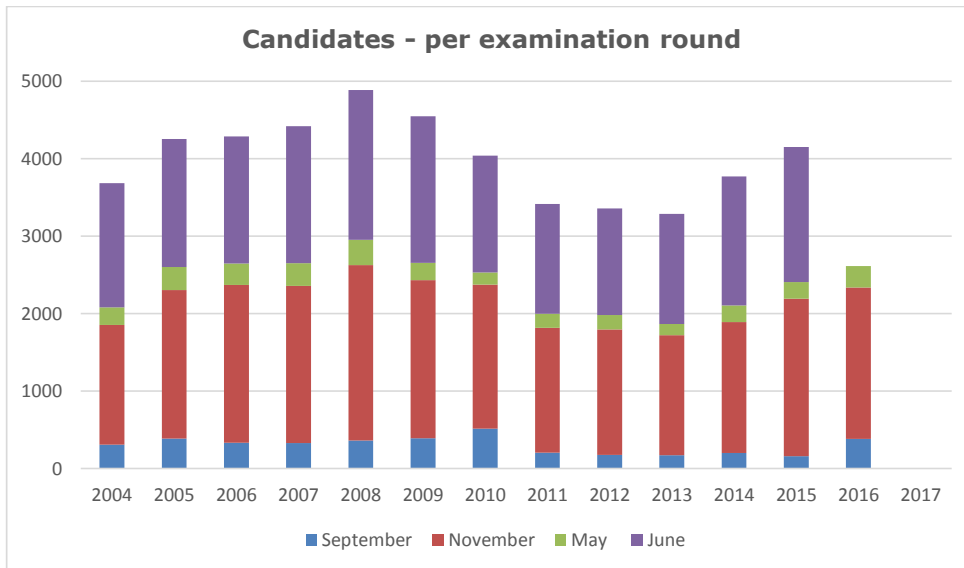
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• June candidates comprise 40.5% of the yearly total.

• May candidates comprise 8% of the yearly total.

• November candidates comprise 46% of the yearly total.

Candidate numbers for September examinations are generally 5% to 6% of the yearly total.



	September	November	May	June	Total
2004	308	1547	227	1601	3683
2005	387	1918	295	1653	4253
2006	334	2035	276	1643	4288
2007	330	2027	293	1768	4418
2008	362	2264	326	1932	4884
2009	391	2042	221	1891	4545
2010	513	1861	155	1511	4040
2011	207	1608	185	1413	3413
2012	178	1617	187	1375	3357
2013	173	1550	144	1420	3287
2014	202	1687	218	1663	3770
2015	161	2032	212	1746	4151

2016 YTD	383	1955	277		2615
2017					
Total	3929	24143	3016	19616	50704

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4. Trends in candidate performance

This section plots the trends in candidate performance relating to pass rates, median marks and average marks.

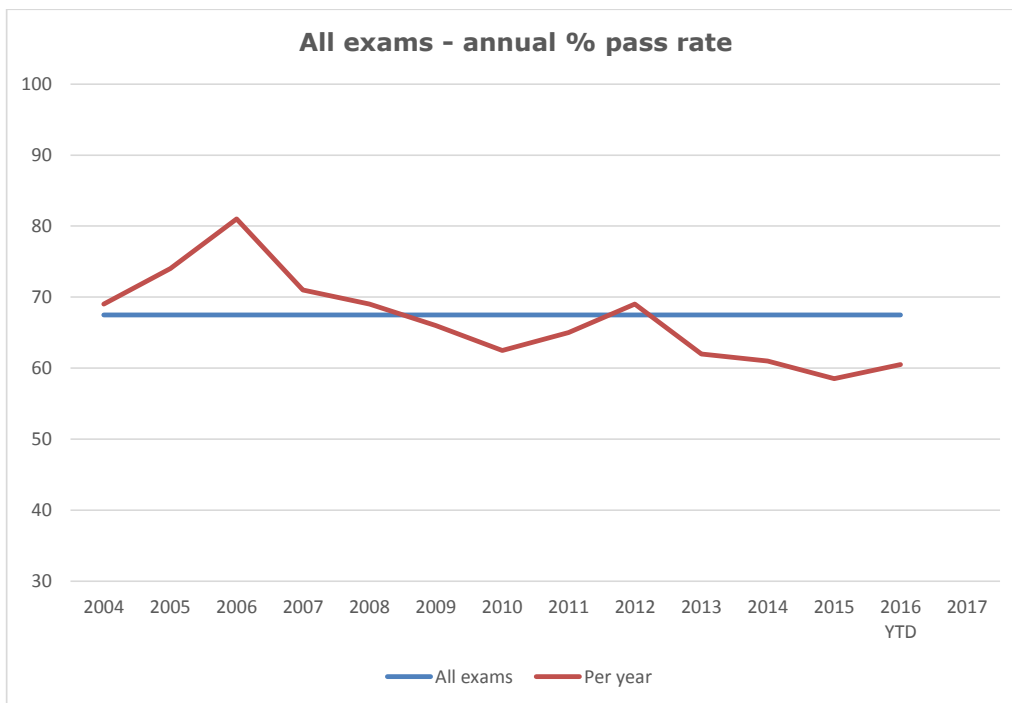
For the median marks and average marks, the pass rates have been superimposed to give an indication of how these change with the pass rates.

4.1 All exams

Pass rates

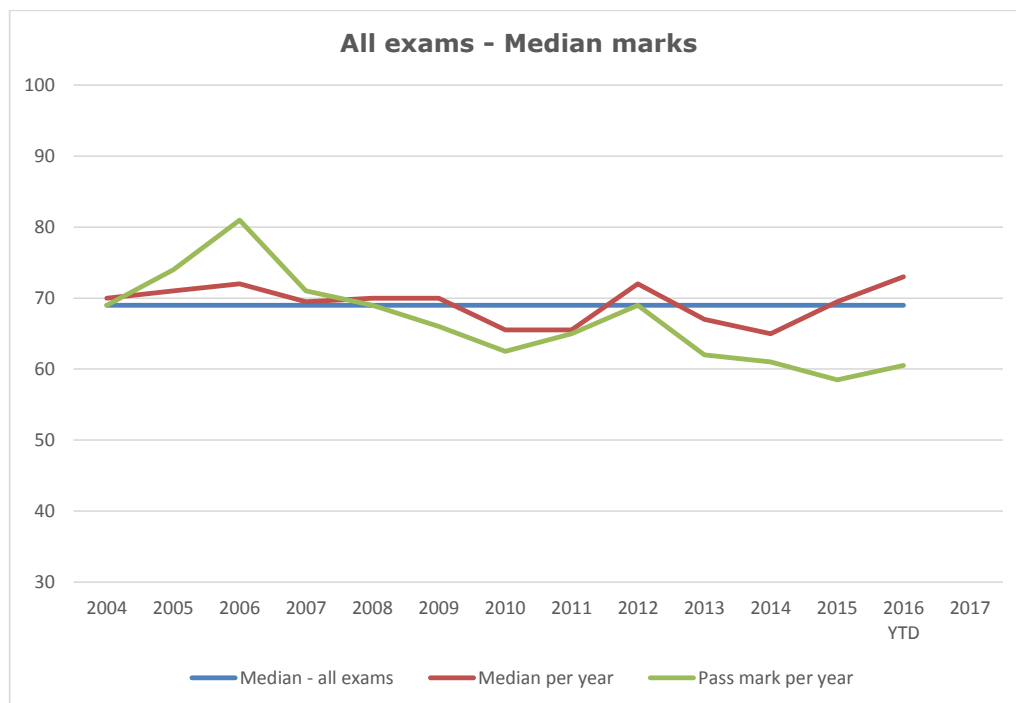
The pass rate for all examinations sat since 2004 is 67.5%.

All classes of examination, except for Electrician Theory, have overall pass rates at or above 67.5%. The overall pass rate for Electrician Theory examinations since 2004 is 56.5%.



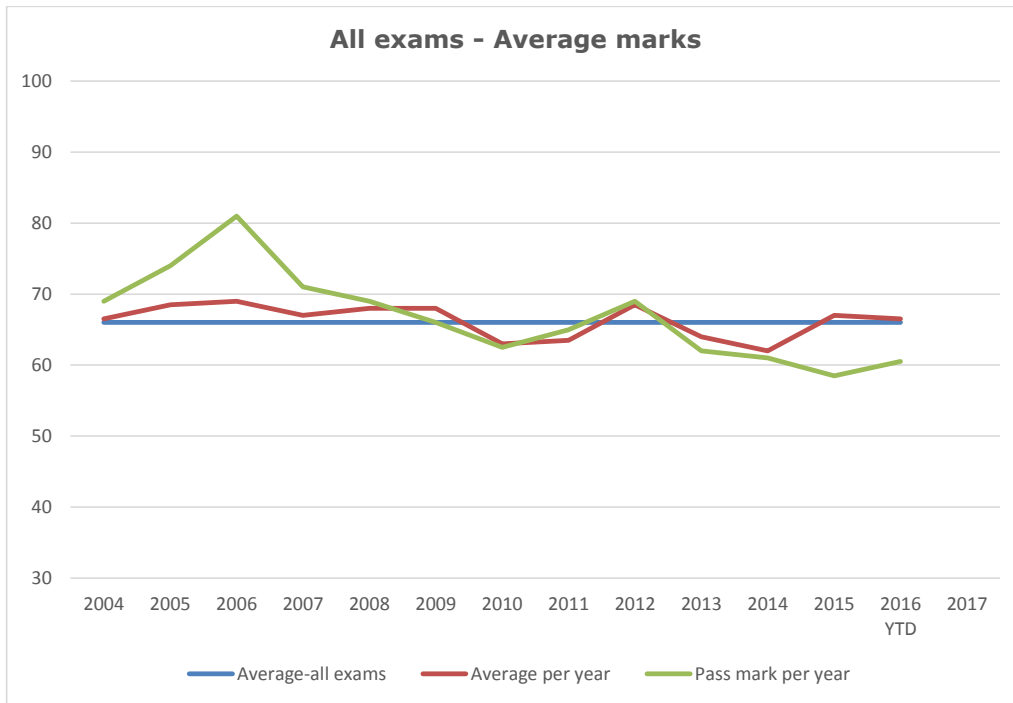
Median marks

The median mark for all examinations sat since 2004 is 69



Average marks

The average mark for all examinations sat since 2004 is 66

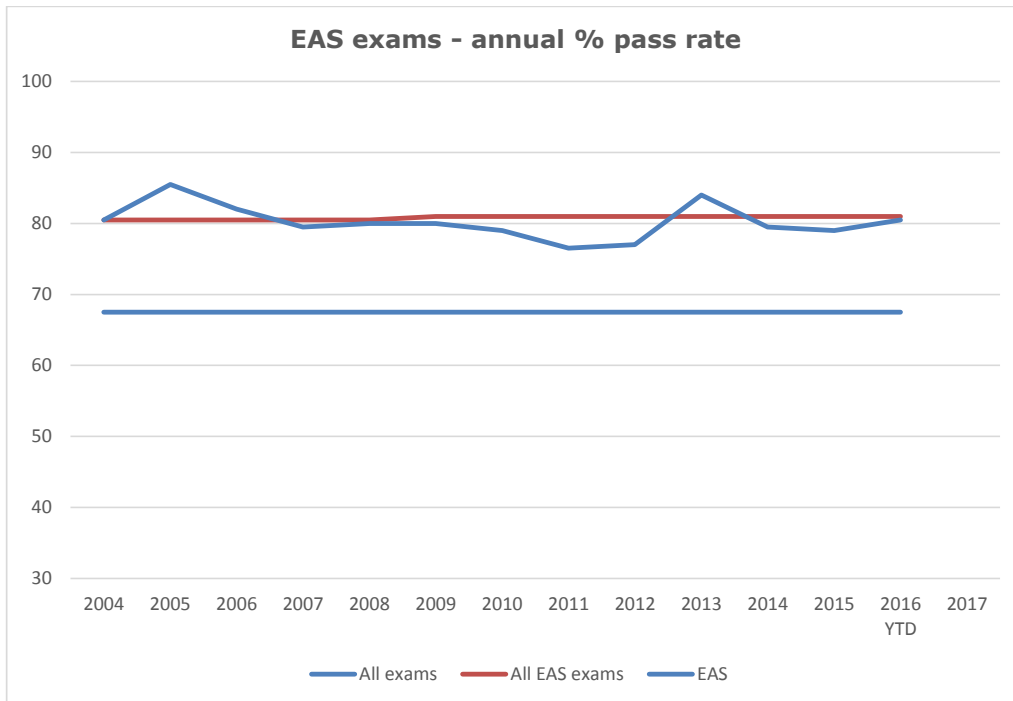


4.2 EAS Examinations

Pass rates

The pass rate for all exams sat since 2004 is 67.5%

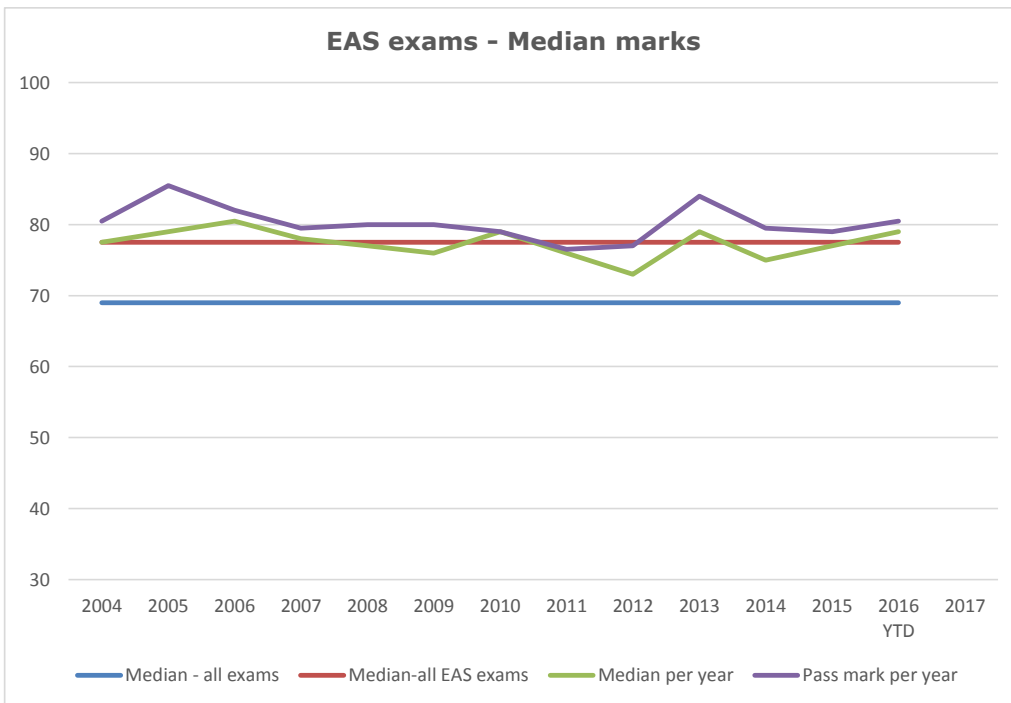
The pass rate for all EAS exams sat since 2004 is 81%



