



November 2016 Examinations



Electrical Workers Registration Board.



1. Overview – November 2016 examinations

	Number of candidates sitting exam	Number who passes exam	Pass rate %	Average score	Median score
Electrical Appliance Serviceperson (EAS)	67	52	76	72.5	78
Electrical Appliance Serviceperson (Qualified) (EASQ)	49	41	83.5	77	83
Electrical Service Technician (EST)	212	136	64	63.5	66
Electrician Regulations (ER)	776	502	65	62	63
Electrician Theory (ET)	770	347	45	55.5	55.5
Electrical Inspector (EI)	60	41	68	62	62
Electrical Installer (EIN)	1	0	0	34	34
Associated Tradesperson (AT)	20	19	95	75.5	74
TOTAL	1955	1138	58	63	64.5

2. Issues of interest – November 2016

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 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>	

Electrical Appliance Serviceperson

Comment	Suggestion or recommendation for Board consideration
<p>The pass rate of 76% is consistent with other EAS examinations.</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.	Nil

Electrical Appliance Serviceperson (Qualified)

Comment	Suggestion or recommendation for Board consideration
<p>The pass rate of 83.5% is a major improvement of recent EASQ examinations.</p> <p>One candidate gained 100 marks.</p> <p>Markers comments:</p> <p>Comments for the EAS examination apply also to this examination.</p>	

Electrical Service Technician

Comment	Suggestion or recommendation for Board consideration
<p>The pass rate of 64% is an average result for this examination.</p> <p>Markers comments</p> <p>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.</p> <p>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.</p> <p>Moderation was generally well done. However, the following present themselves.</p> <p>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.</p>	

Electrician Regulations

Comment	Suggestion or recommendation for Board consideration
<p>The pass rate of 65% is what is expected from this examination.</p> <p>There were 4 examinations in the November period:</p> <p>9 October 1 candidate (passed) 6 November 5 candidates (all passed) 26 November 764 candidates (492 passed) 4 December 6 candidates (4 passed)</p> <p><u>Markers comments – ER 83</u></p> <p>The pass rate was 64%.</p> <p>This was a good examination paper with some challenging questions for the candidates on both regulations and standards.</p> <p>Like most Regulations examinations there are various interpretations in the approach the candidate may take in analysing the question.</p> <p>Numerous changes or variations were made to the answer schedule, some of course prompted by answers received from candidates.</p> <p>Two aspect causes some concern as candidates are expecting to be registered.</p> <ul style="list-style-type: none"> • Apparent lack of preparedness for exam. • It is obvious that many candidates can locate and copy the correct text from a standard, but seem lost when required to explain why a particular requirement applies. 	

Electrician Theory

Comment	Suggestion or recommendation for Board consideration
<p>The pass rate of 45% for this examination was again disappointing.</p> <p>The pass rates for Electrician Theory examinations have been very variable for the last 25 years. Even back to when the examinations were conducted by the Trades Certification Board.</p> <p>As Chief Examiner, I would be very concerned if this pass rate applied across all examination centres but this is not the case. There are 6 centres (106, 107, 108, 109, 121 and 125) that consistently achieve pass rates well above the average.</p> <p>In addition, there are 3 other examination centres (101, 122, and 123) that achieve pass rates at or near the average.</p> <p>This indicates that there does not seem to be any problem with the examinations per se. Earlier analysis carried out when a low pass rate occurred did not show any topic or question with which candidates had a difficulty. It seems that with a given examination all topics pose difficulty for most of the candidates.</p> <p>The Board could take initiatives to counter low pass rates. This could include (either individually or together):</p> <ul style="list-style-type: none"> • Making the examination open-book • Having a qualifying examination(s) that a candidate must pass before progressing towards the final examination. • Limiting the scope of the topics from the guidelines that would be examined to those the Board considered fundamental. • Moving to one theory/regulations examination as is done with capstone testing in Australia. Note that all Board examinations – Electricians’ aside – are this type of examination • Scale the marks. For this examination, to achieve a 50% pass rate the lowest mark would be 56. To achieve a 60% pass rate 	<p>The Board seek feedback from industry as to why they think the pass rates for this examination are low and ask for any solutions they may have.</p>

Comment	Suggestion or recommendation for Board consideration
<p>the lowest mark would be 51. No Board exam has ever been scaled.</p> <p>However, I do not believe that the Board can solve this problem in isolation. To my knowledge, no feedback has ever been received by the Board on this examination – even when the pass rate was low. Feedback is needed from industry to ascertain how they view what is happening and what their solutions might be.</p> <p><u>Markers comments</u></p> <p>The examination paper was pitched at the correct level. Overall it was a fair and balanced paper in which some candidate gained high marks. For example, one marker marked 90 papers and 37 candidates passed. The average mark for those who passed was 73%.</p> <p>There were some issues with the moderation with a number of changes required to the answer schedule, although this does not have appeared to affected a candidate’s ability to provide a response.</p> <p>It is very noticeable that some examination centres (but only a limited number) show a high level of competency in all subjects examined, thus are able to achieve high pass rates.</p>	

Electrical Inspector

Comment	Suggestion or recommendation for Board consideration
<p>The pass rate of 68% is consistent with previous examinations.</p> <p>One candidate gained 90 marks while another gained 94 which are fine achievements. Of the 1630 candidates who have sat this examination from 2003 to date only 36 have gained 90 marks or more.</p> <p>Few changes were required to the answer schedule for this examination.</p> <p>The calculation questions posed difficulty for many candidates. For example, question 3 related to calculating the maximum demand of a three-phase installation. In this question</p> <ul style="list-style-type: none"> • 3 candidates gained 10 marks • 9 candidates gained 6 marks • 1 candidate gained 5 marks • 18 candidates gained between 1 and 4 marks. • 29 candidates gained no marks 	<p>Nil</p>

Electrical Installer

Comment	Suggestion or recommendation for Board consideration
<p>One candidate sat and failed this examination.</p>	

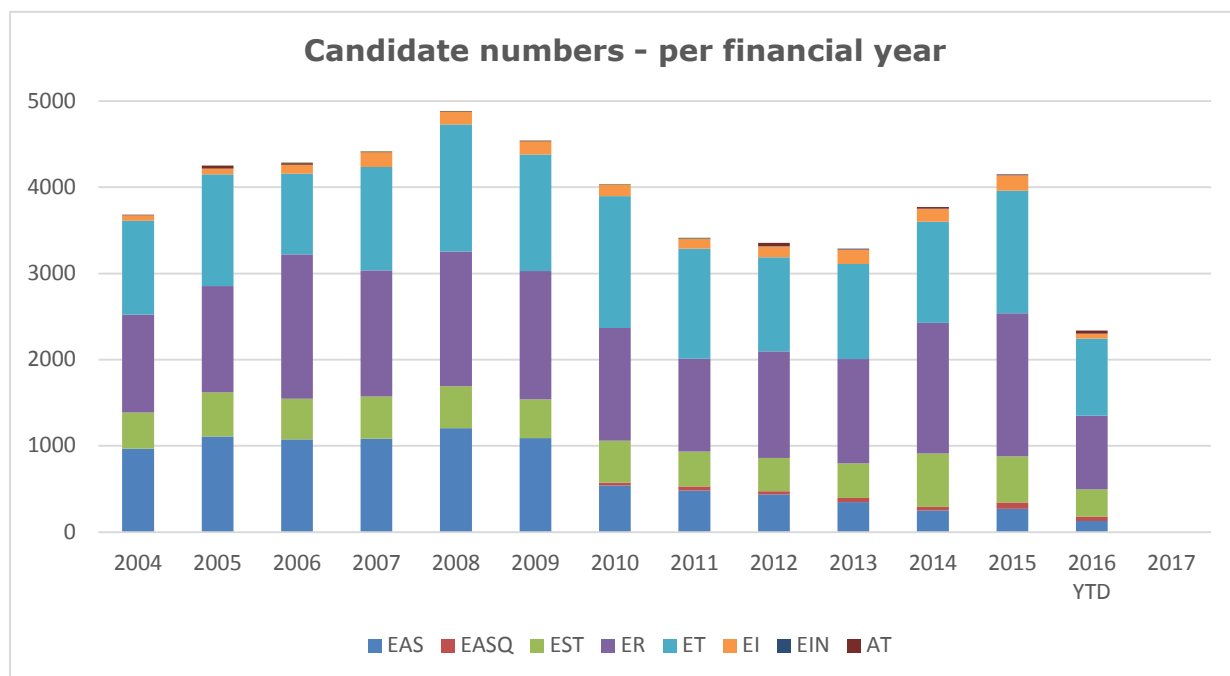
Associated Tradesperson

Comment	Suggestion or recommendation for Board consideration
<p><u>8 October examination</u> 10 plumber gasfitter candidates sat and 9 passed 2 plumber candidates sat and both passed</p> <p><u>29 October examination</u> 8 plumber candidates sat and all passed</p>	

3. Trends in examination candidate numbers

3.1 Per year

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

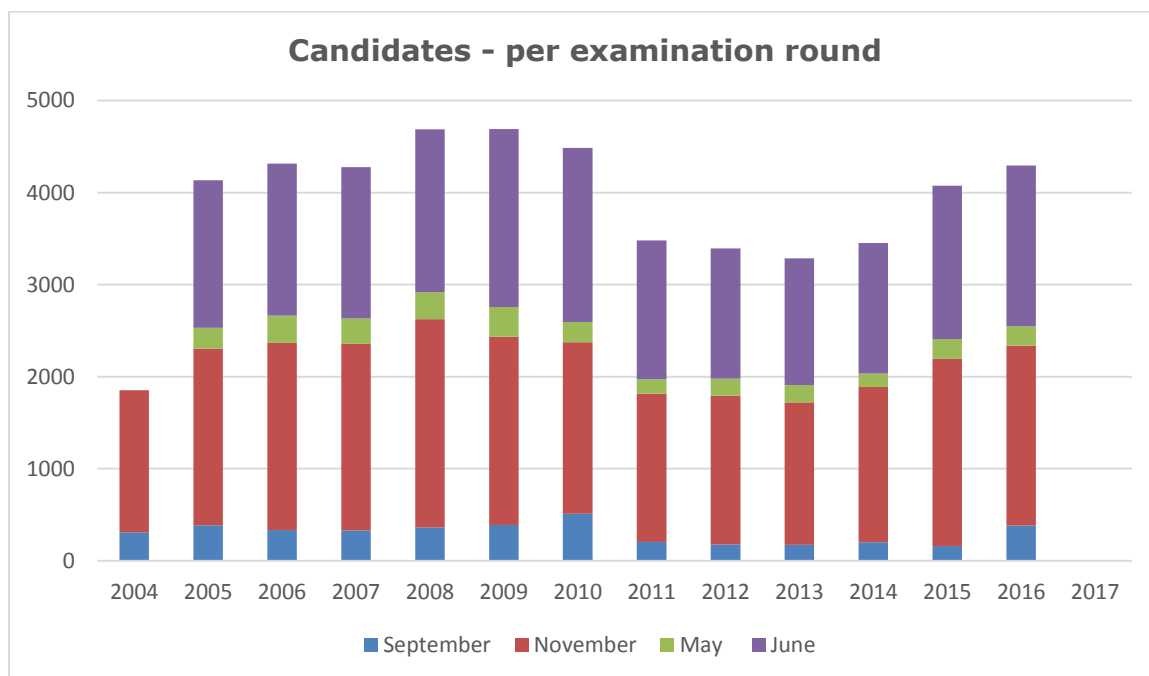


	EAS	EASQ	EST	ER	ET	EI	EIN	AT	ES	Total
2004	969		419	1135	1087	63		10		3683
2005	1110		510	1234	1295	68		35	1	4253
2006	1074		472	1675	937	104		17	9	4288
2007	1084		488	1464	1198	172		3	9	4418
2008	1205		486	1563	1475	146		8	1	4884
2009	1090		448	1490	1351	153		7	6	4545
2010	540	34	487	1308	1530	131	3		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	1103	170	5	2		3286
2014	250	42	618	1515	1176	147	4	18		3770
2015	269	74	537	1660	1420	178	3	10		4151
2016 YTD	130	49	317	853	896	60	1	32		2338
Total	8988	330	5974	17420	15838	1630	25	181	40	50426

3.2 Per examination round

On average, in each year:

- May candidates comprise 5.5% of the yearly total
- June candidates comprise 40.5% of the yearly total.
- November candidates comprise 8% of the yearly total.
- November candidates comprise 46% of the yearly total.