Median marks

The median mark for all examinations sat since 2004 is 69

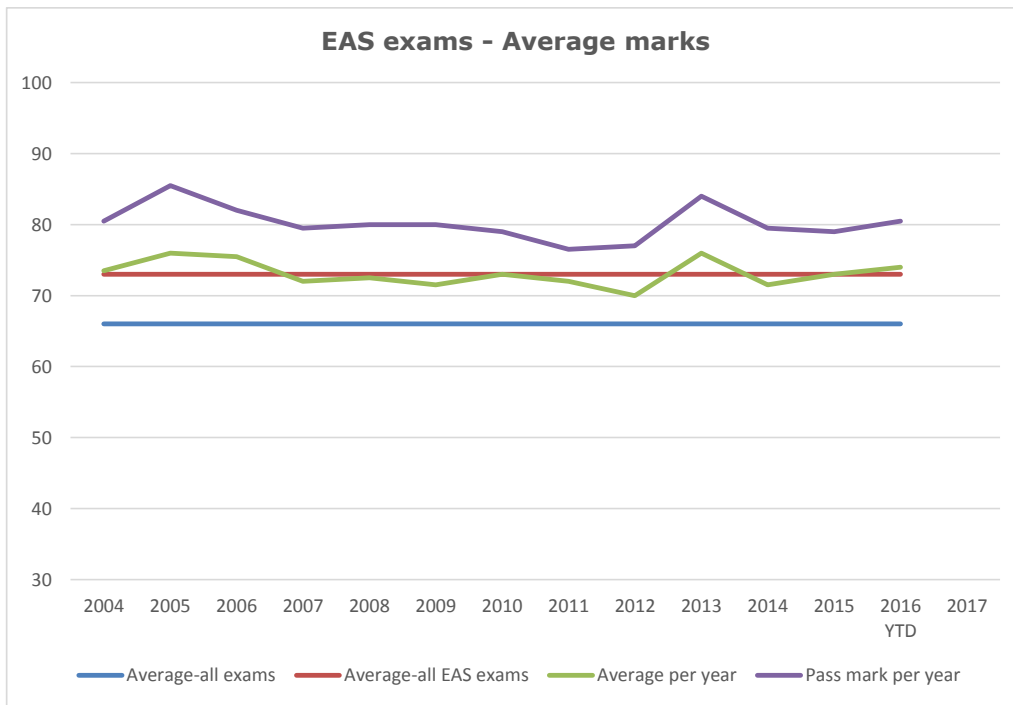
The median mark for all EAS examinations sat since 2004 is 77.5



Average marks

The average mark for all examinations sat since 2004 is 66

The average mark for all EAS examinations sat since 2004 is 73



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4.3 EASQ Examinations

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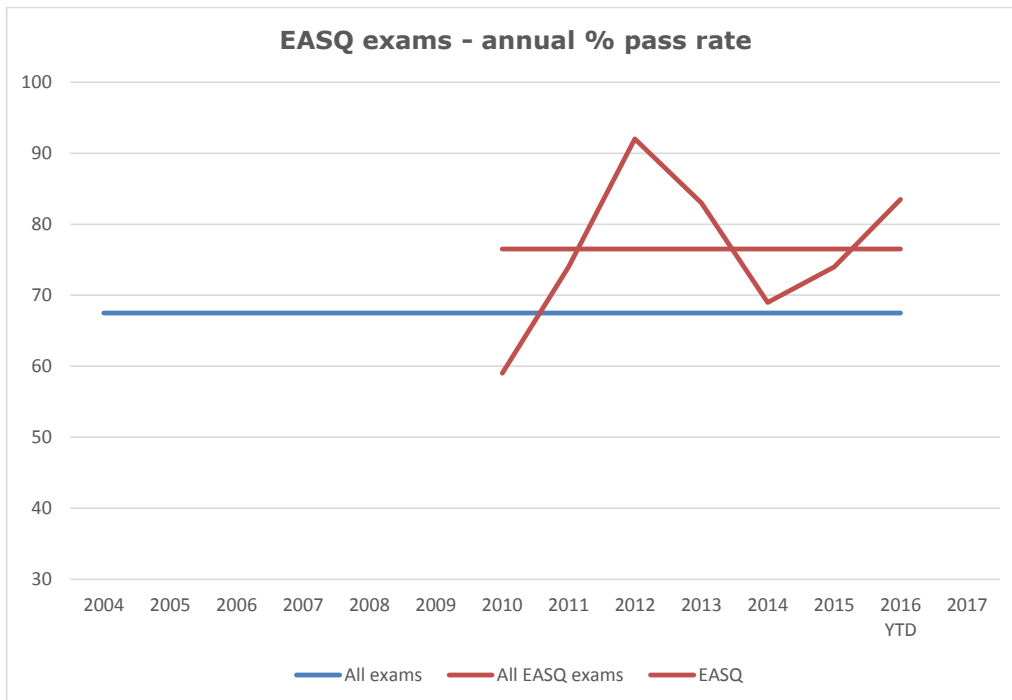
These examinations commenced in 2010

Pass rates

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The pass rate for all exams sat since 2004 is 67.5%

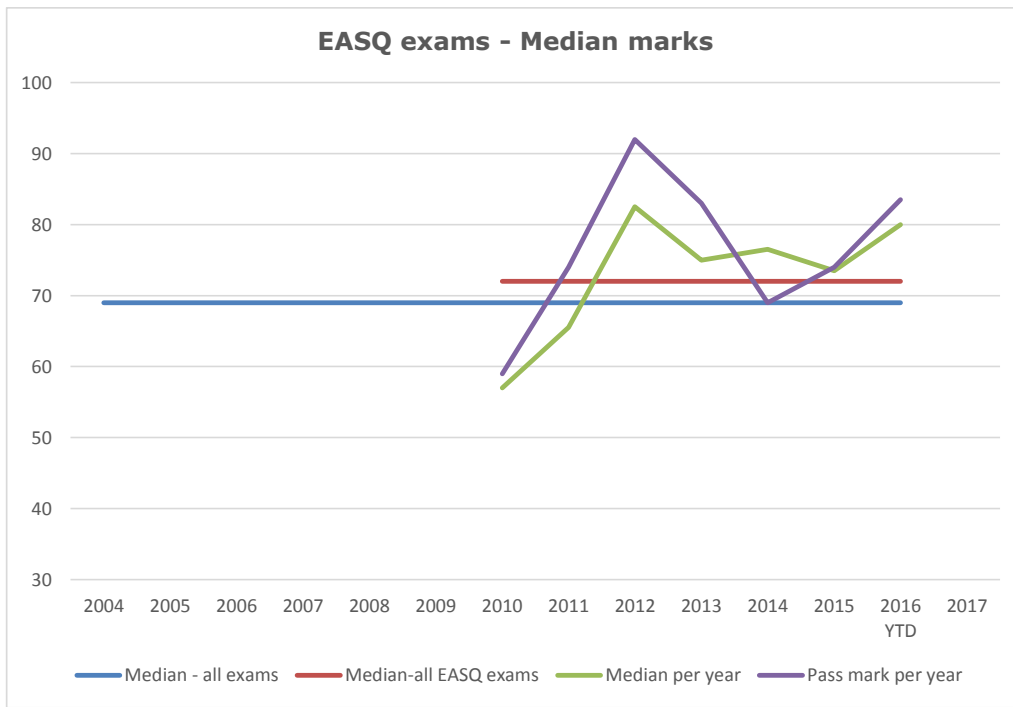
The pass rate for all EASQ exams sat since 2010 is 76.5%



Median marks

The median mark for all examinations sat since 2004 is 69

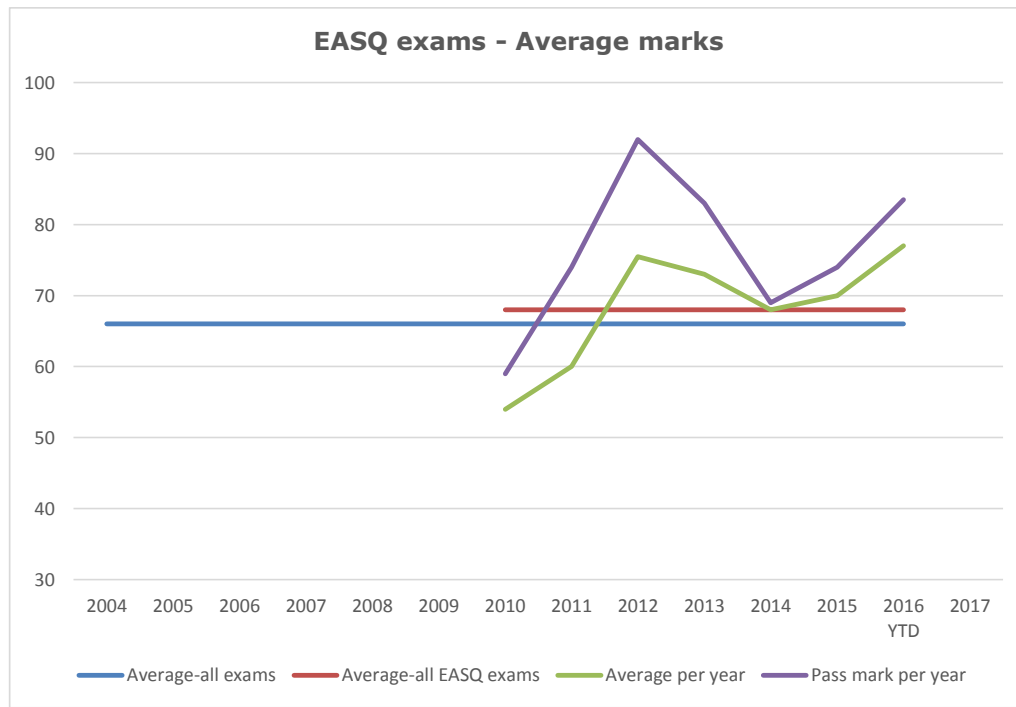
The median mark for all EASQ examinations sat since 2010 is 72



Average marks

The average mark for all examinations sat since 2004 is 66

The average mark for all EASQ examinations sat since 2010 is 68

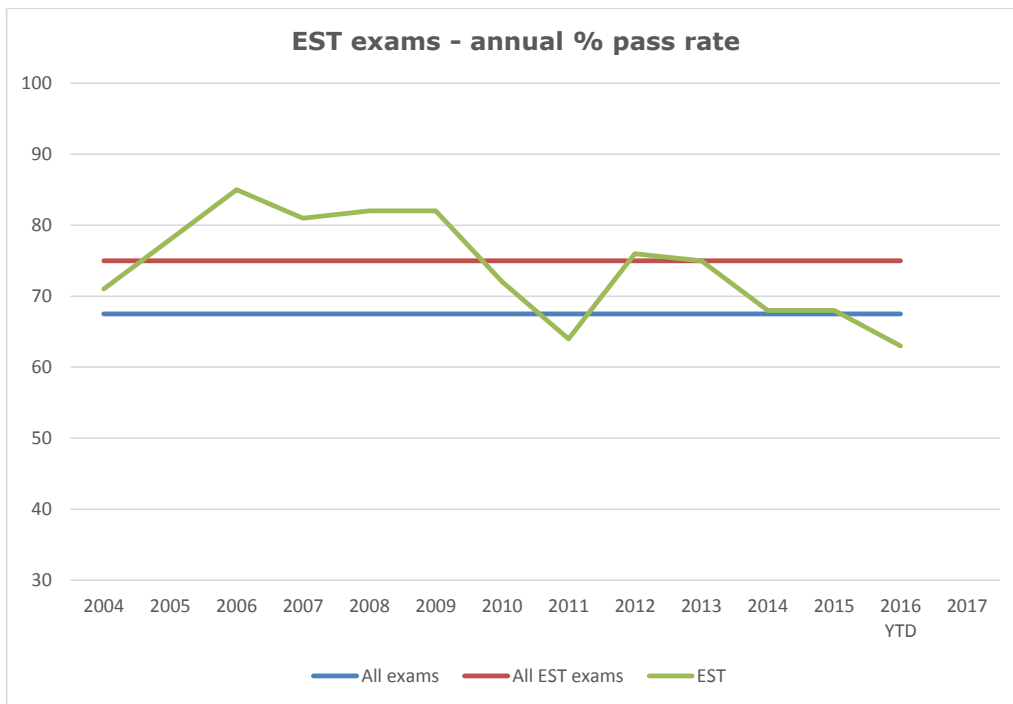


4.4 EST Examinations

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The pass rate for all exams sat since 2004 is 67.5%

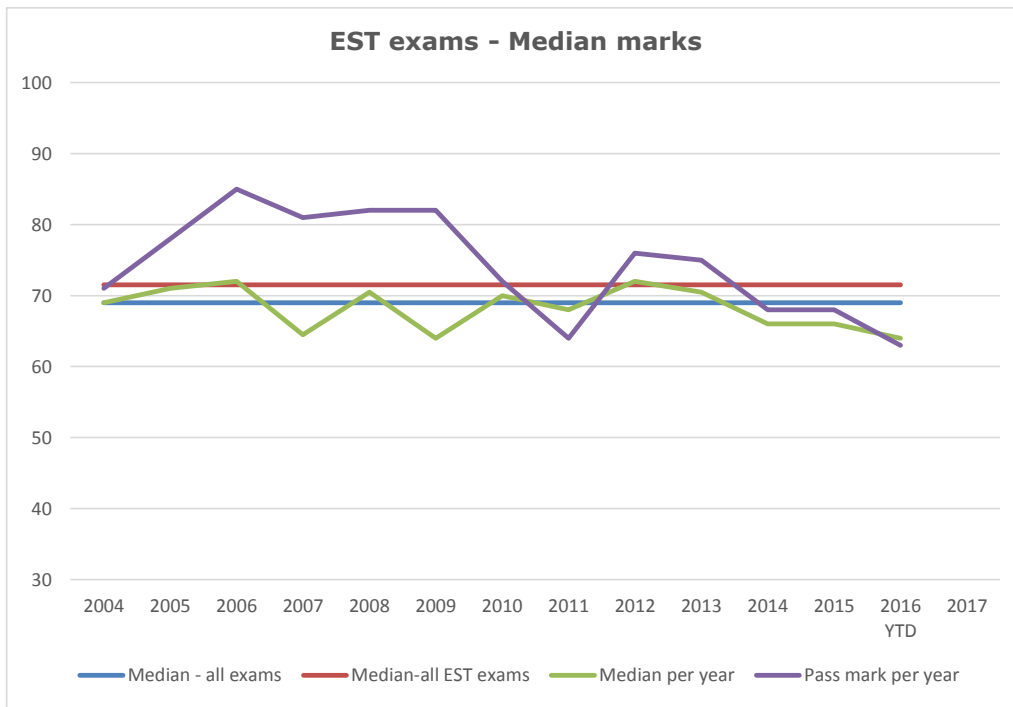
The pass rate for all EST exams sat since 2004 is 76.5%



Median marks

The median mark for all examinations sat since 2004 is 69

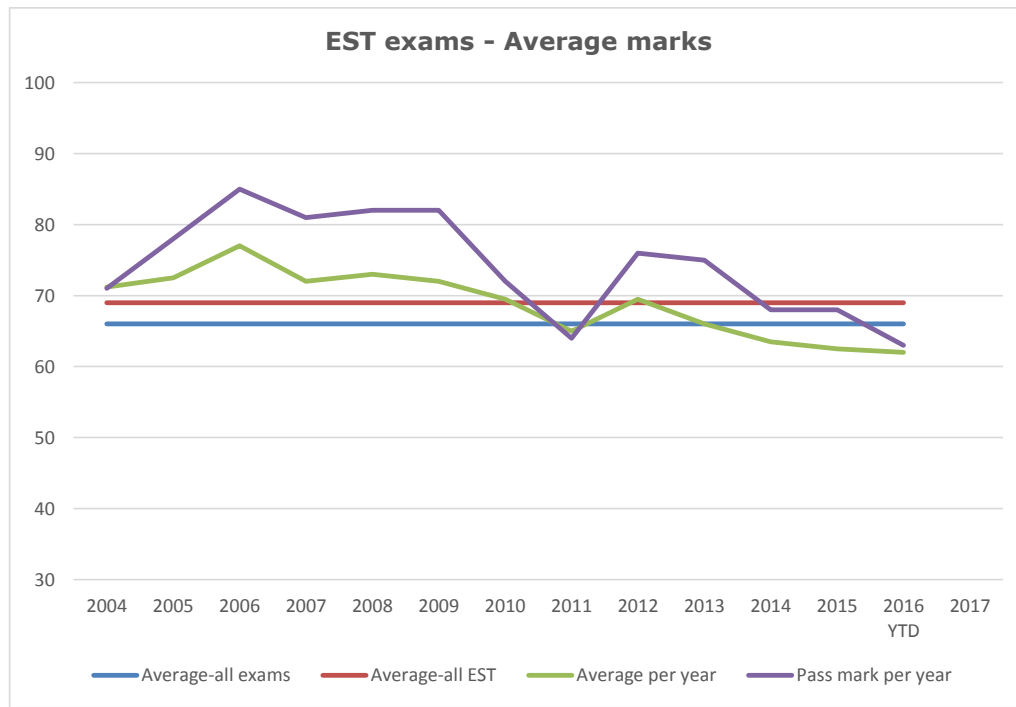
The median mark for all EST examinations sat since 2004 is 71.5



Average marks

The average mark for all examinations sat since 2004 is 66

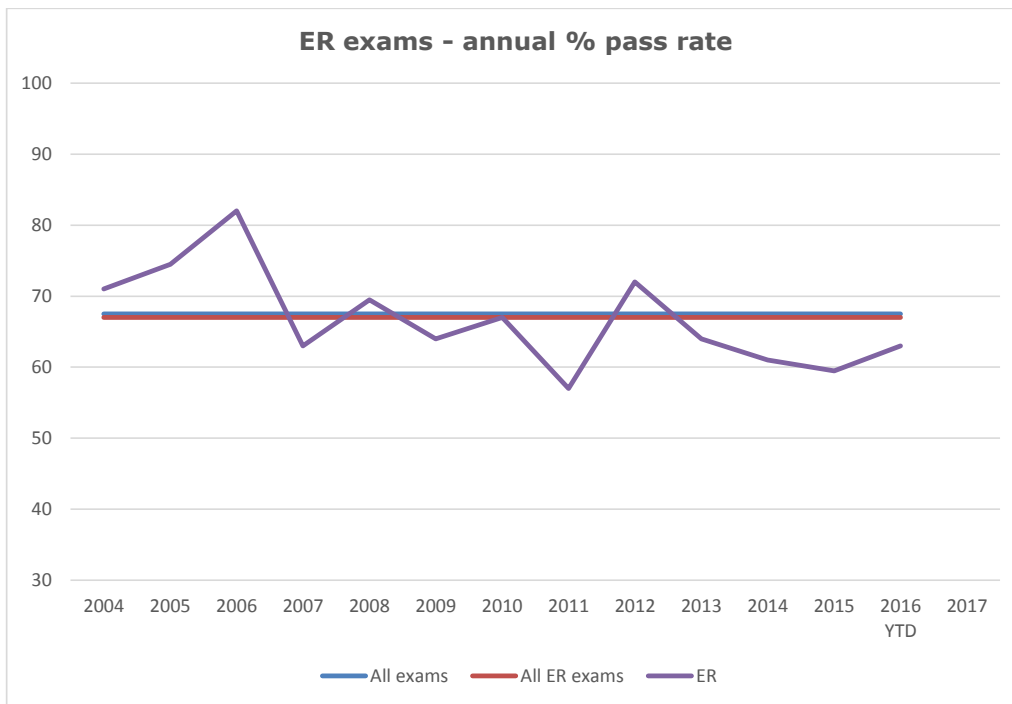
The average mark for all EST examinations sat since 2004 is 69



4.5 ER Examinations

The pass rate for all exams sat since 2004 is 67.5%

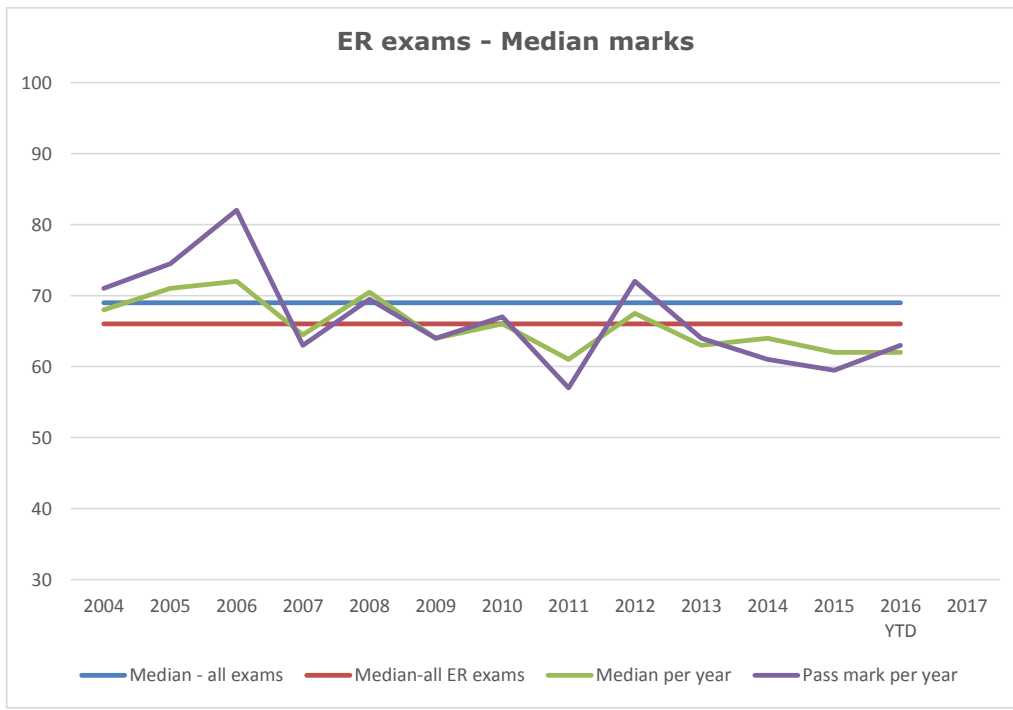
The pass rate for all ER exams sat since 2004 is 67%



Median marks

The median mark for all examinations sat since 2004 is 69

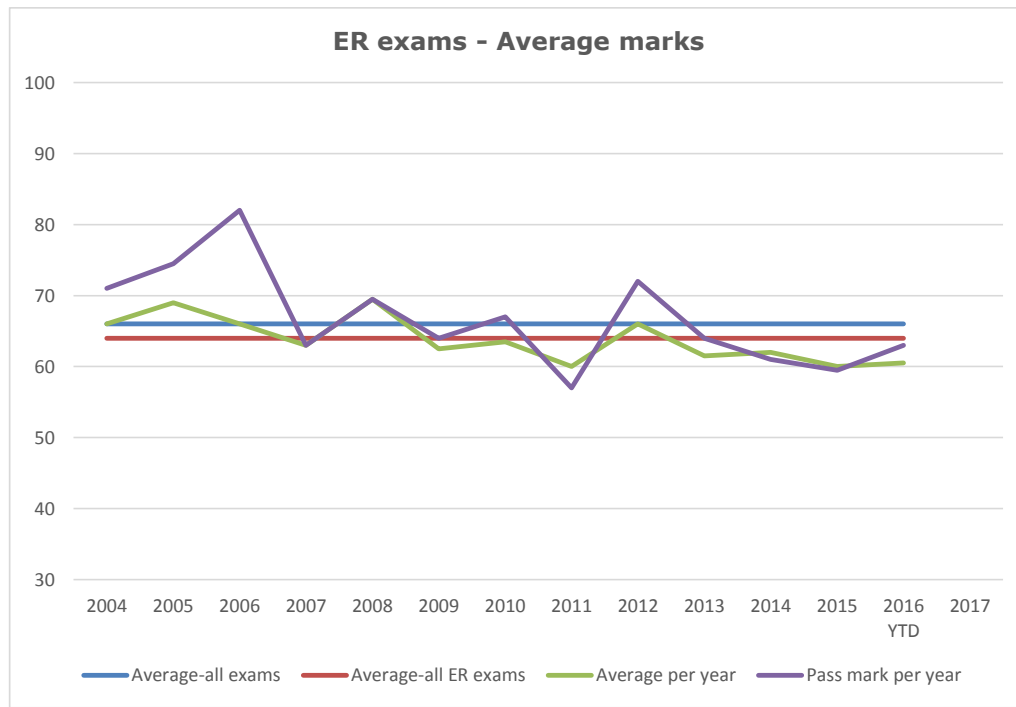
The median mark for all ER examinations sat since 2004 is 66



Average marks

The average mark for all examinations sat since 2004 is 66

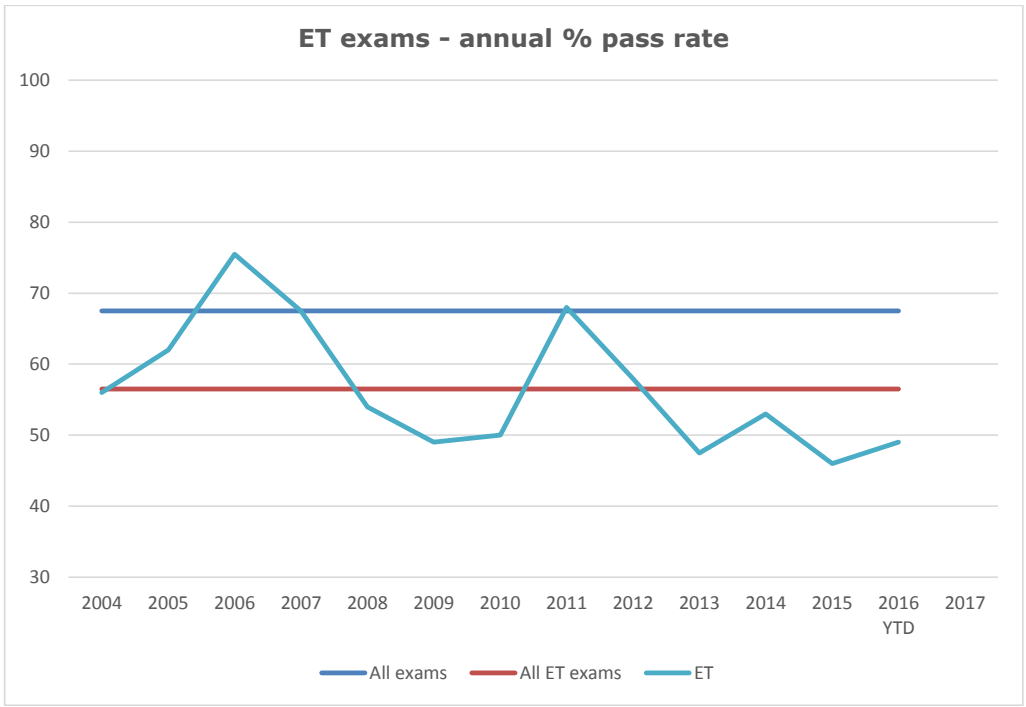
The average mark for all ER examinations sat since 2004 is 64