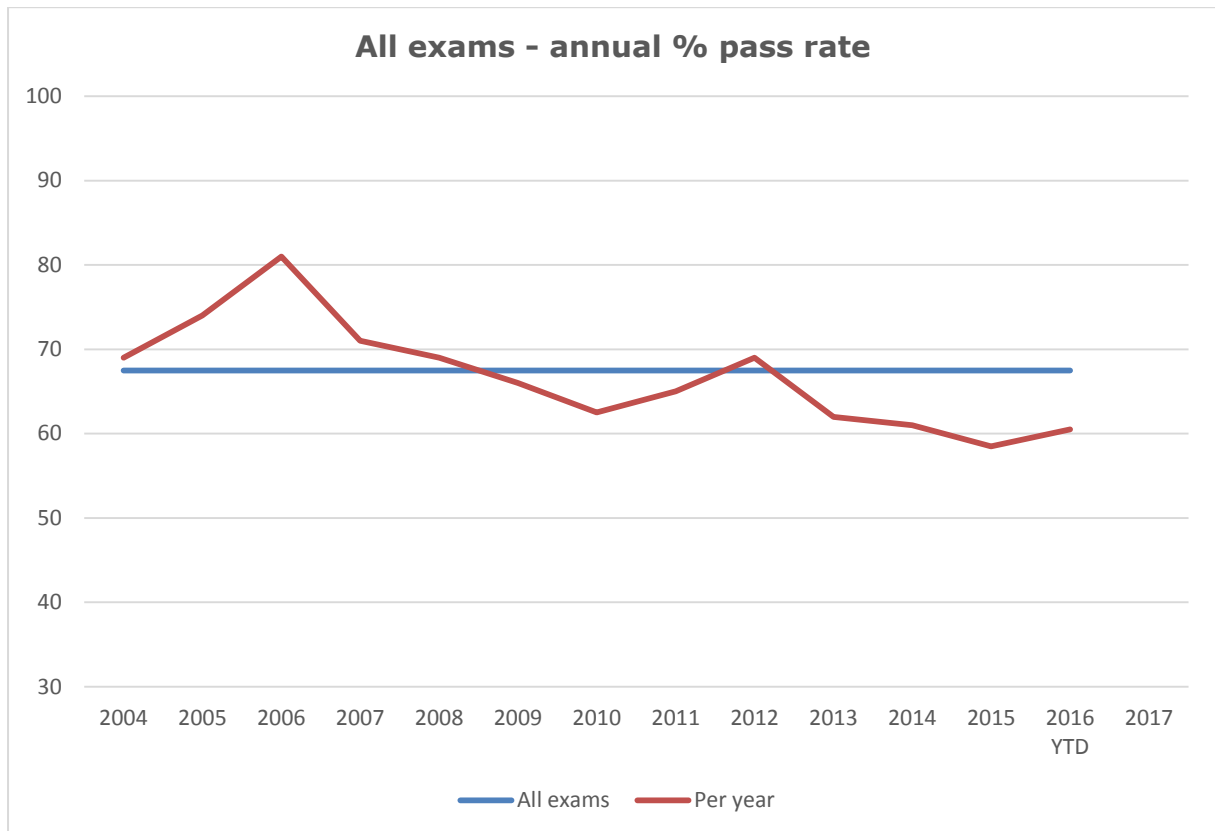
	September	November	May	June	Total
2004	308	1547			1855
2005	387	1918	227	1601	4133
2006	334	2035	295	1653	4317
2007	330	2027	276	1643	4276
2008	362	2263	293	1768	4686
2009	391	2042	326	1932	4691
2010	513	1861	221	1891	4486
2011	207	1608	155	1511	3481
2012	178	1617	185	1413	3393
2013	173	1550	187	1375	3285
2014	202	1687	144	1420	3453
2015	161	2032	218	1663	4074
2016	383	1955	212	1746	4296
2017					
	3929	24142	2739	19616	50426

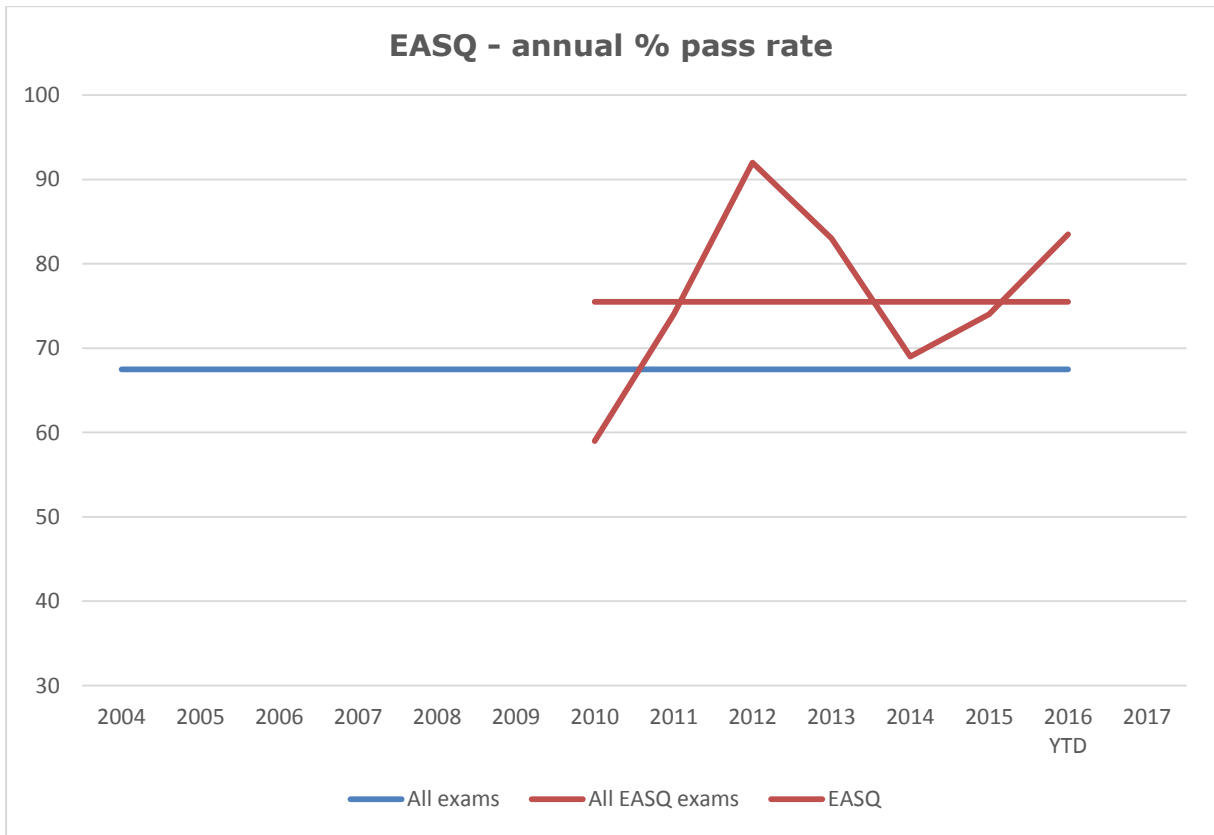
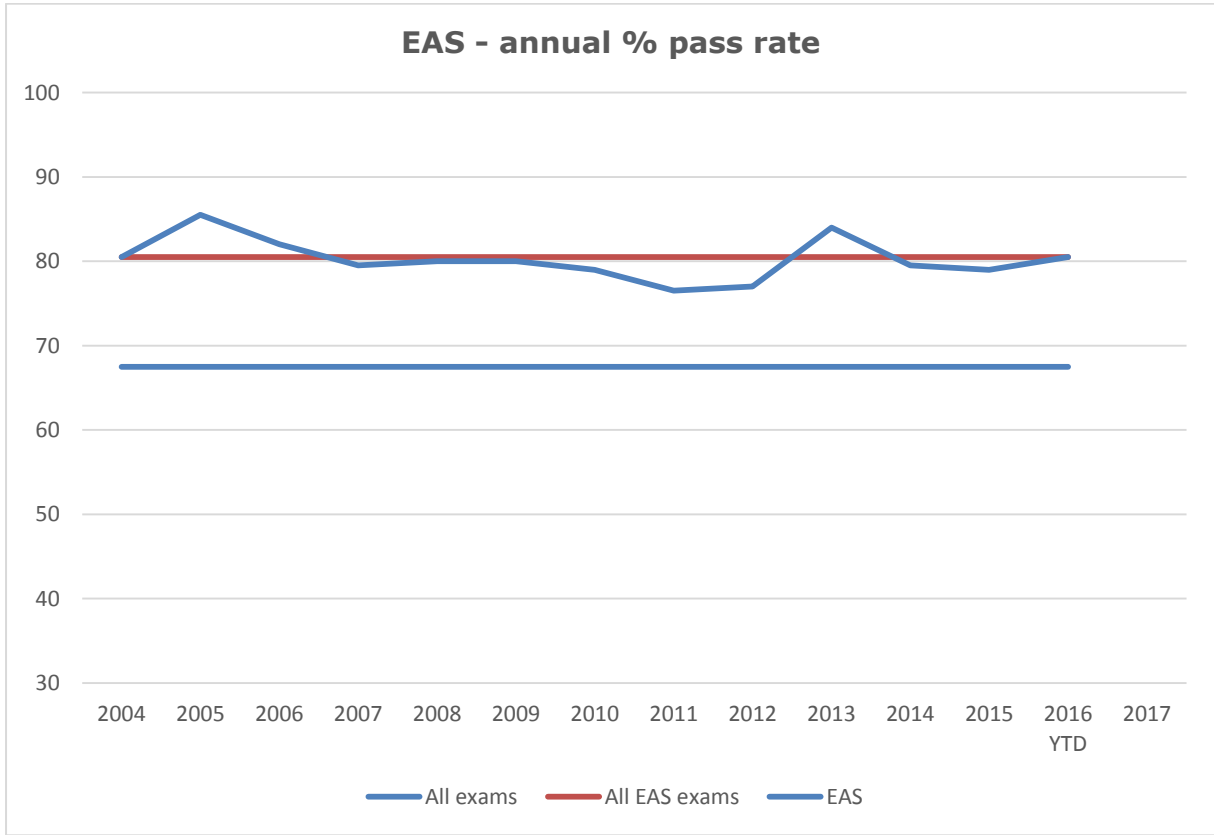
4. Trends in candidate pass rates