4.6 ET Examinations

The pass rate for all exams sat since 2004 is 67.5%

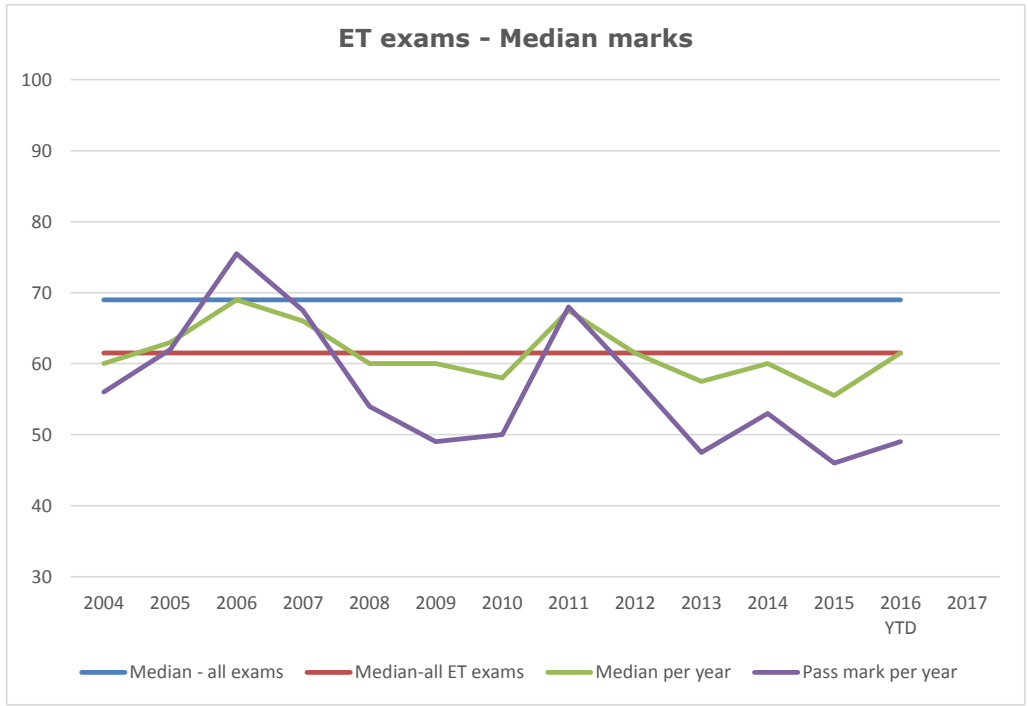
The pass rate for all ET exams sat since 2004 is 56.5%



Median marks

The median mark for all examinations sat since 2004 is 69

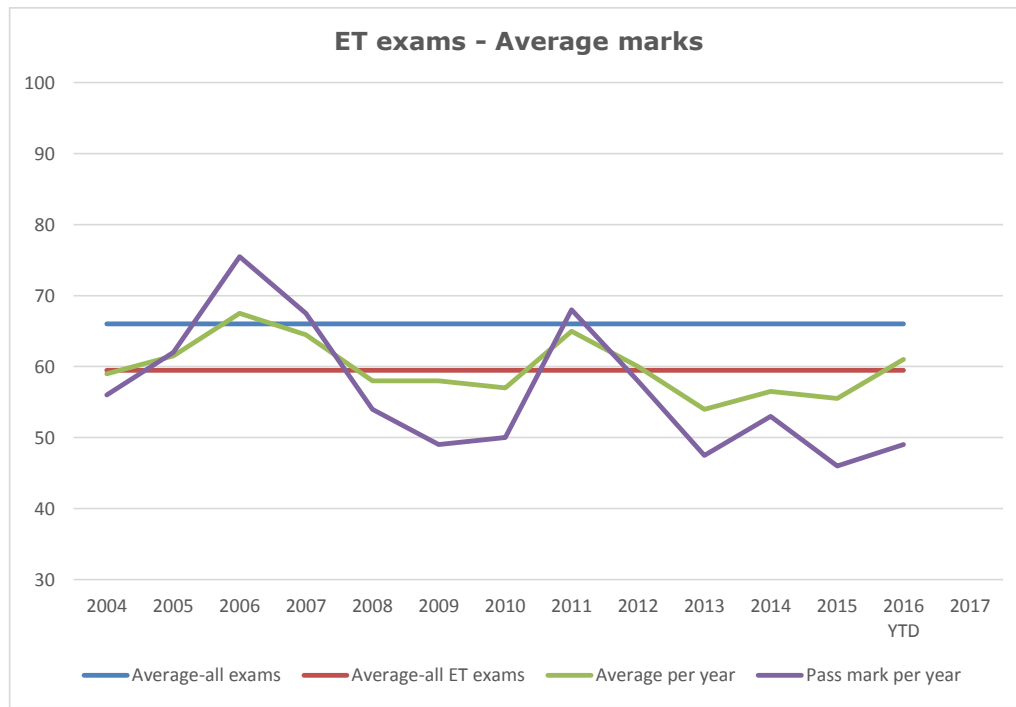
The median mark for all ET examinations sat since 2004 is 61.5



Average marks

The average mark for all examinations sat since 2004 is 66

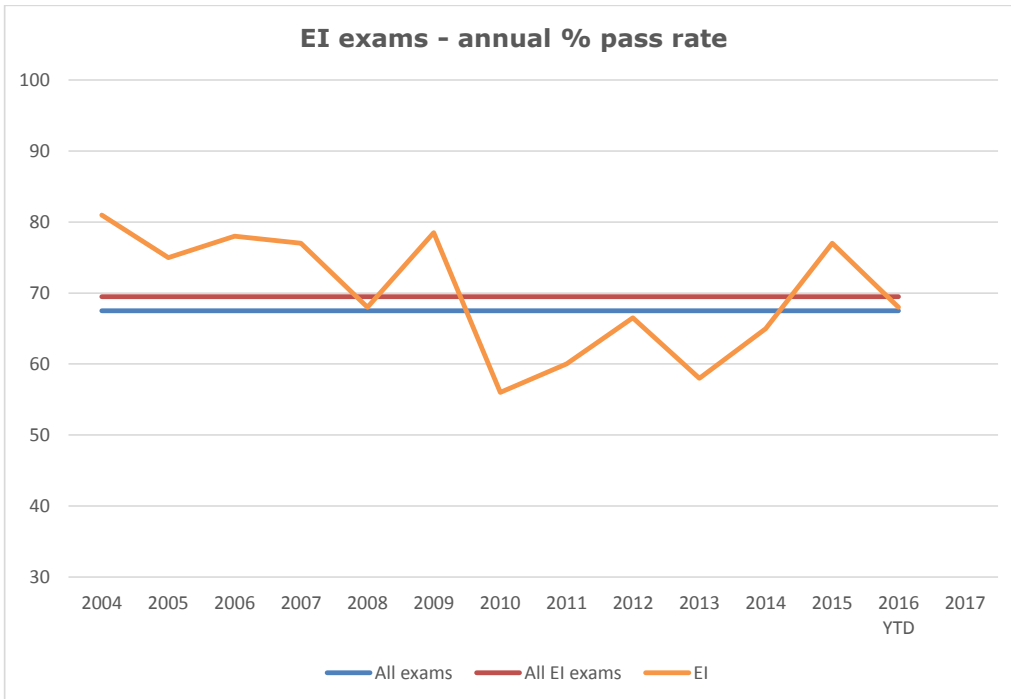
The average mark for all ET examinations sat since 2004 is 59.5



4.7 EI Examinations

The pass rate for all exams sat since 2004 is 67.5%

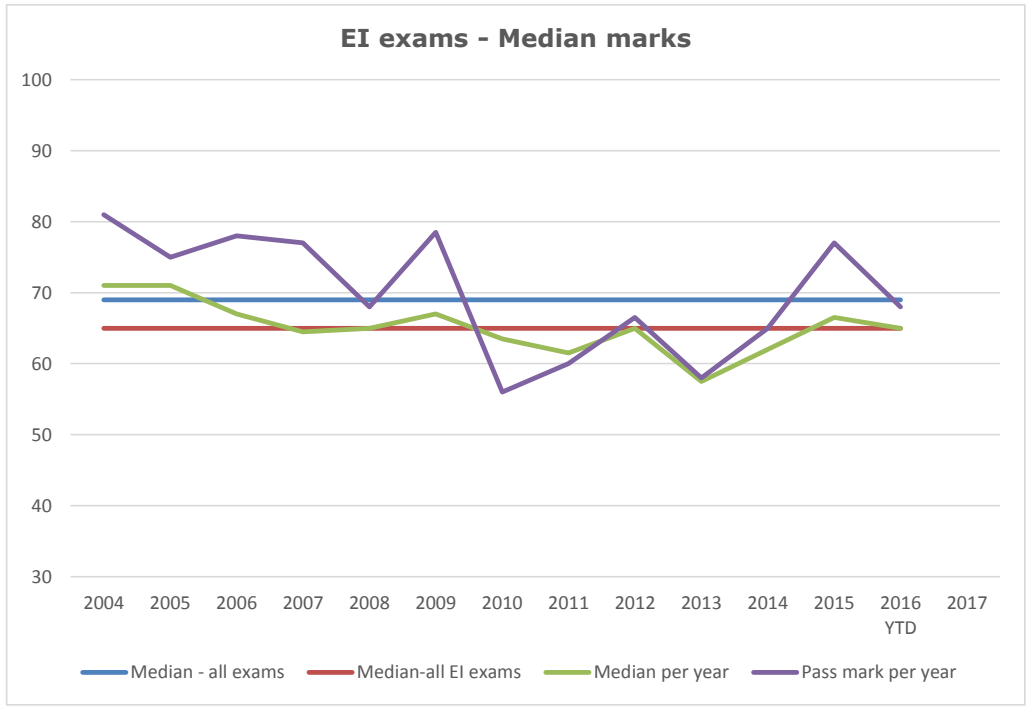
The pass rate for all EI exams sat since 2004 is 69.5%



Median marks

The median mark for all examinations sat since 2004 is 69

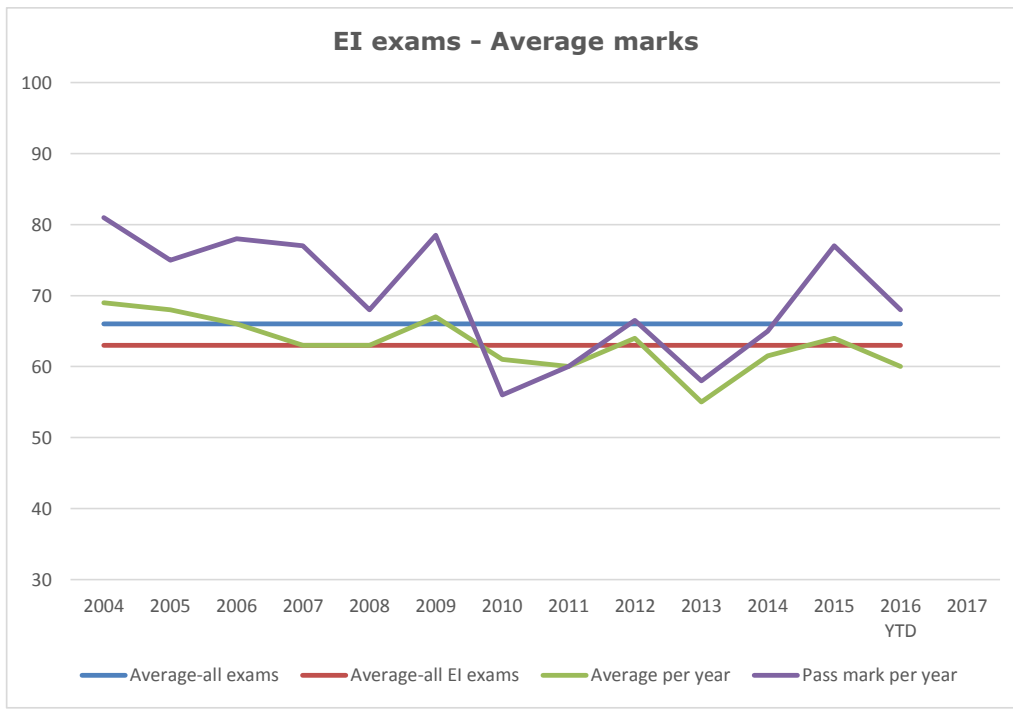
The median mark for all EI examinations sat since 2004 is 65.



Average marks

The average mark for all examinations sat since 2004 is 66

The average mark for all EI examinations sat since 2004 is 63

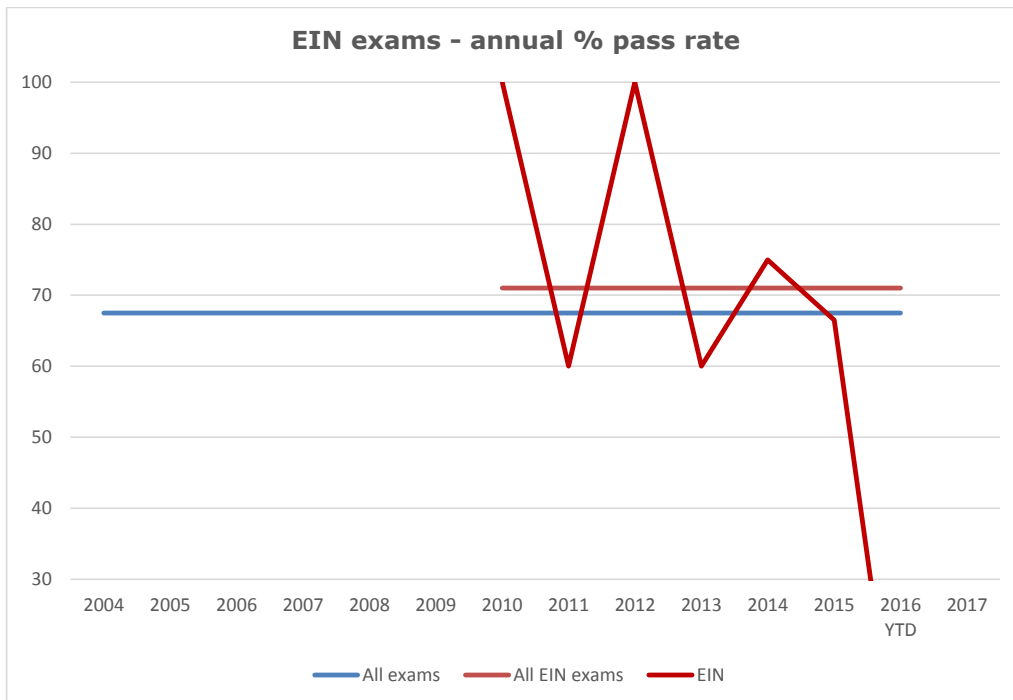


4.8 EIN Examinations

The pass rate for all exams sat since 2004 is 67.5%

The pass rate for all EIN exams sat since 2010 is 68%.

It is not possible to do any meaningful analysis on this examination. Only 25 candidates have sat since 2010.

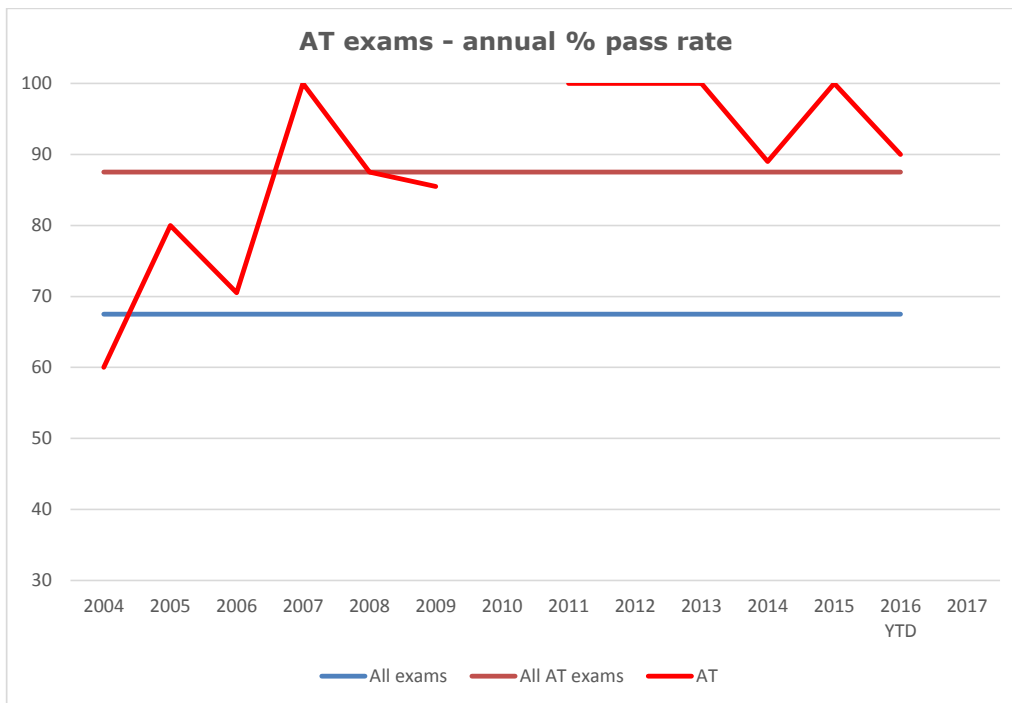


4.9 AT Examinations

The pass rate for all exams sat since 2004 is 67.5%

The pass rate for all AT exams sat since 2004 is 87.5%.

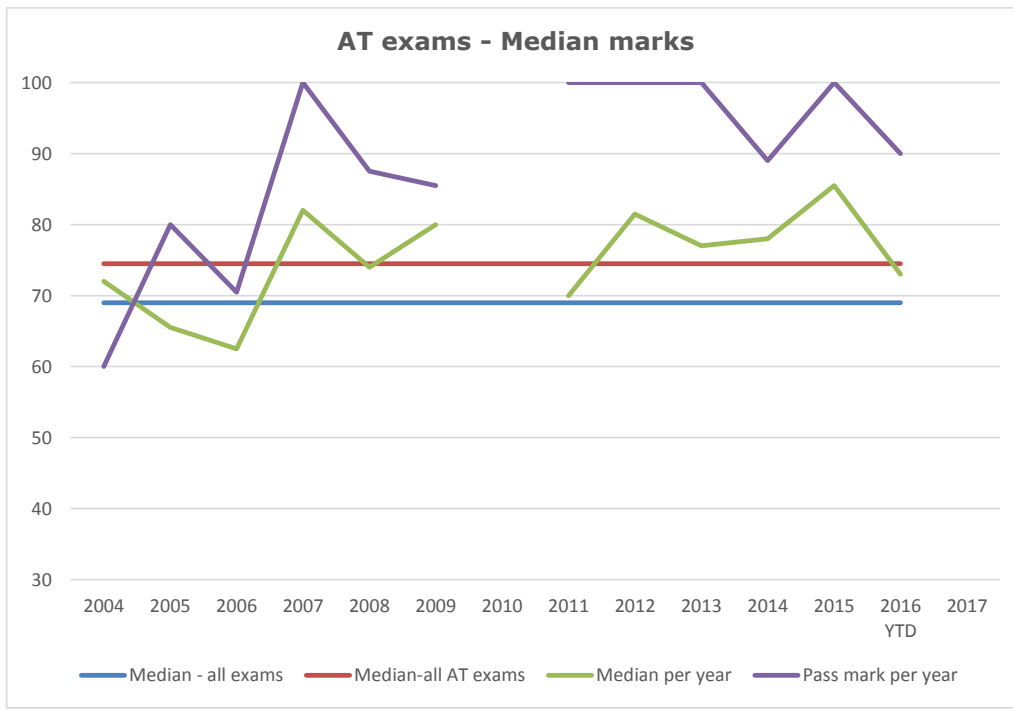
There were no AT exams sat in 2010



Median marks

The median mark for all examinations sat since 2004 is 69

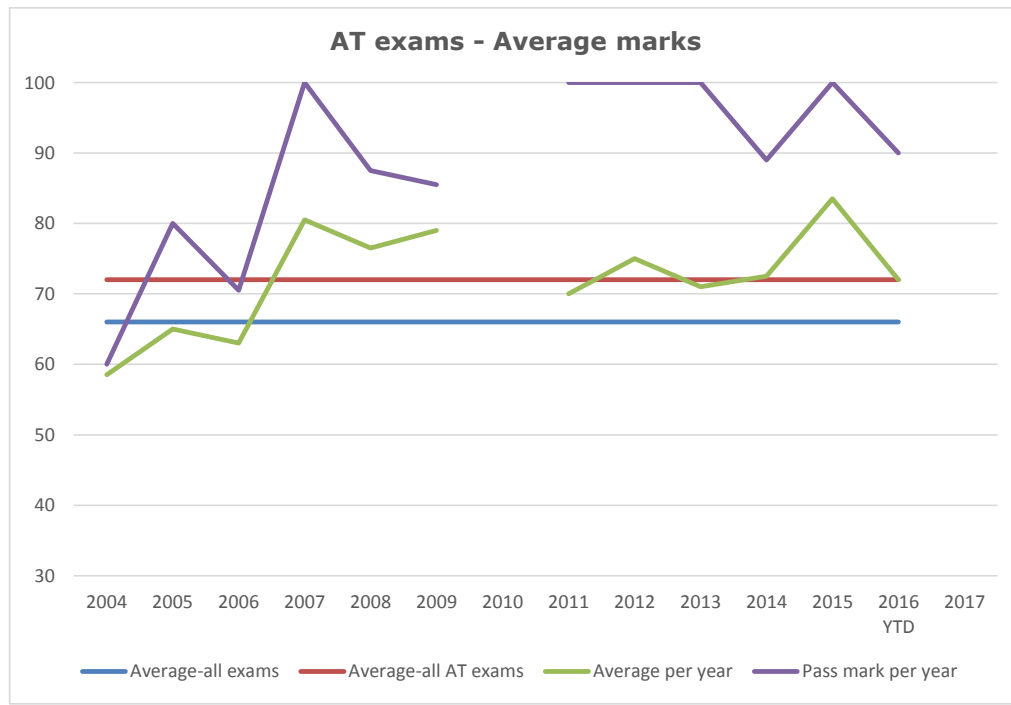
The median mark for all AT examinations sat since 2004 is 74.5.



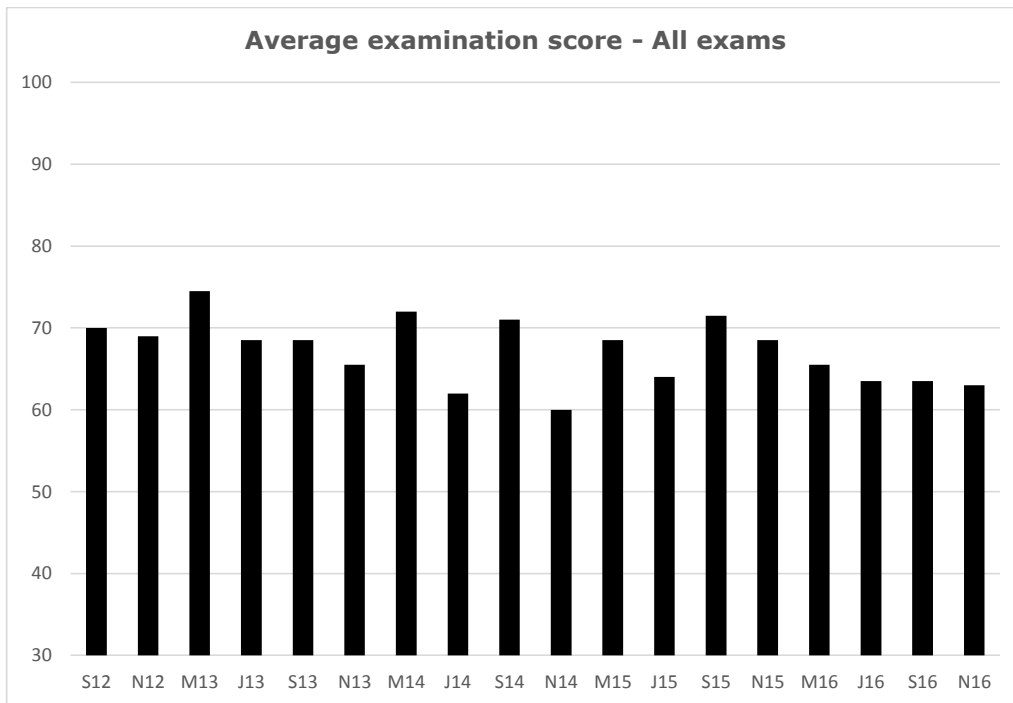
Average marks

The average mark for all examinations sat since 2004 is 66

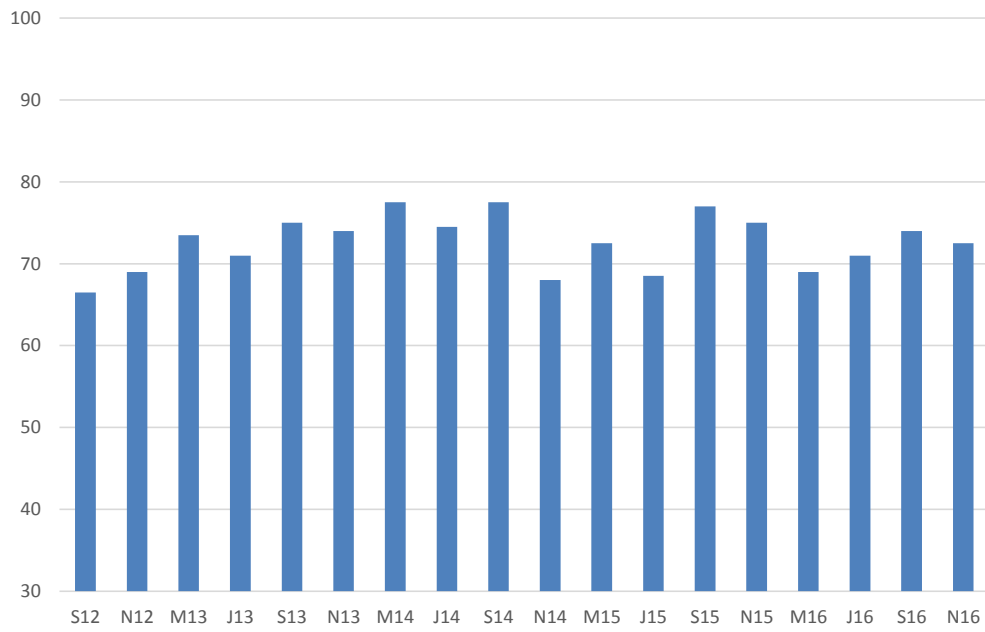
The average mark for all AT examinations sat since 2004 is 72