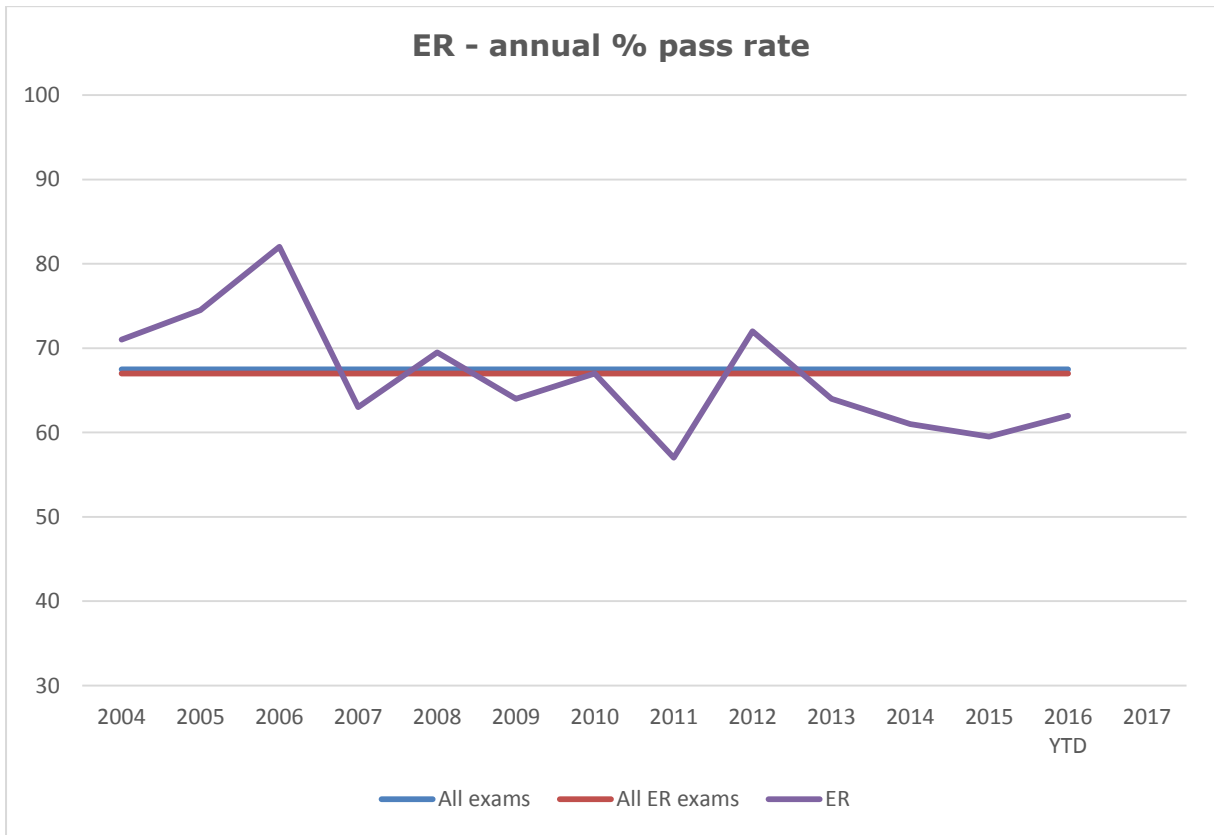
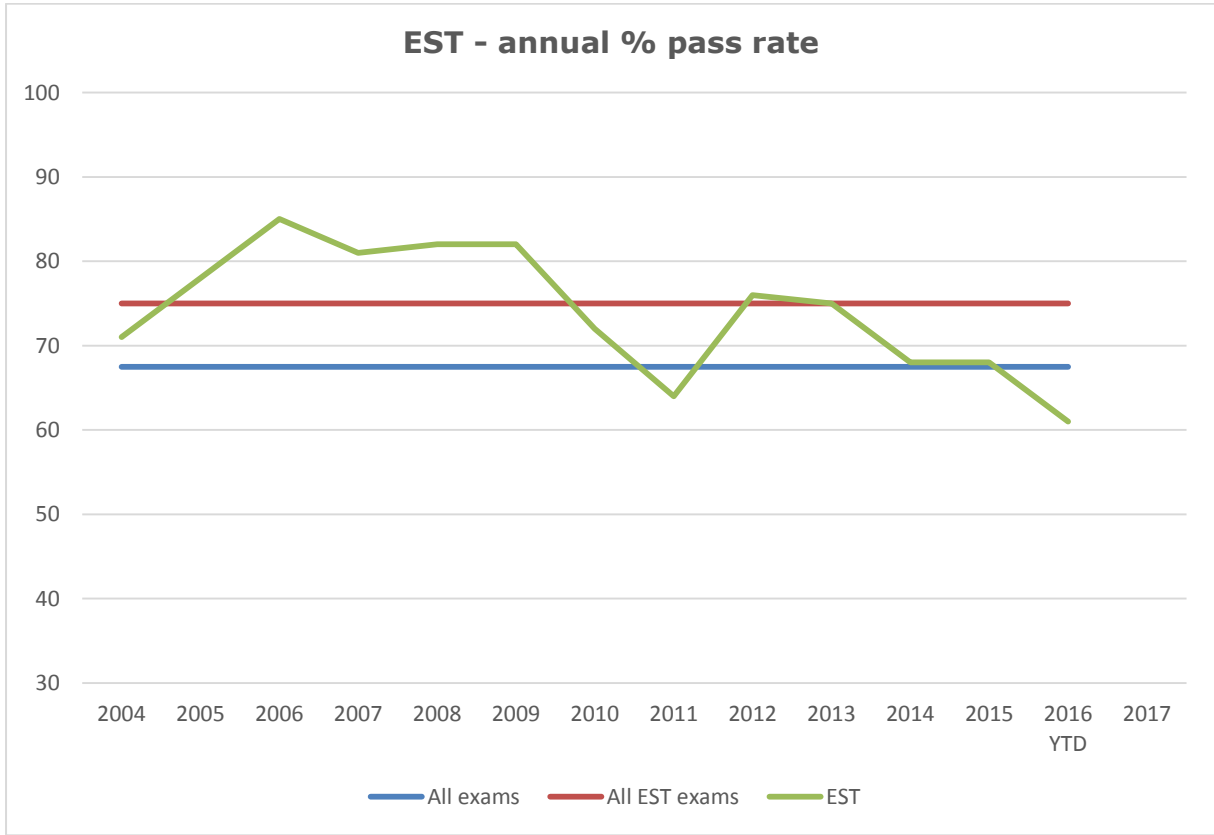
Annual % pass rates

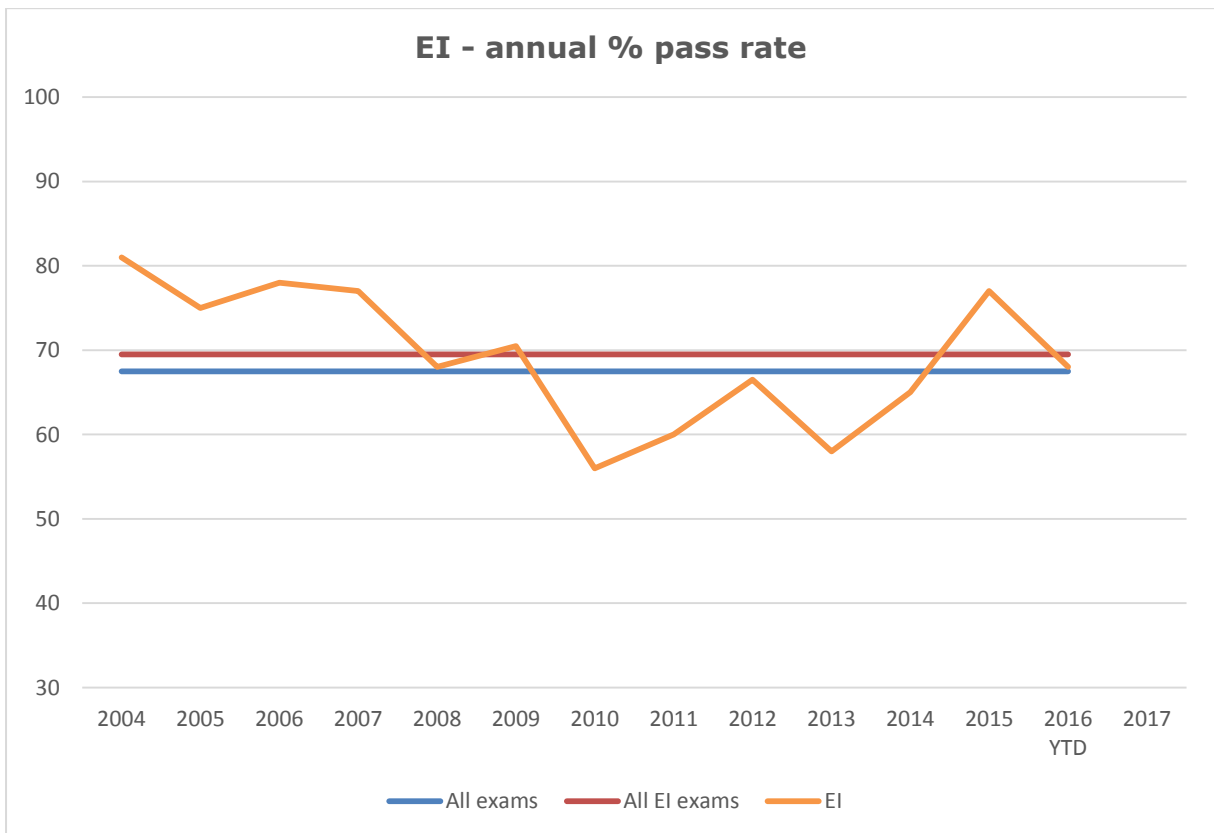
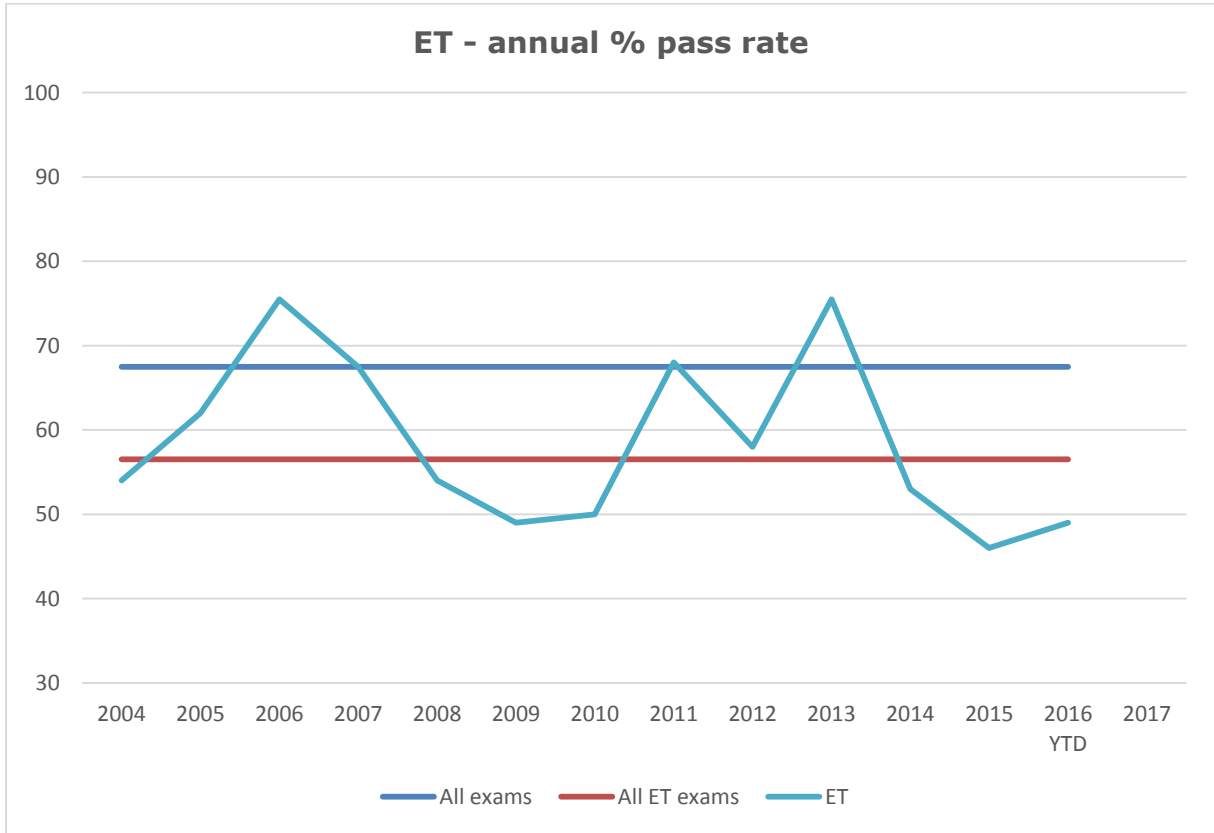
For EASQ, EIN and AT examinations the candidate numbers are too small to gauge an indication of a trend.