5. Trends in average examination scores



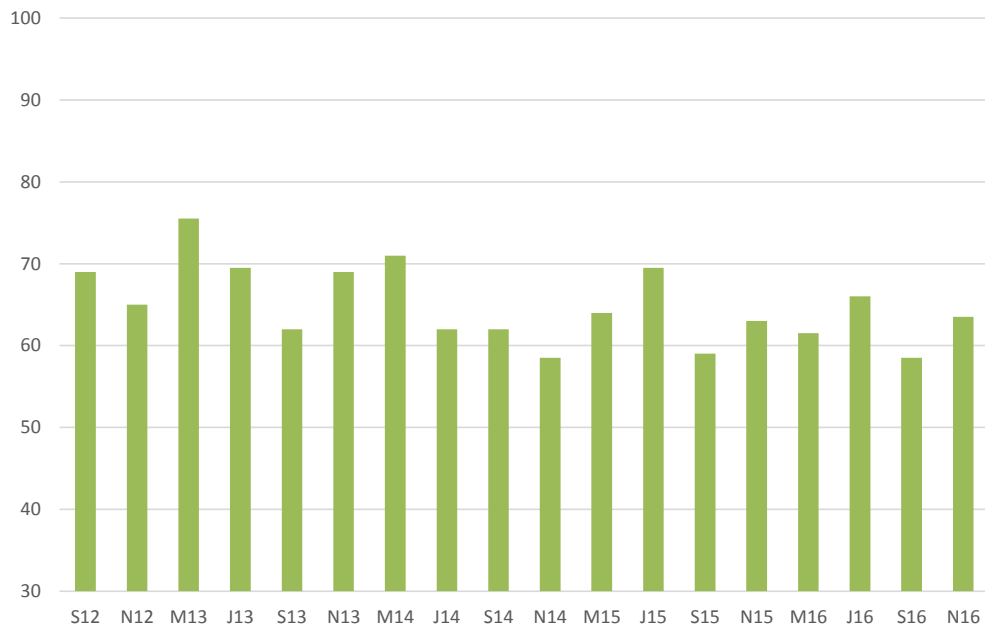
Average examination score - EAS exams



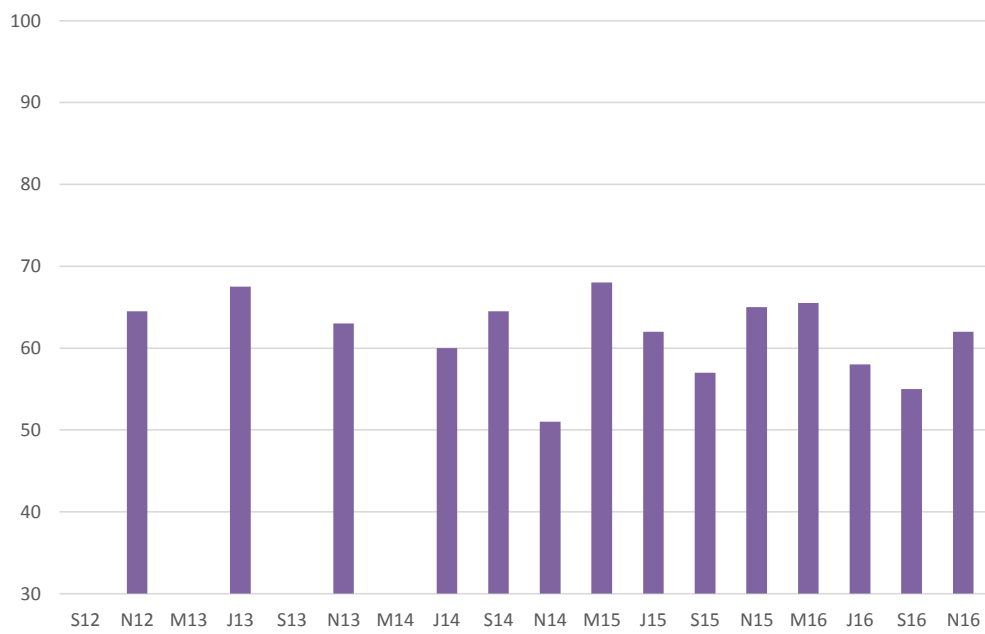
Average examination score - EASQ exams



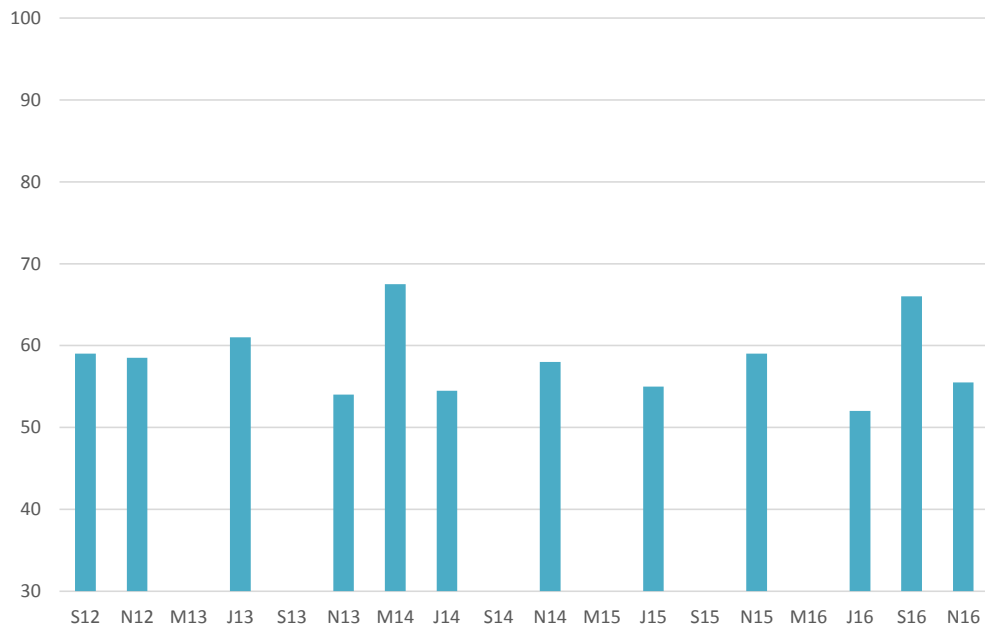
Average examination score - EST exams



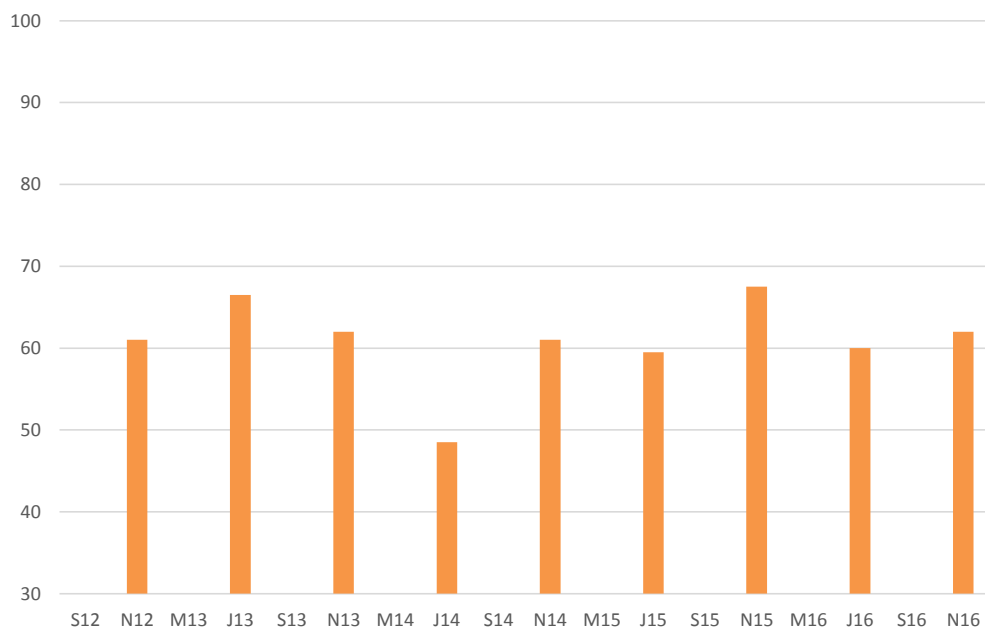
Average examination score - ER exams



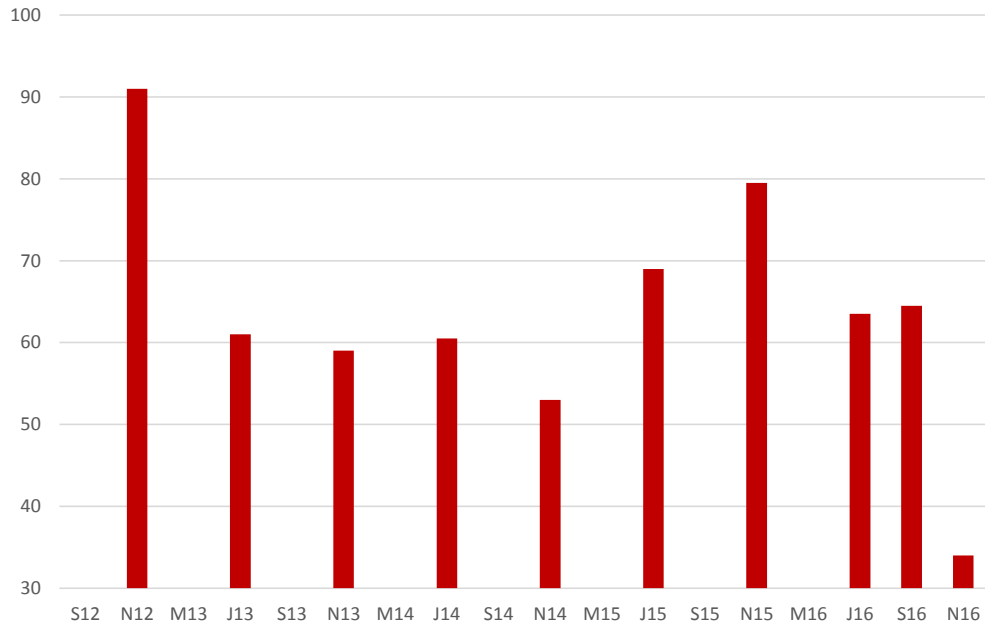
Average examination score - ET exams



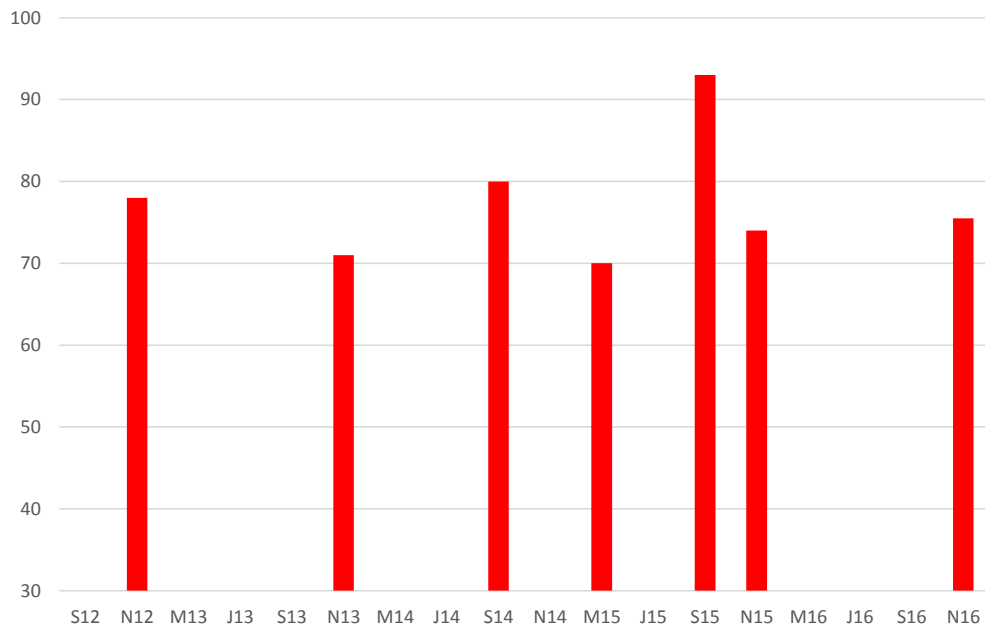
Average examination score - EI exams



Average examination score - EIN exams



Average examination score - AT exams



65. Trends in examination centre pass rates

The examination centre pass rate data is derived from the calendar years 2009 to 2017. The calendar year is used because:

- (a) This coincides with the academic year.
- (b) New Board examination centre codes are issued each calendar year.

The key for the examination centre codes is contained in the appendix. The examination centres shown are:

100
101
102
103
106
107
108
109
111
113
114
115
117
118
120
121
122
123
124
125

* These are centres that operate sporadically, such as the one in the United Kingdom

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If an examination centre is not shown on a chart, this means that that centre did not have candidates sitting that particular examination.

Note that:

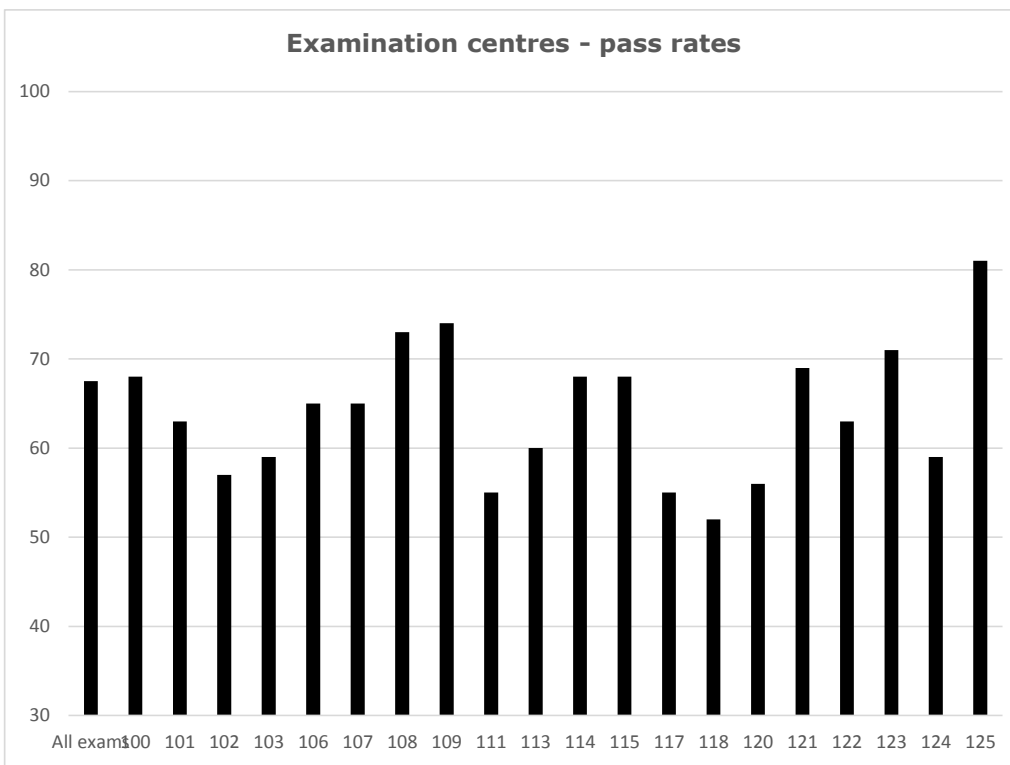
- Some examination centres do not appear on some charts. Those centres did not have candidates in that class of examination over the period in question.
- The "All exams" pass rate shown on the charts is for the period 2009 to date.
- Where a pass rate is very high or very low this is invariably because the candidate numbers involved are very low. An example is examination centre 100 on the Electrician Regulations chart. This centre had one candidate pass out of four candidates in total.