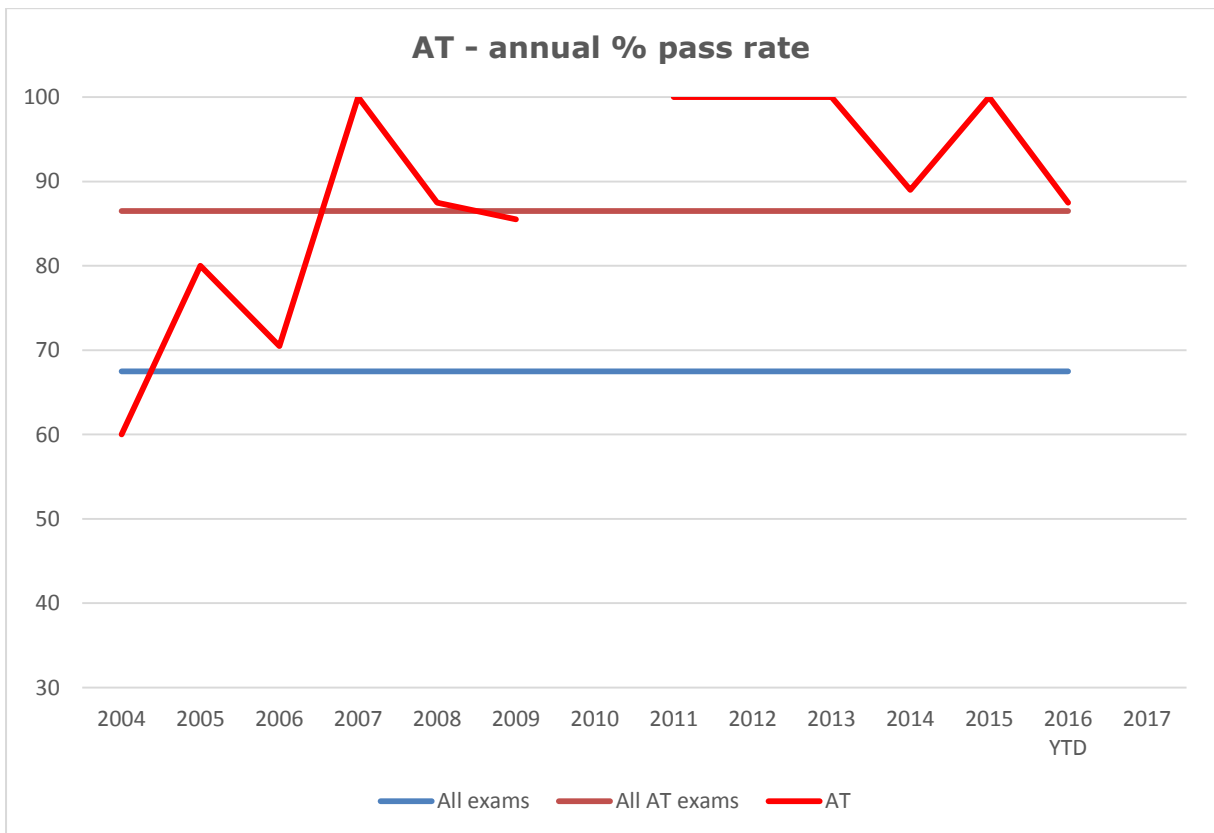
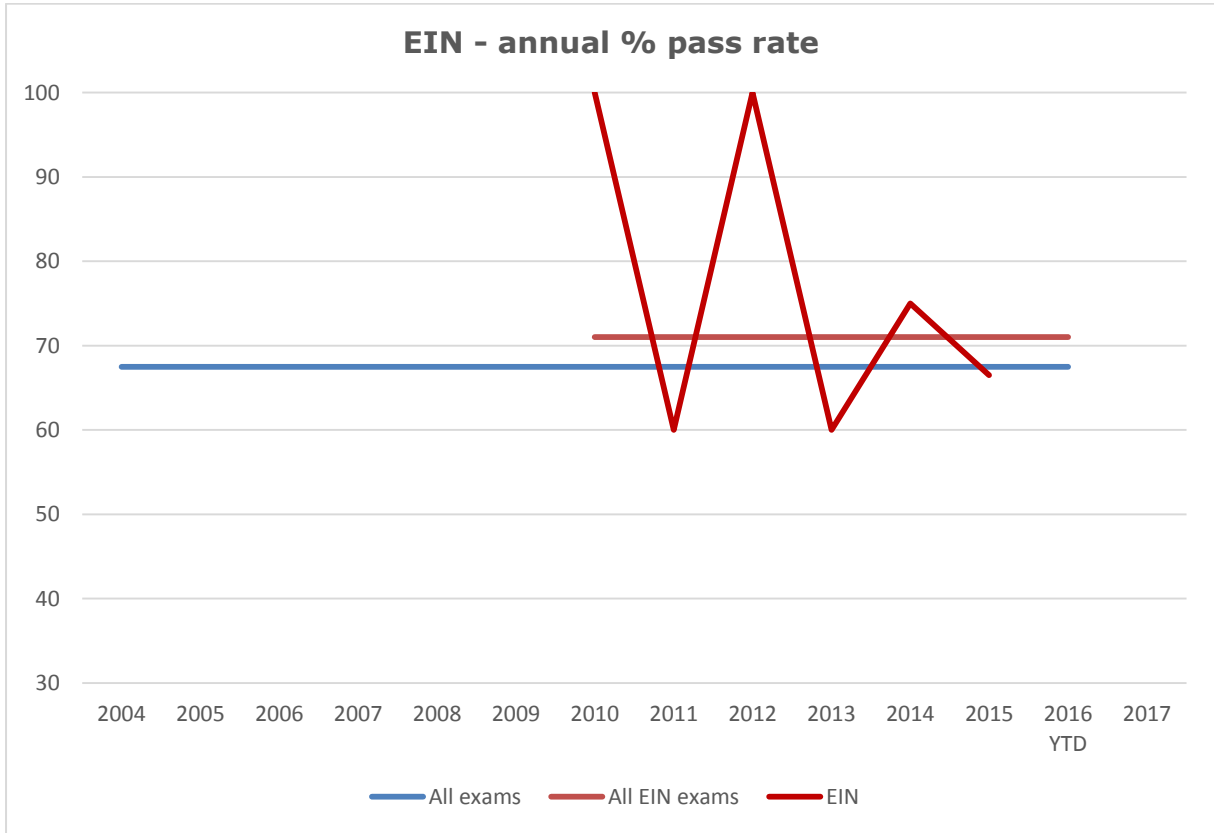
The overall pass rate for all examinations sat since 2004 is 67.5%. All classes of examination, except for Electrician Theory, have overall pass rates at or above 67.5%. The overall pass rate for Electrician Theory examinations since 2004 is 56.5%.



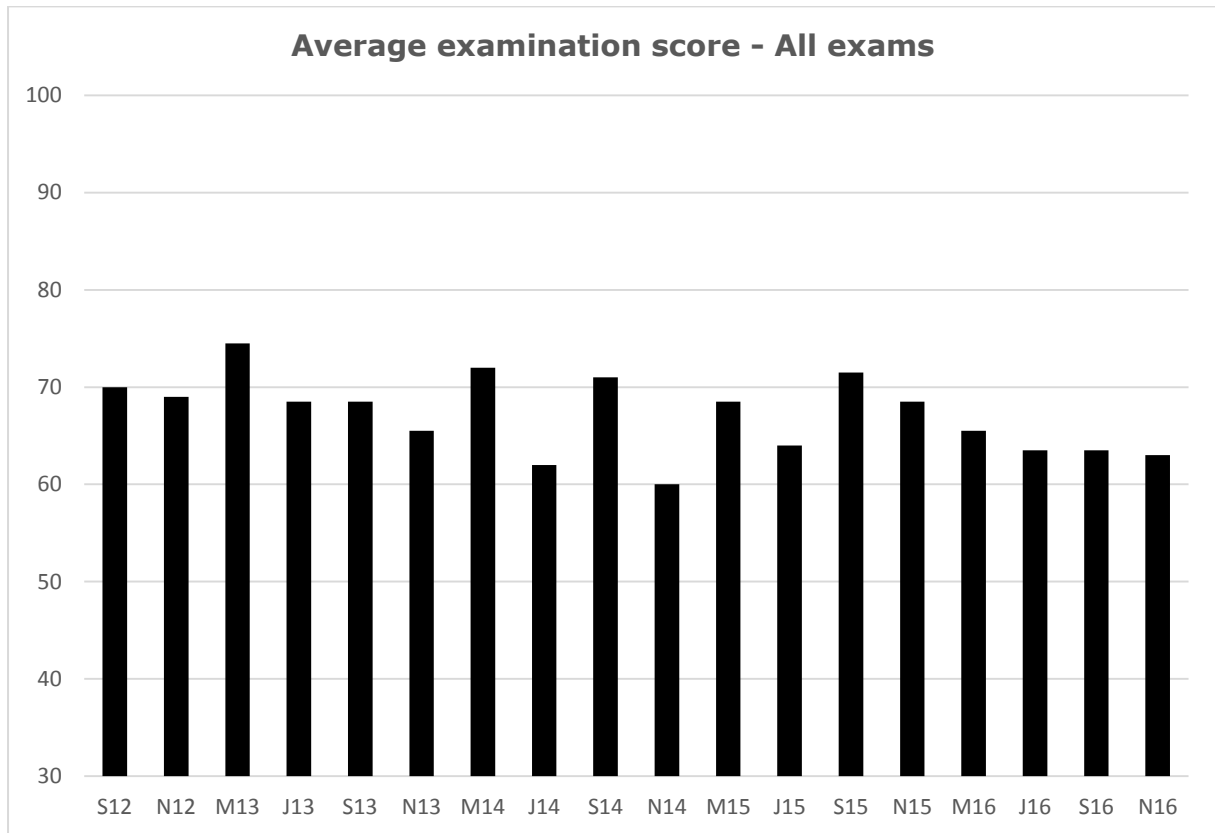


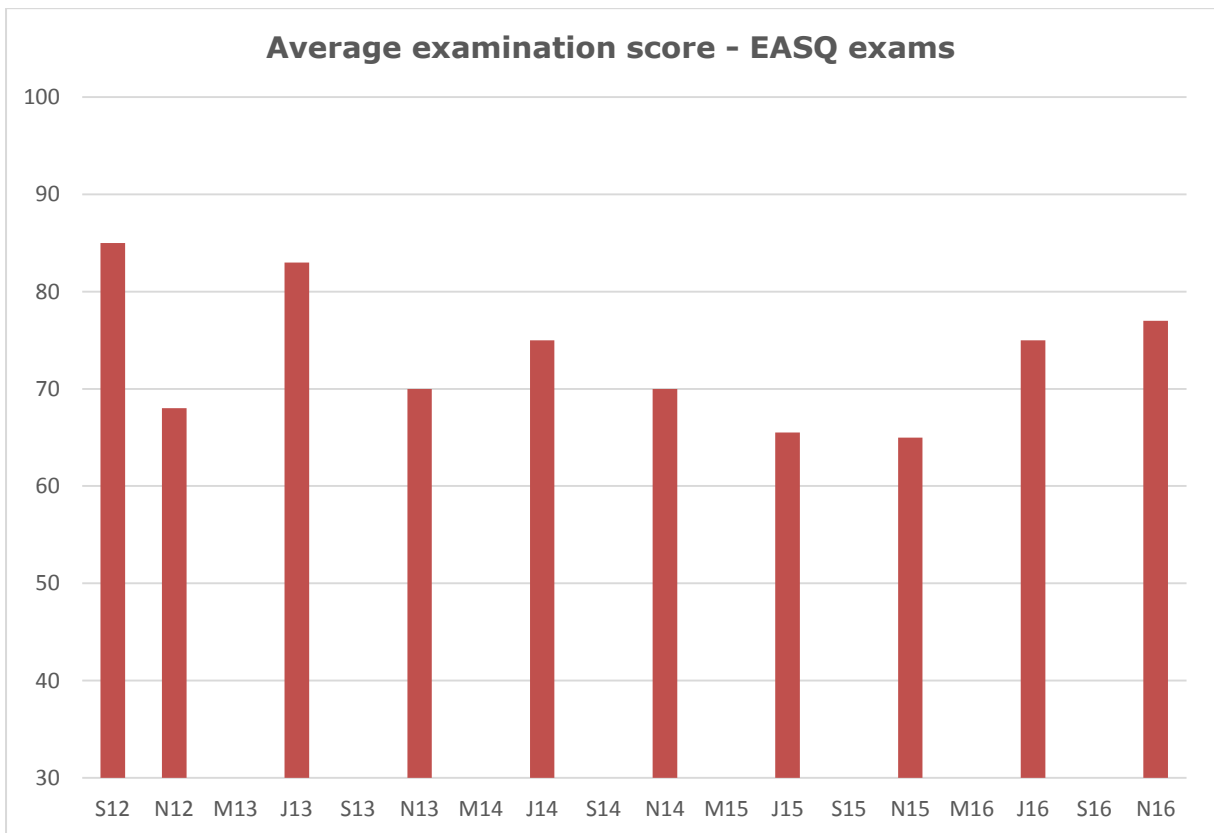
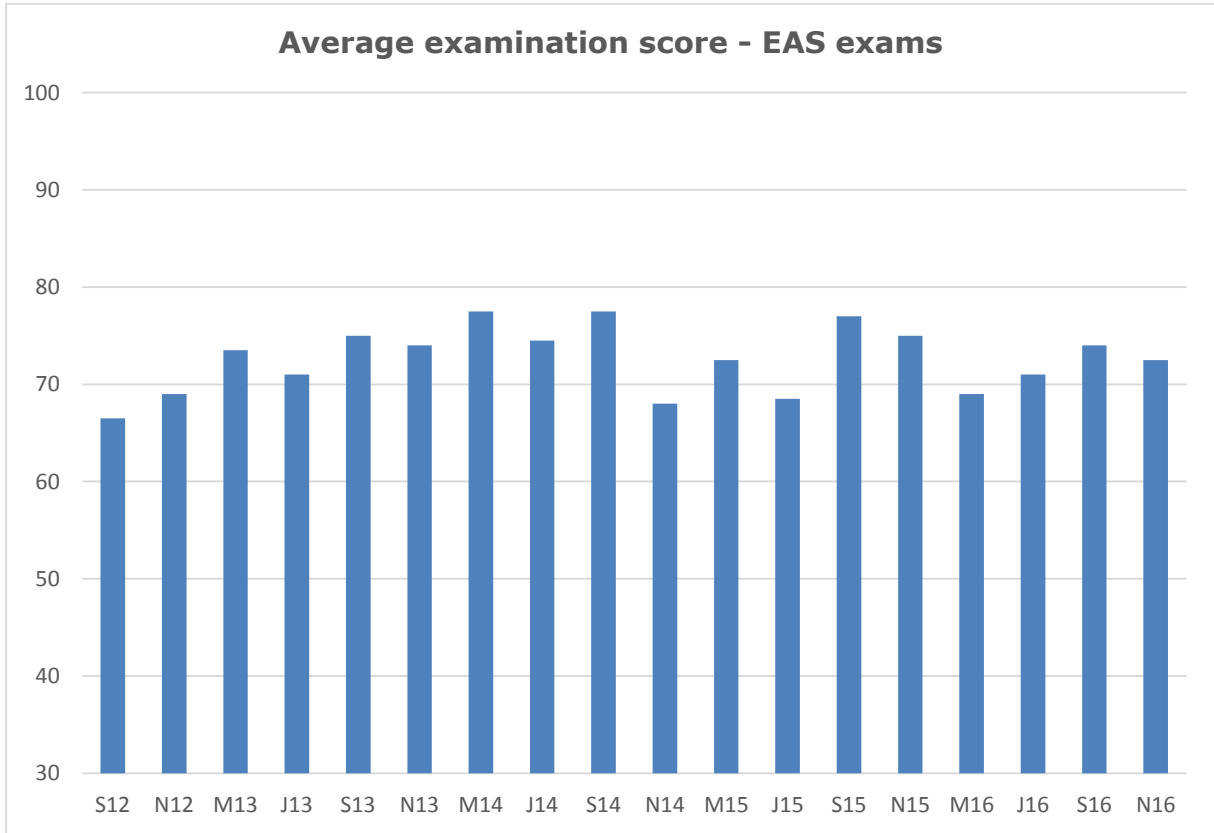