5.1 All examinations

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The Electrician Regulations and Theory examinations are those where the pass rates can vary considerably (particularly the Theory examination). Over time, almost two thirds Electrician Regulations examination candidates will pass, while for the Electrician Theory a little more than half will pass.

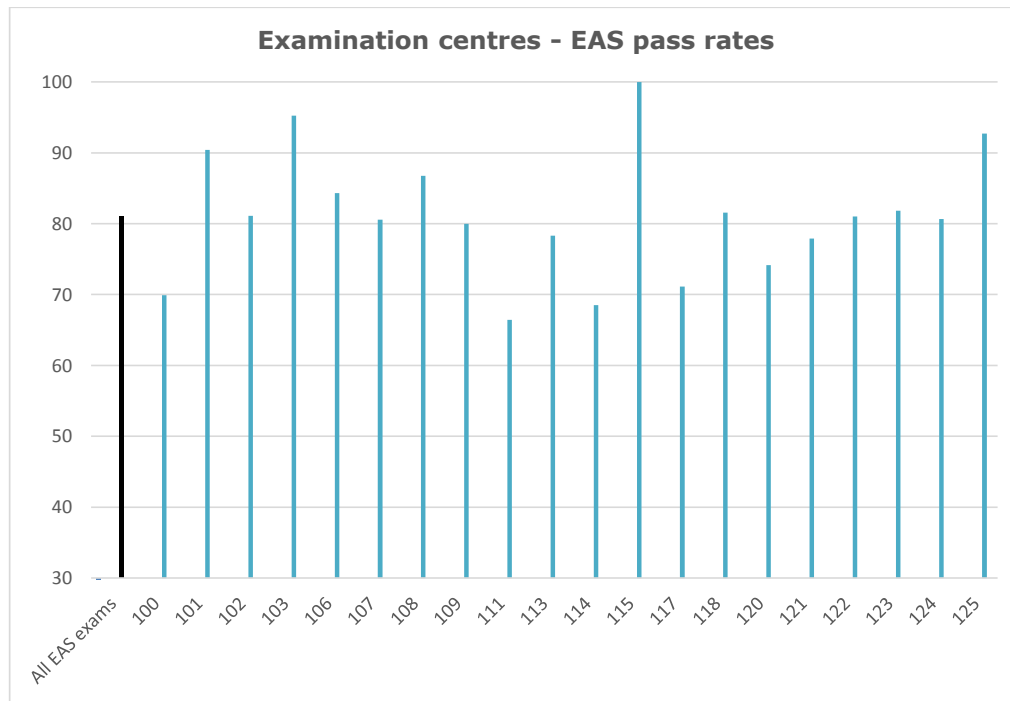
Regardless of the pass rate, examination centres 106, 107, 108, 109 and 125 consistently demonstrate high pass rates well above the overall rates for those two examinations. There are other examination centres who have pass rates consistent with the overall pass rate.



5.2 EAS Examinations

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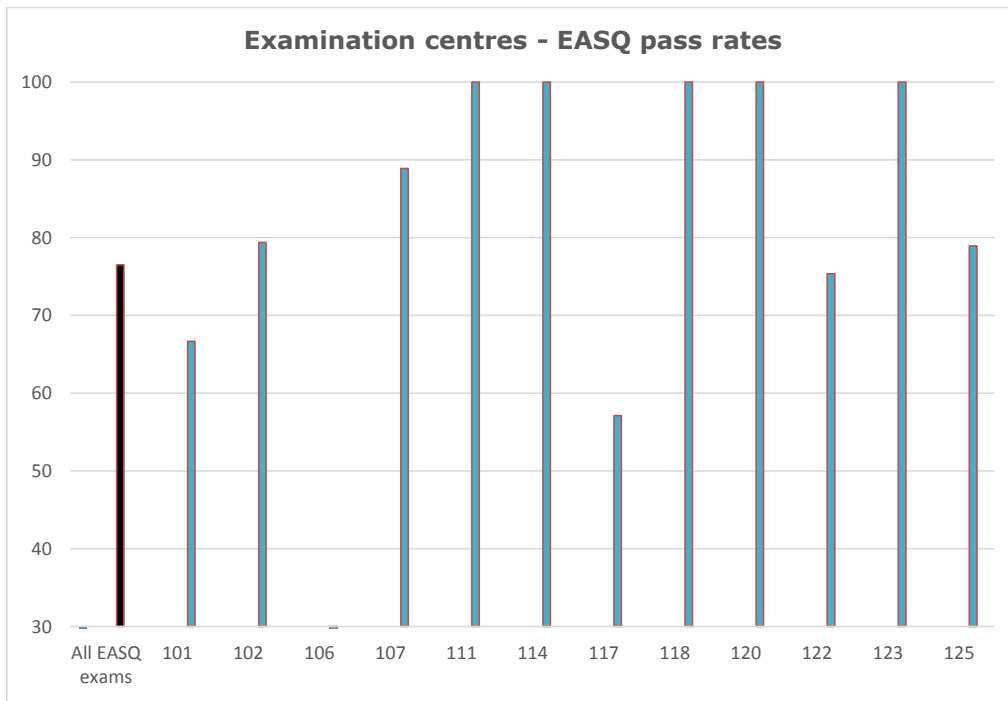
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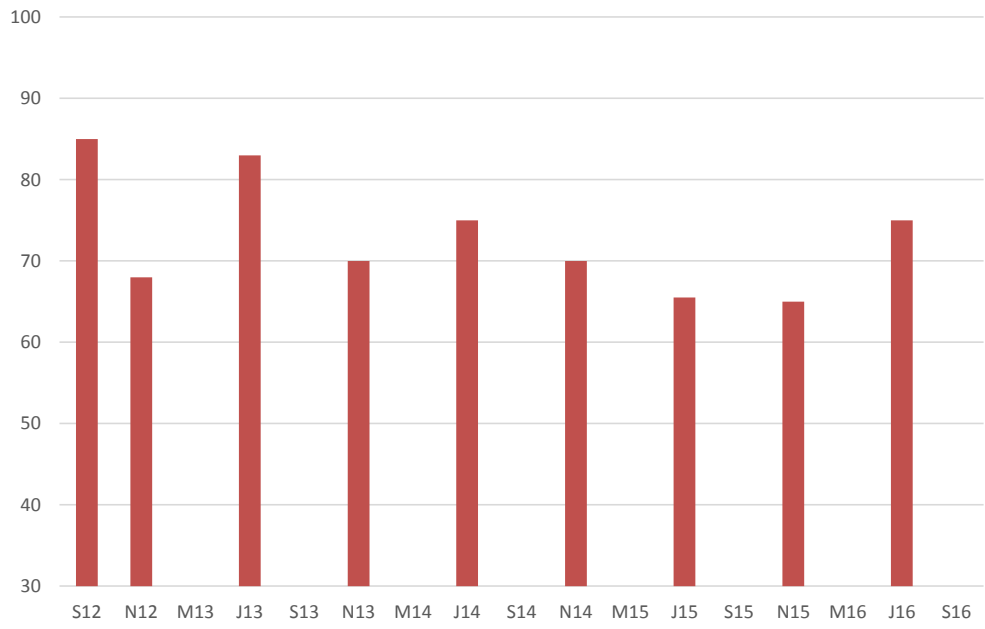
5.3 EASQ Examinations

Examination centre 106 has had one candidate who failed

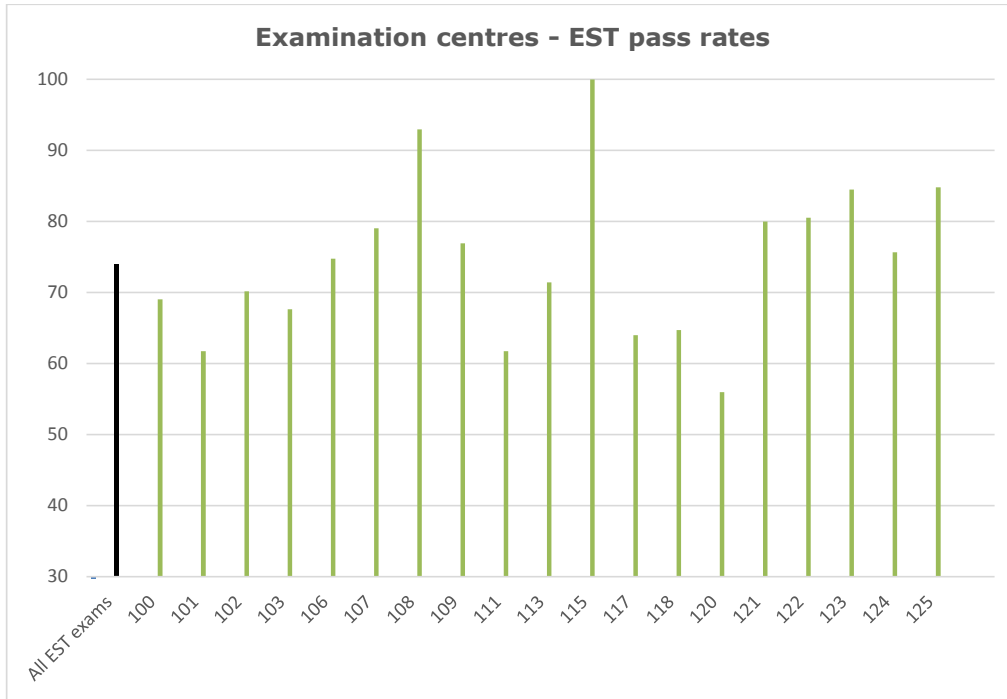
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Average examination score - EASQ exams



5.4 EST Examinations



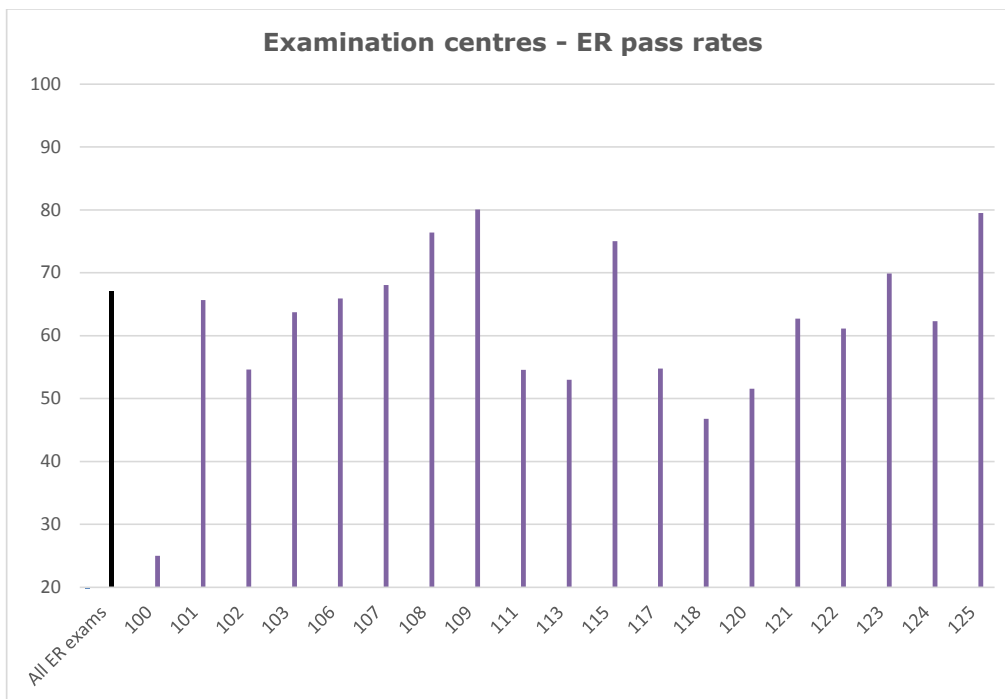
5.5 ER Examinations

The Electrician Regulations and Theory examinations are those where the pass rates can vary considerably.

(particularly the Theory examination).—Over time, almost two-thirds of Electrician Regulations examination candidates will pass the examination, while for the Electrician Theory a little more than half will pass.

There are 6 examination centres that consistently achieve pass rates at or above overall pass rate of 67%. Regardless of the pass rate, examination centres 106, 107, 108, 109 and 125 consistently demonstrate high pass rates well above the overall rates for those two examinations.—There are seven other examination centres that consistently who have pass rates just below 67% consistent with the overall pass rate.

Examination centre 100 has had four candidates two of whom passed.



5.6 ET Examinations

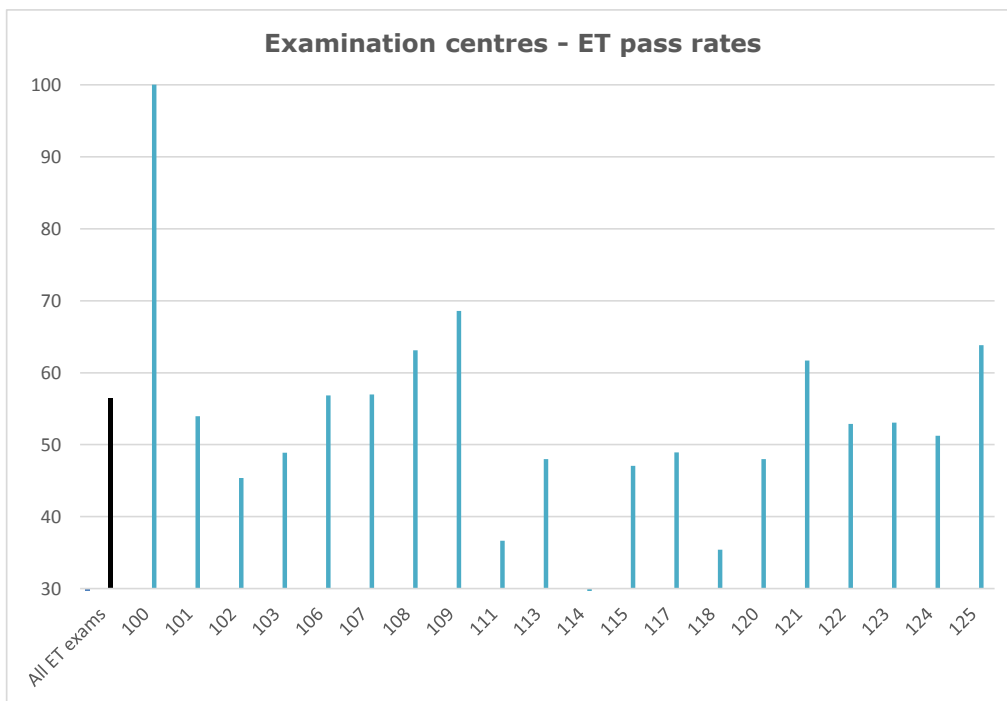
The Electrician Theory examination pass rates can vary considerably.