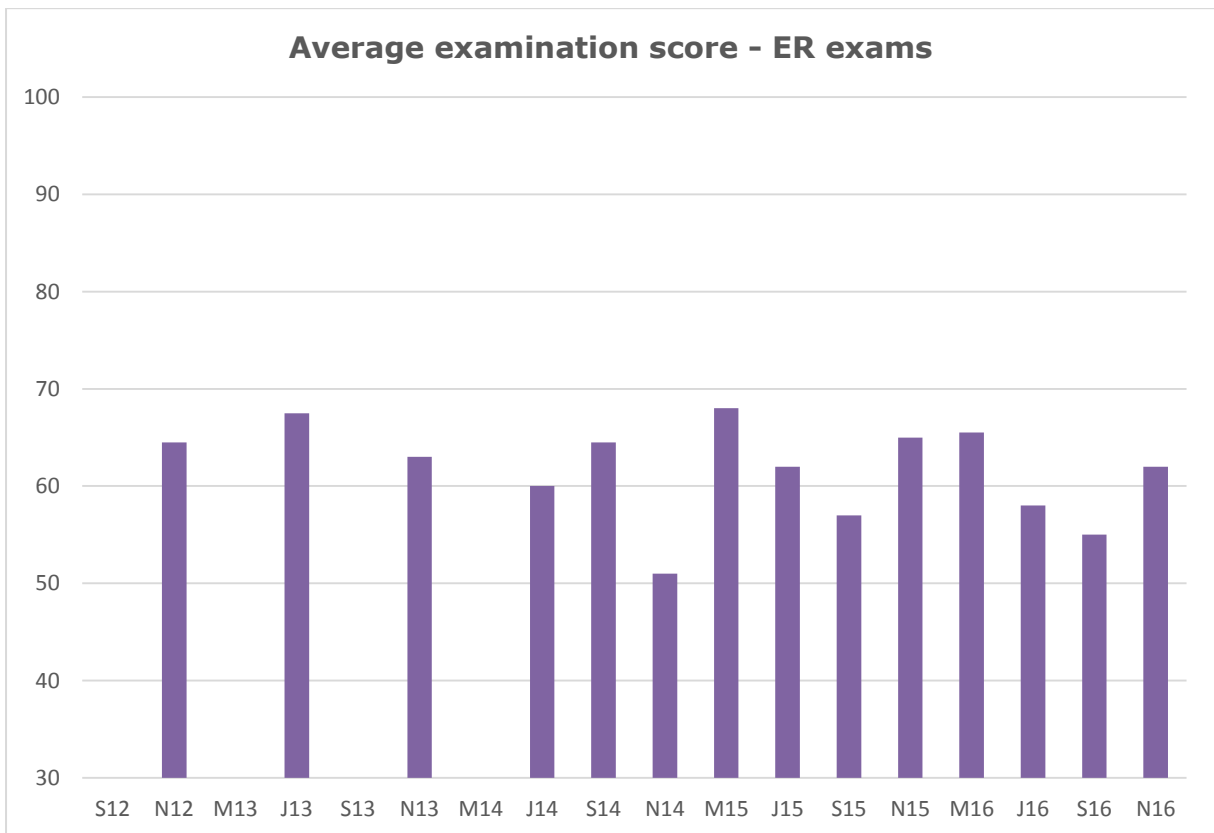
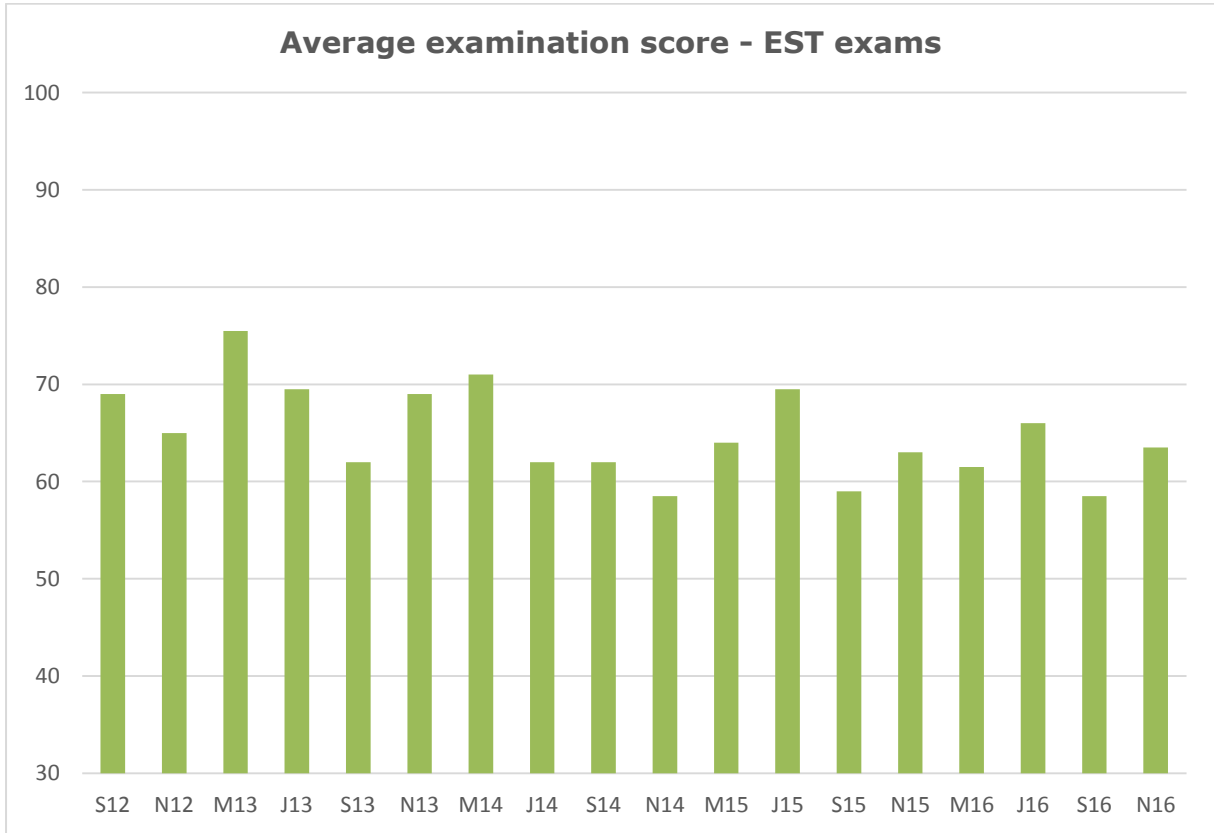