Over-time, a little more than half of Electrician Theory examination candidates will pass.

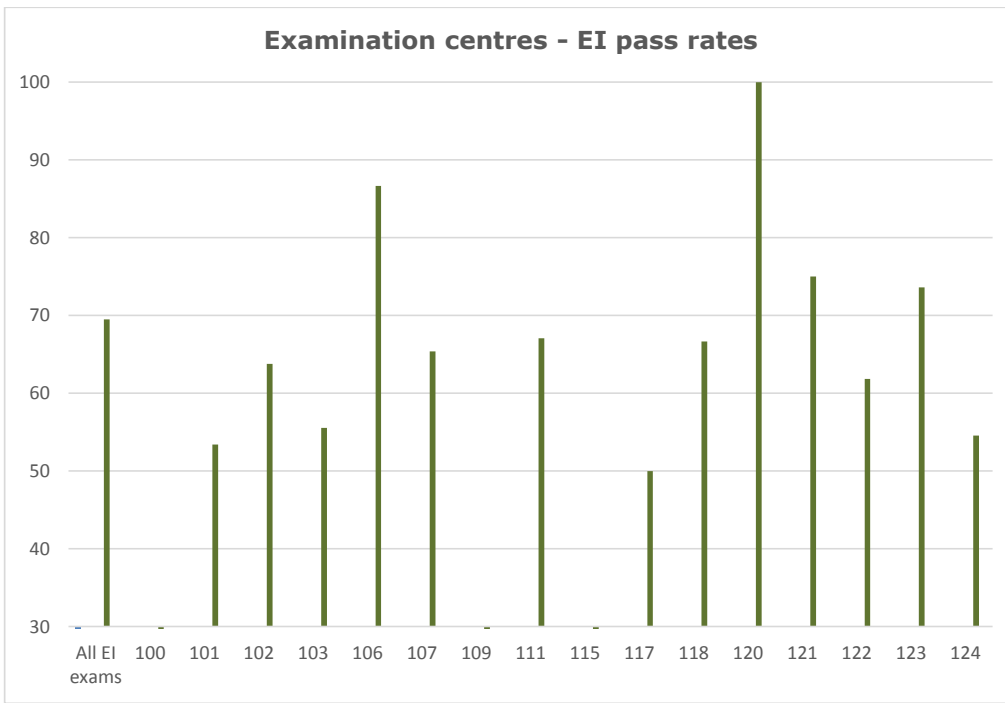
There are 6 examination centres that consistently achieve pass rates at or above overall pass rate of 56.5%.

Examination centre 100 has had two candidates that sat and passed.

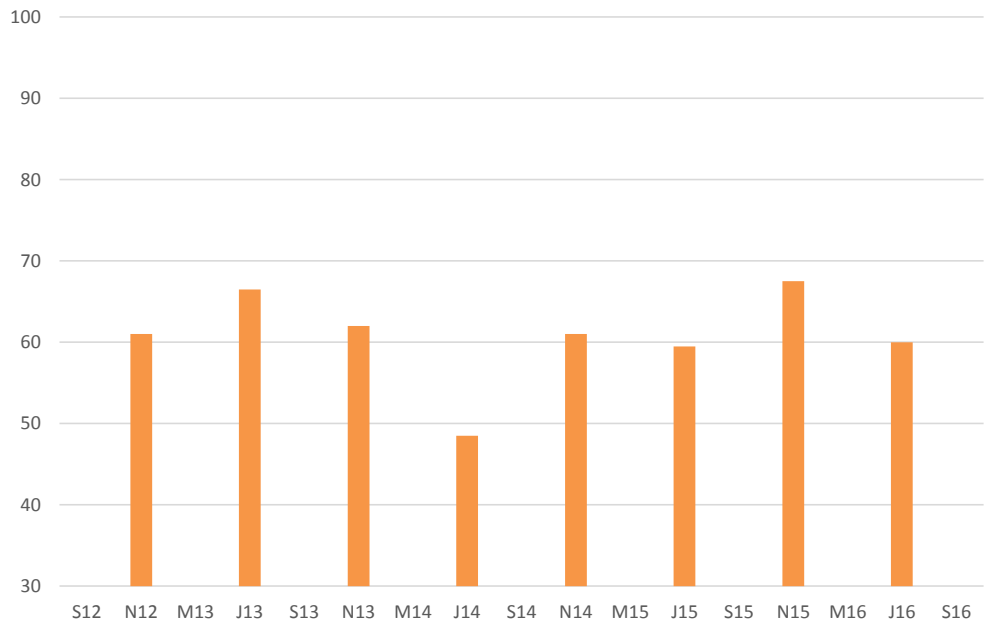
Examination centre 114 has had one candidate that sat and failed.



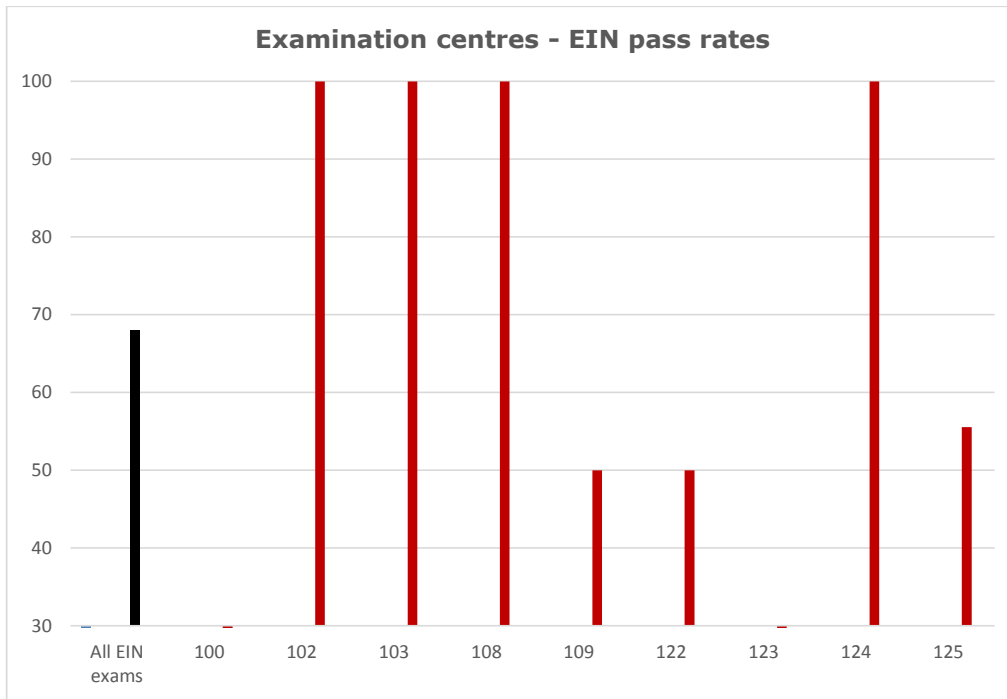
5.7 EI Examinations



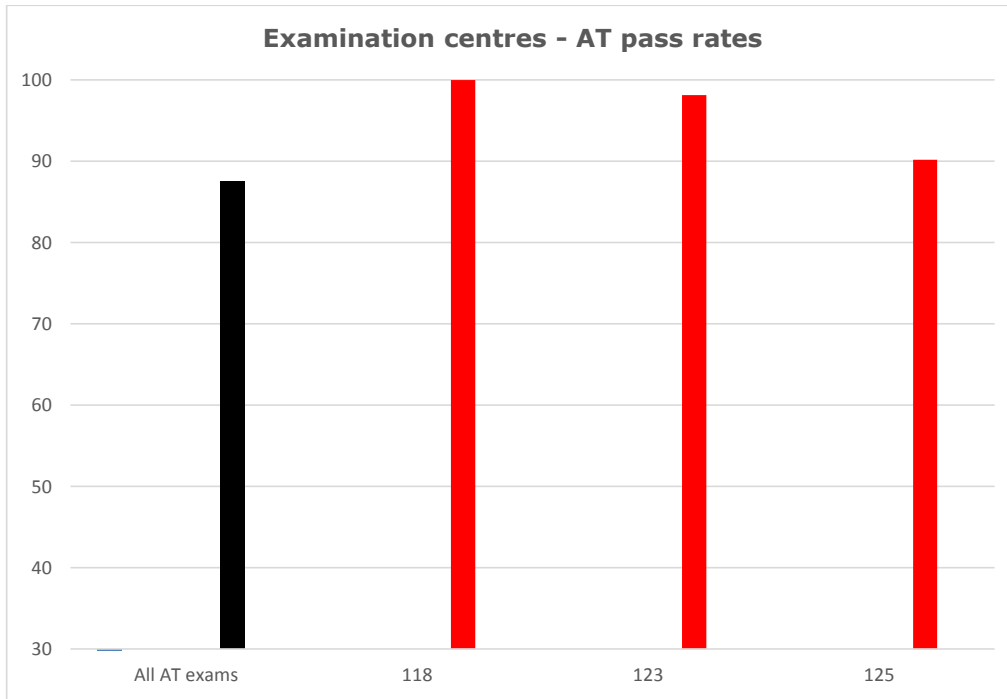
Average examination score - EI exams



5.8 EIN Examinations



5.9 AT Examinations



Appendix 1

Examination Centres

Active Centres

100	Aoraki
101	BOP
102	CPIT
103	EIT
106	ETCO-AU
107	ETCO-DU
108	ETCO-RO
109	ETCO-WE
111	MIT
113	Northtec
114	Otago
115	Others (DUGT-ETC)
117	SIT-CH
118	SIT-IN
120	Unitec
121	UCOL
122	Wintec
123	Weltec
124	WITT
125	E-TEC

Non-active Centres

104	Electec-CH
105	Electec-AU
110	John-Turner
112	Napier-Boys
116	RNZAF
119	Tairāwhiti
126	RNZN

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Appendix 2

Electrician Theory Examination Pass Rates

1992 to 2017

This graph shows the pass rate for each Electrician Theory examination since 1992.

Note that:

- Between 1992 and 1998 these were Trade Certificate examinations with a pass mark of 50%.
- Between 1999 and (about) 2002 the examinations were conducted by NZQA.
- The results for the 2002 and 2003 June examinations are not known.

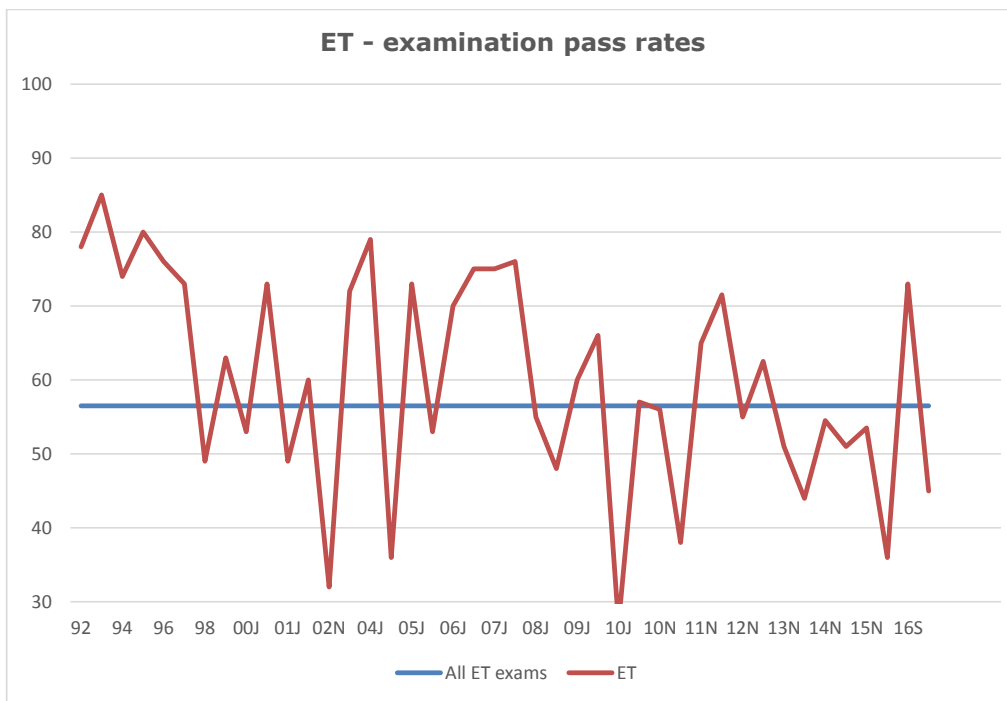
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Trade Certificate Theory		
Date	Pass-mark	Pass-rate
1992	50%	78%
1993	50%	85%
1994	50%	74%
1995	50%	80%
1996	50%	76%
1997	50%	73%
1998	50%	49%

Electrician Theory		
1999-Nov	60%	63%
2000-June	60%	53%
2000-Nov	60%	73%
2001-June	60%	49%
2001-Nov	60%	60%
2002-June	60%	
2002-Nov	60%	32%
2003-June	60%	
2003-Nov	60%	72%
2004-June	60%	79%
2004-Nov	60%	36%
2005-June	60%	73%
2005-Nov	60%	53%
2006-June	60%	70%
2006-Nov	60%	75%
2007-June	60%	75%
2007-Nov	60%	76%
2008-June	60%	55%
2008-Nov	60%	48%
2009-June	60%	60%
2009-Nov	60%	66%
2010-June	60%	27%
2010-Sep	60%	57%
2010-Nov	60%	56%
2011-Jun	60%	38%

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Electrician Theory		
2011-Nov	60%	65%
2012-Jun	60%	71.5%
2012-Nov	60%	55%
2013-Jun	60%	62.5%
2013-Nov	60%	51%
2014-Jun	60%	44%
2014-Nov	60%	54.5%
2015-Jun	60%	51%
2015-Nov	60%	53.5%
2017-Jun	60%	36%
2017-Sep	60%	73%
2017-Nov	60%	

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