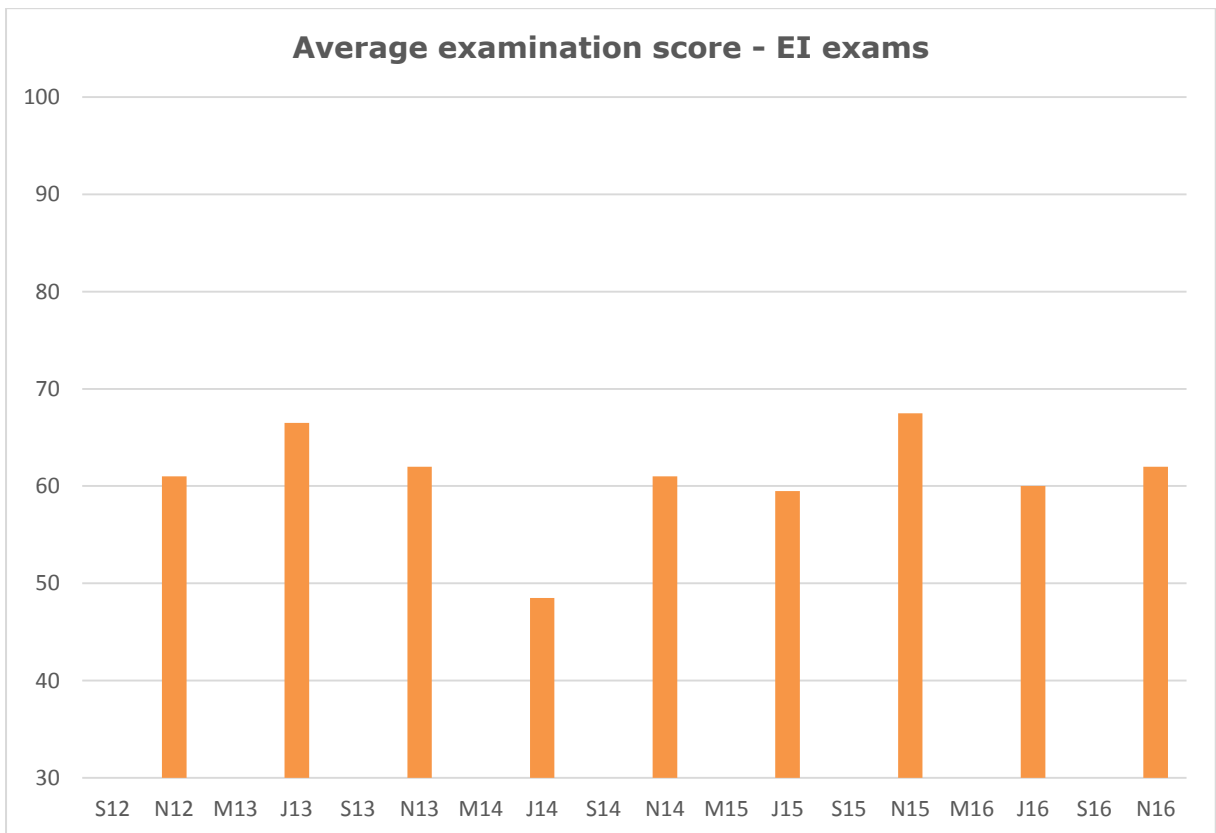
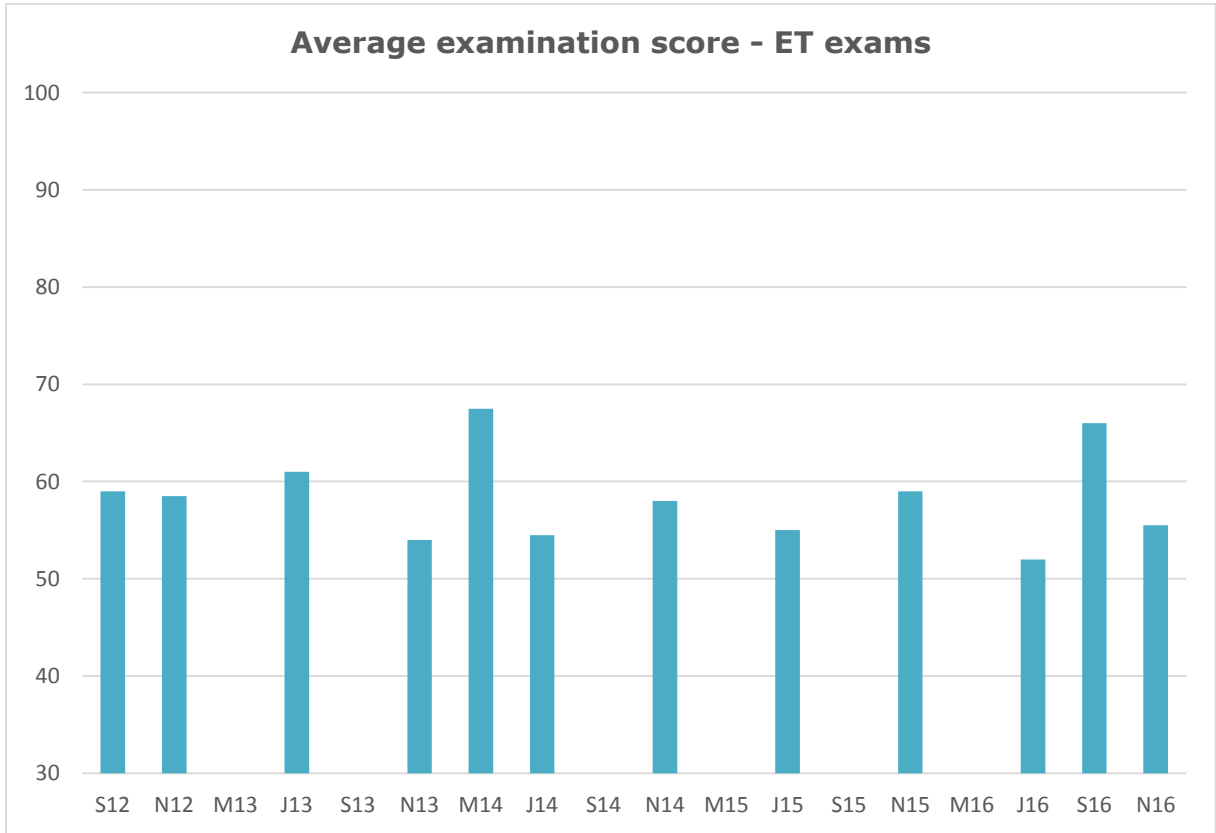


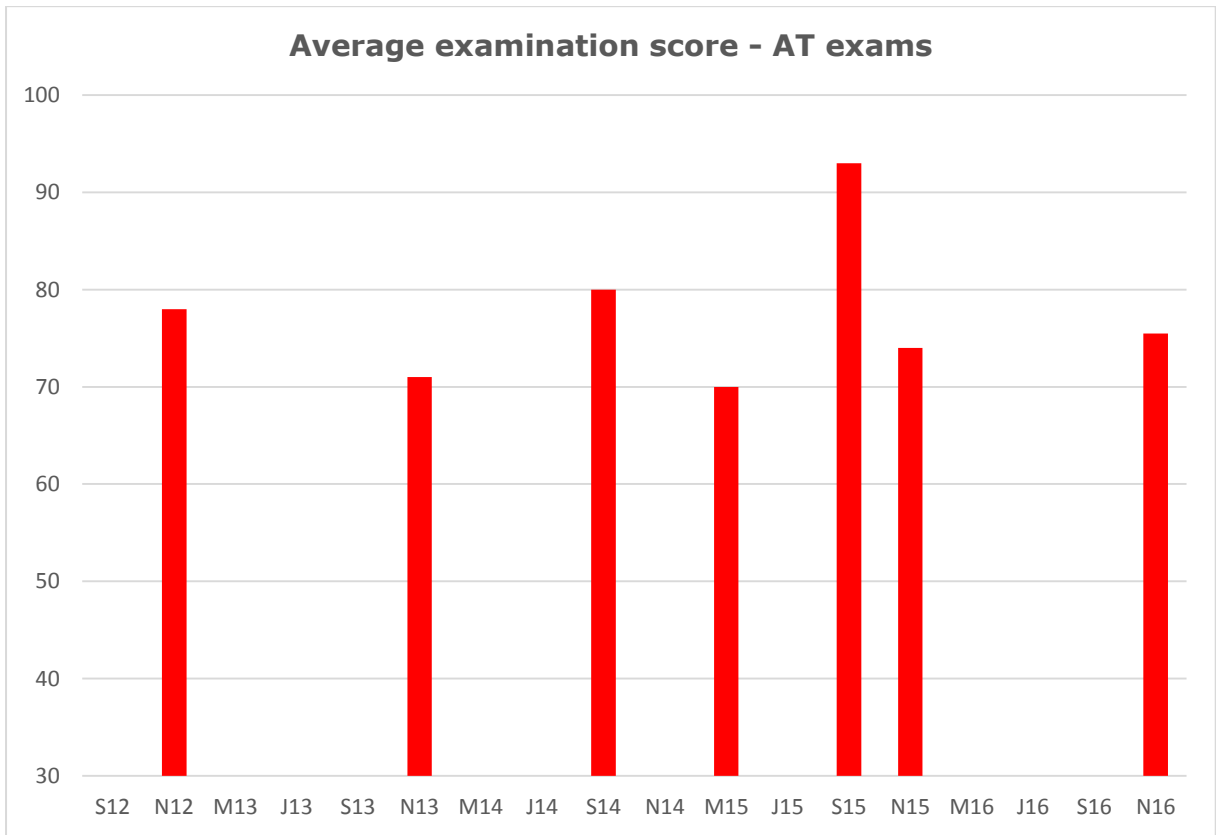
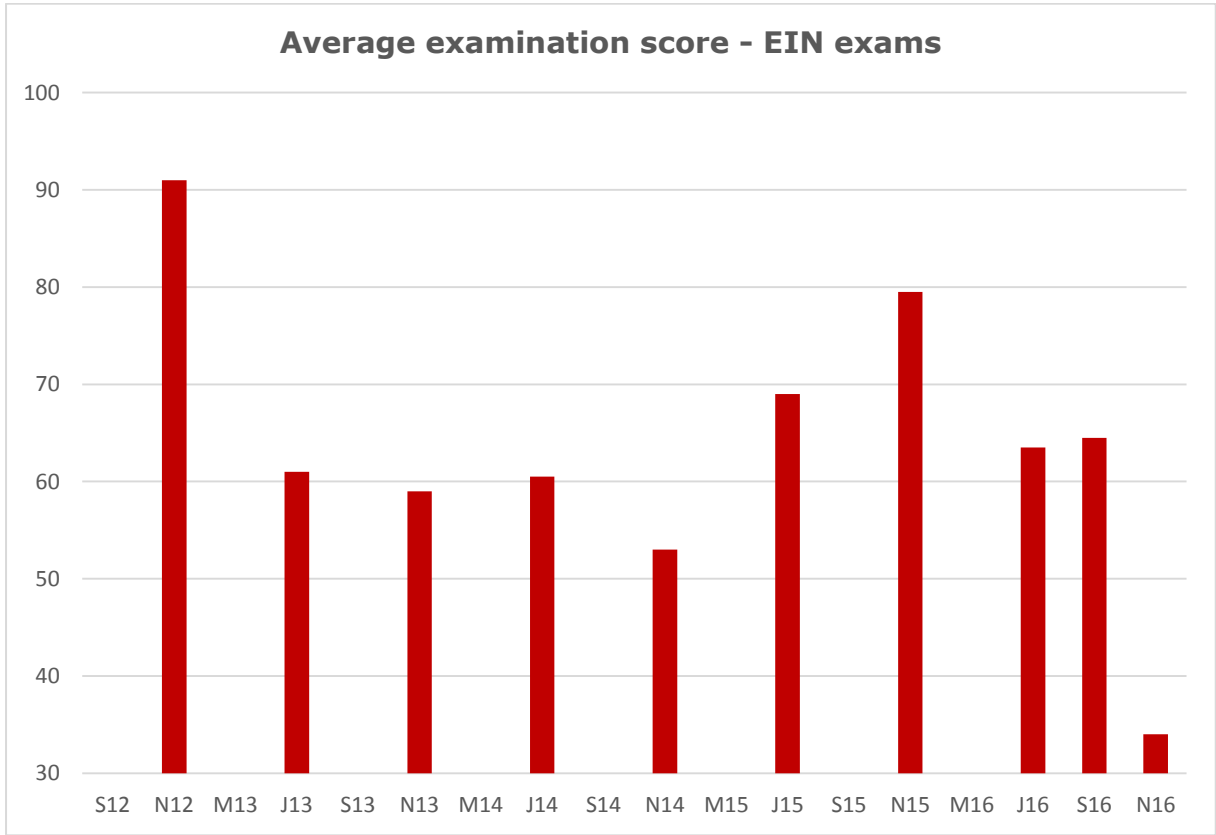
5. Trends in average examination scores











6. Trends in examination centre pass rates

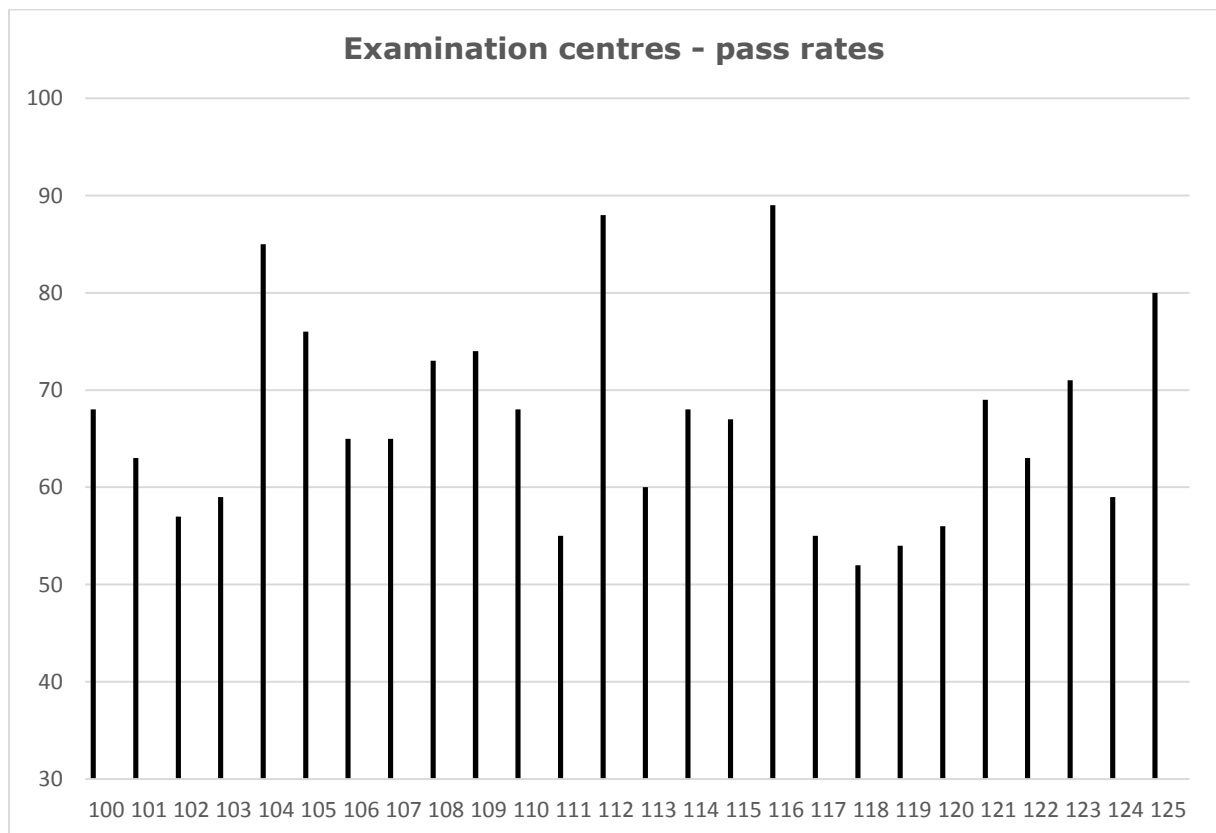
The examination centre pass rate data is derived from the calendar years 2009 to 2016. The calendar year is used because this coincides with the academic year. The key for the examination centre codes is contained in the appendix.

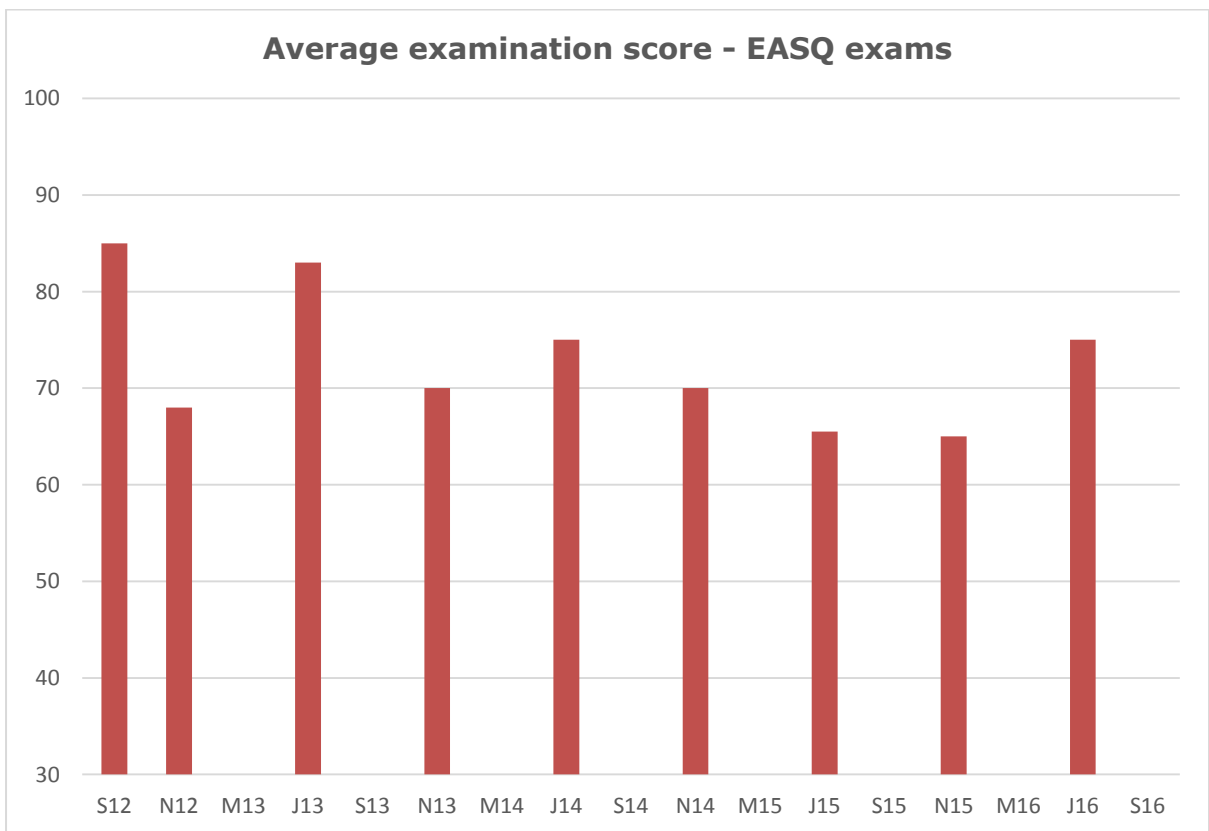
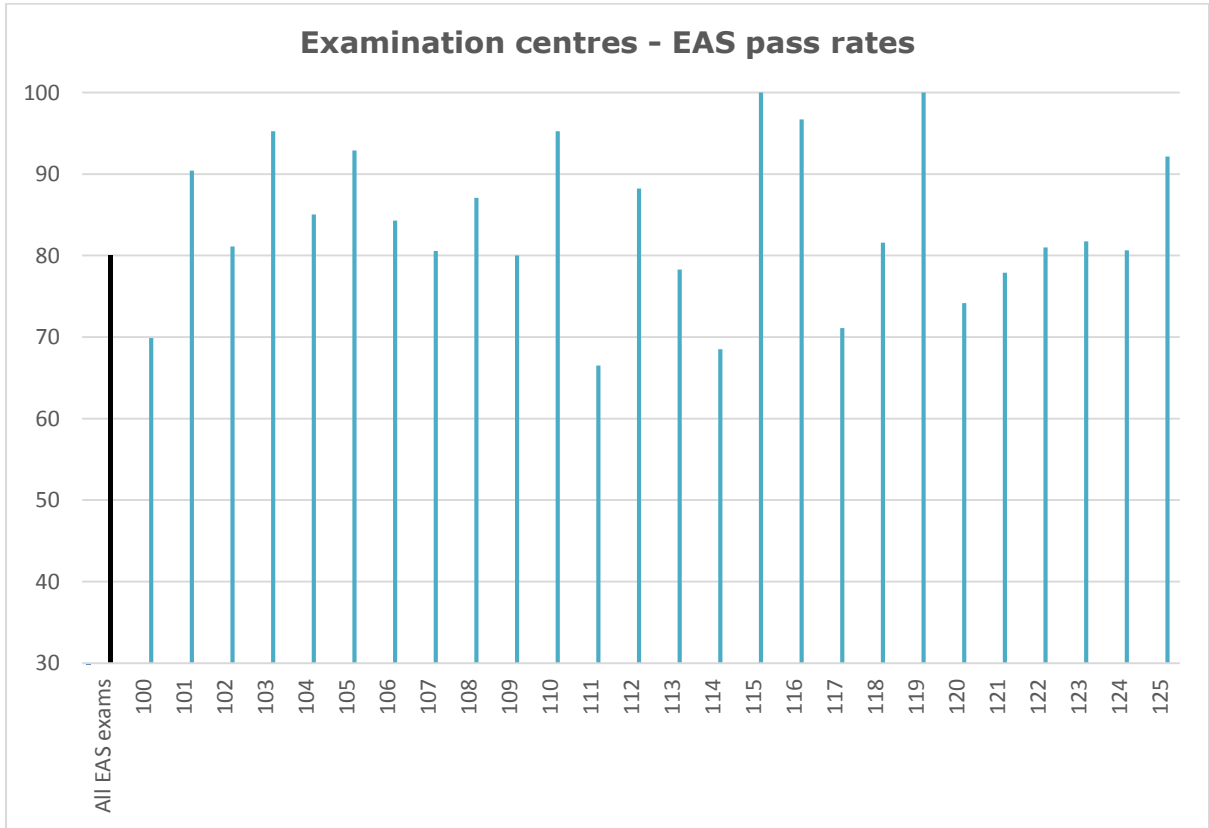
Note that:

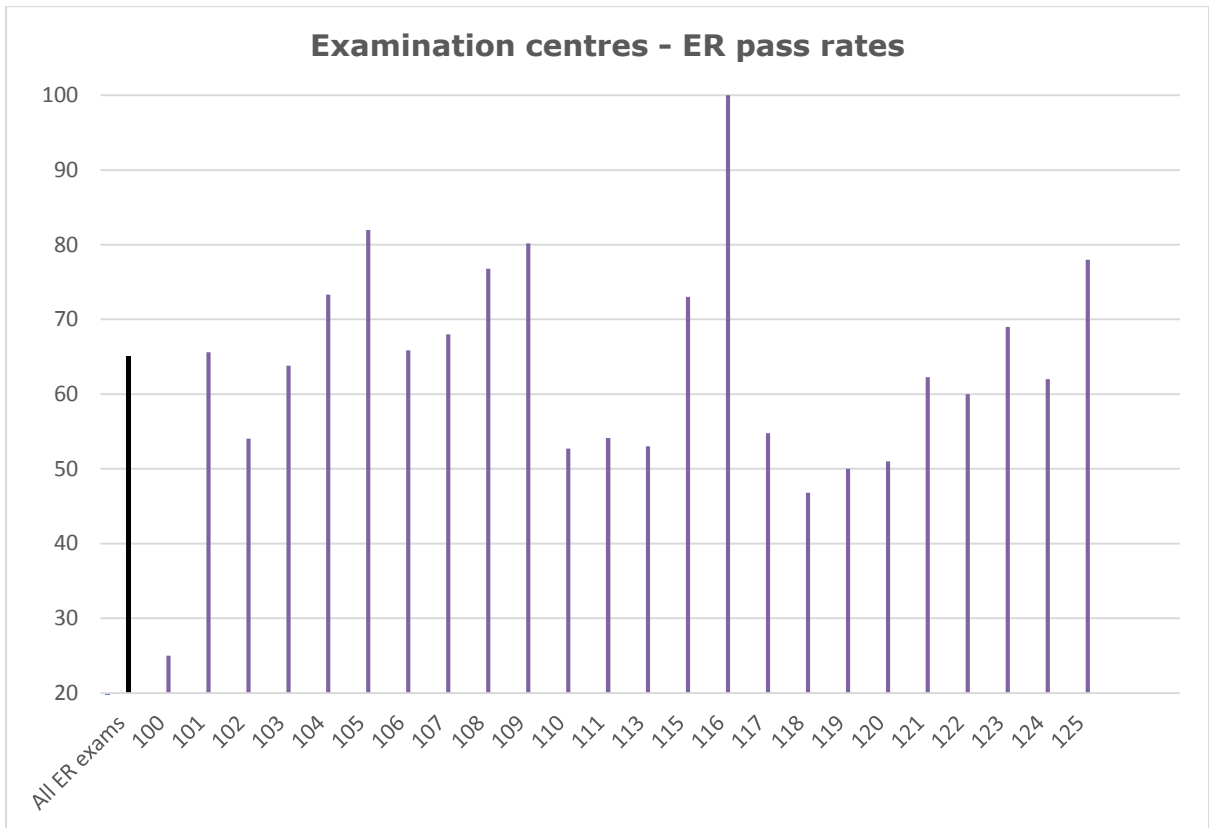
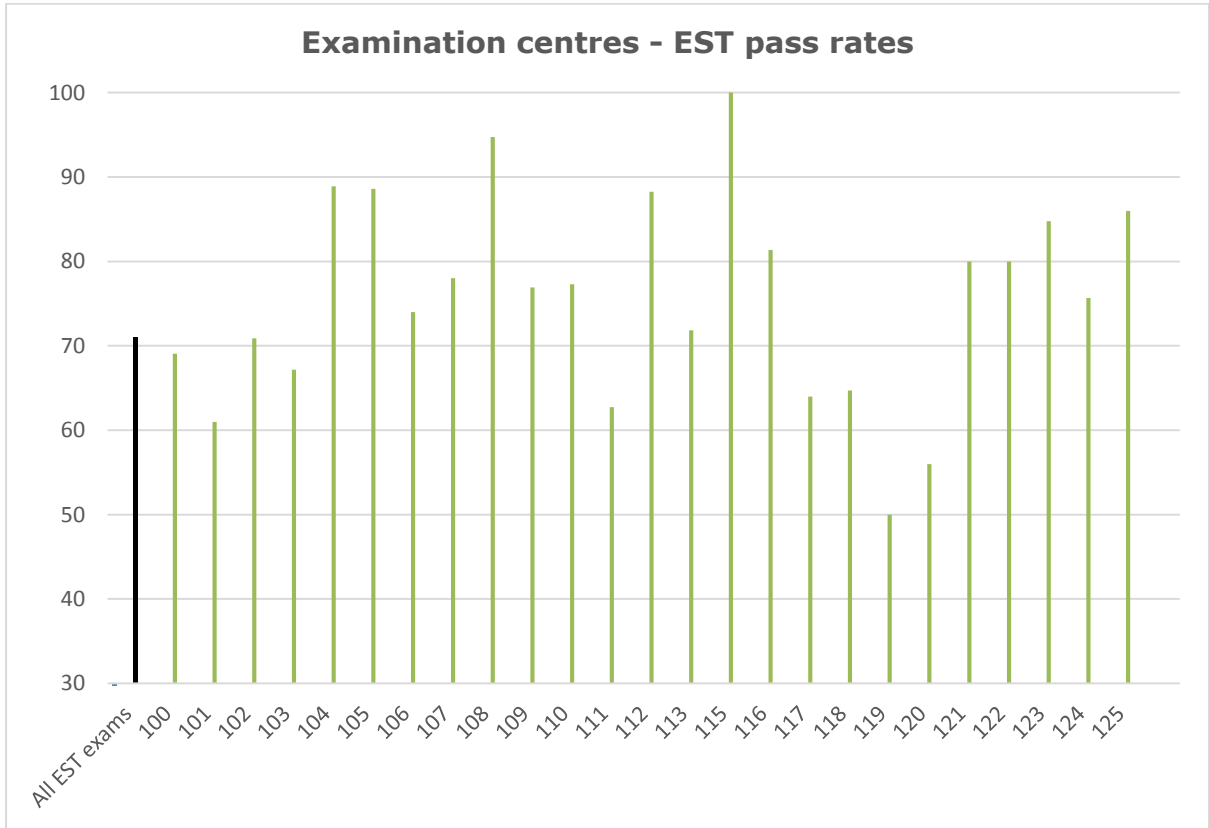
- Some examination centres do not appear on some charts. Those centres did not have candidates in that class of examination over the period in question.
- The “All exams” pass rate shown on the charts is for the period 2009 to date.
- Where a pass rate is very high or very low this is invariably because 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.

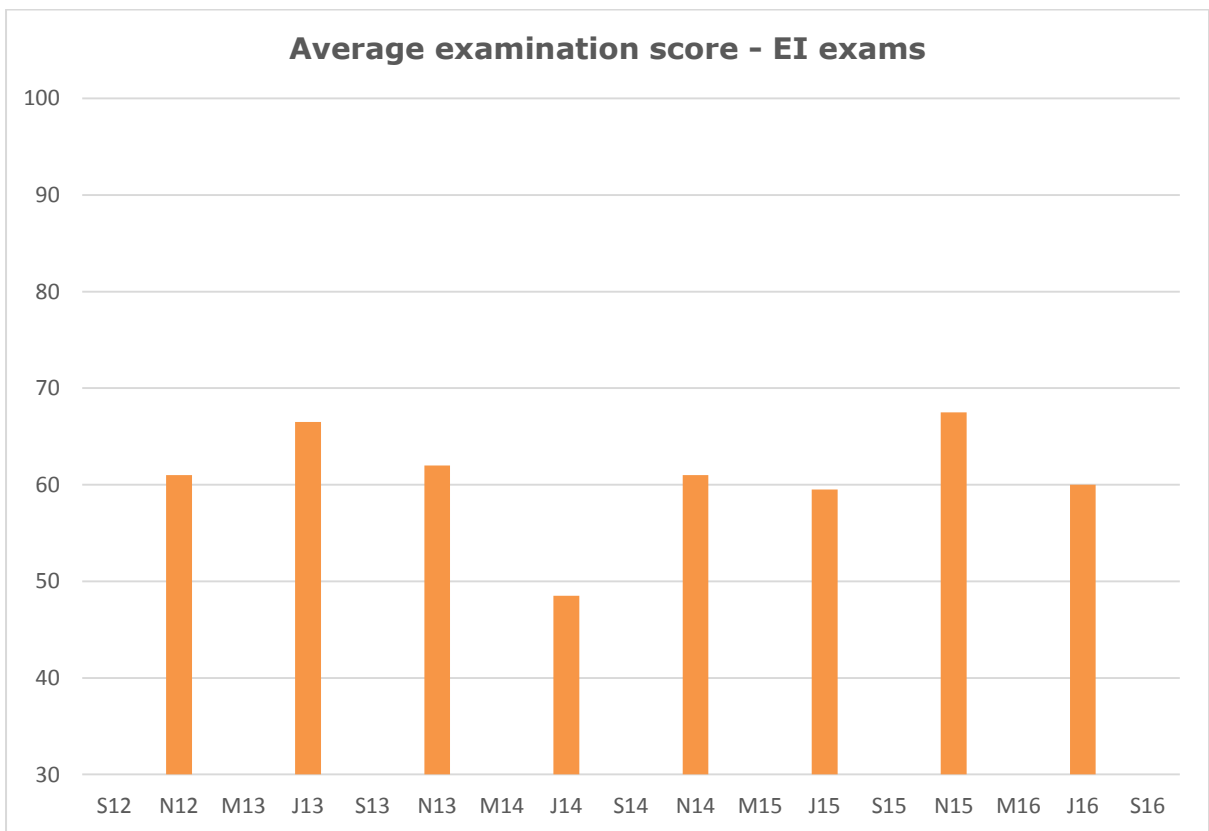
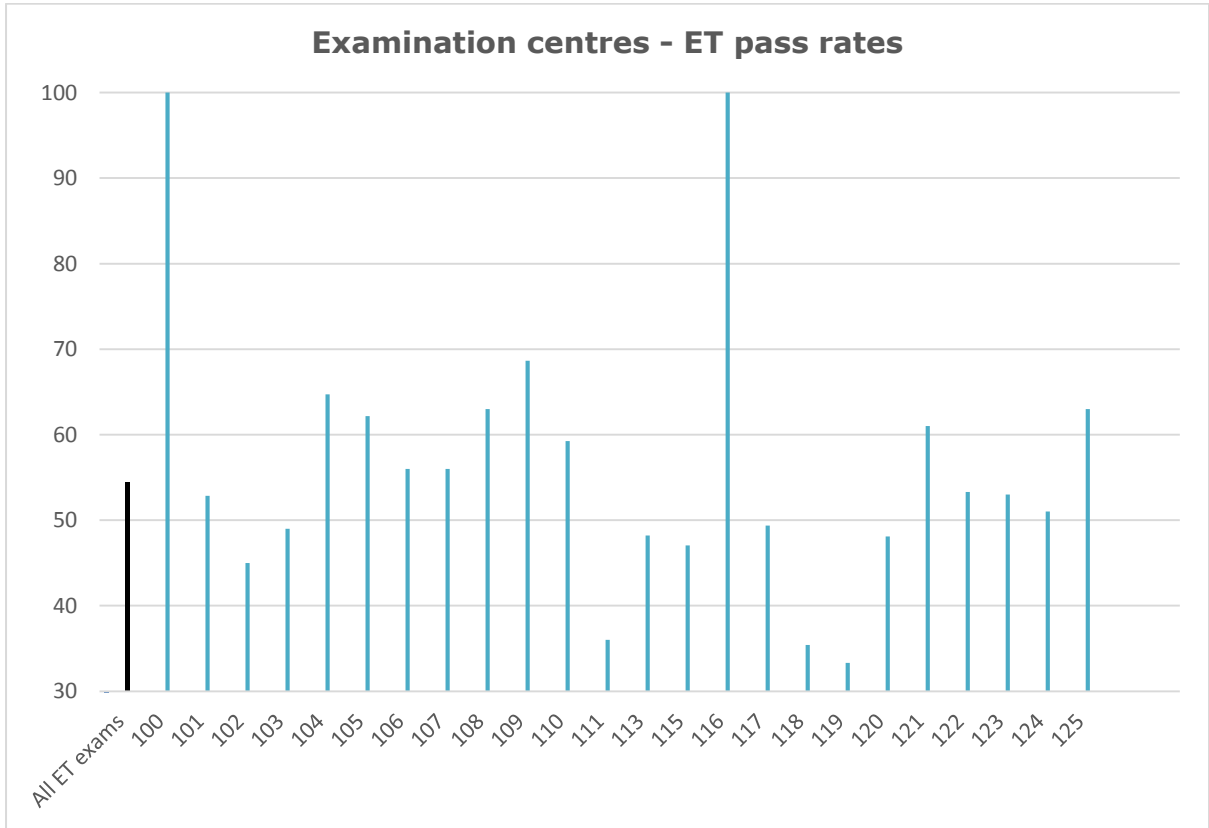
The Electrician Regulations and Theory examinations are those where the pass rates can vary considerably (particularly the Theory examination). Over time, almost two-thirds Electrician Regulations examination candidates will pass, while for the Electrician Theory a little more than half will pass.

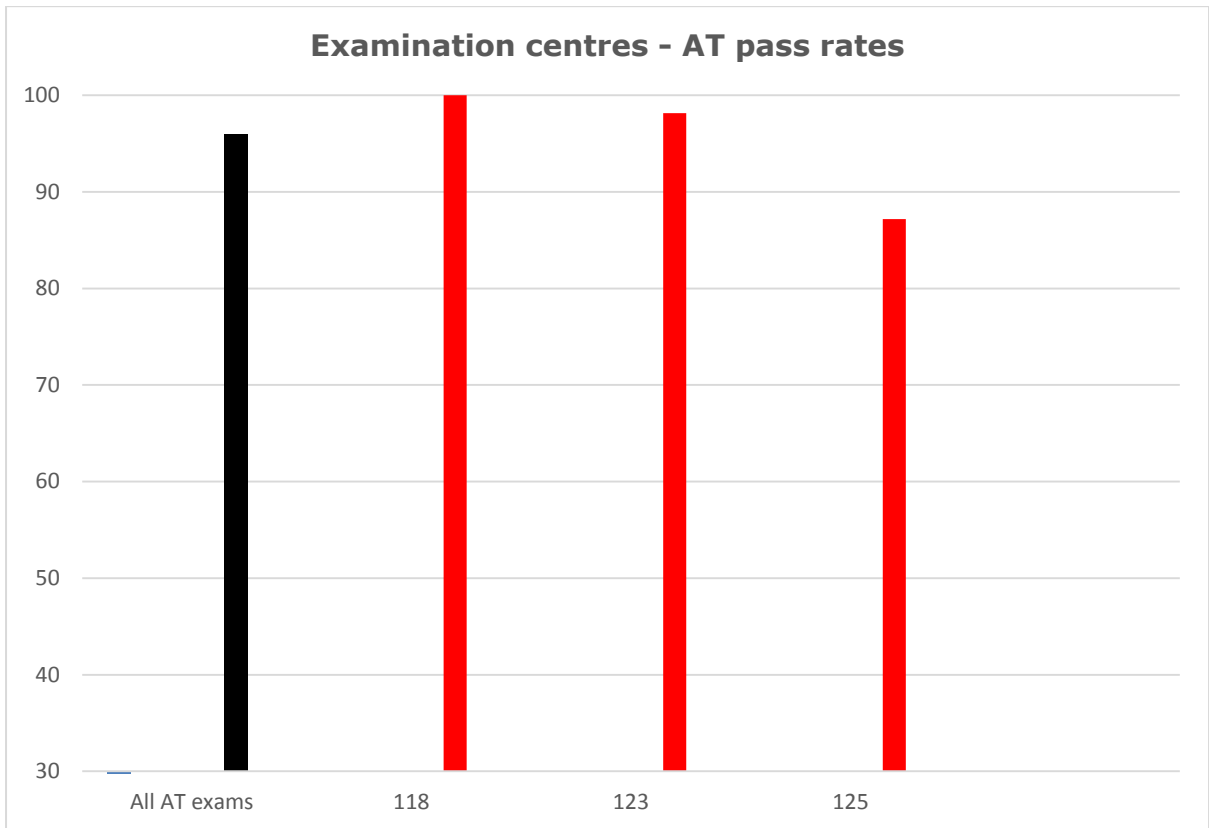
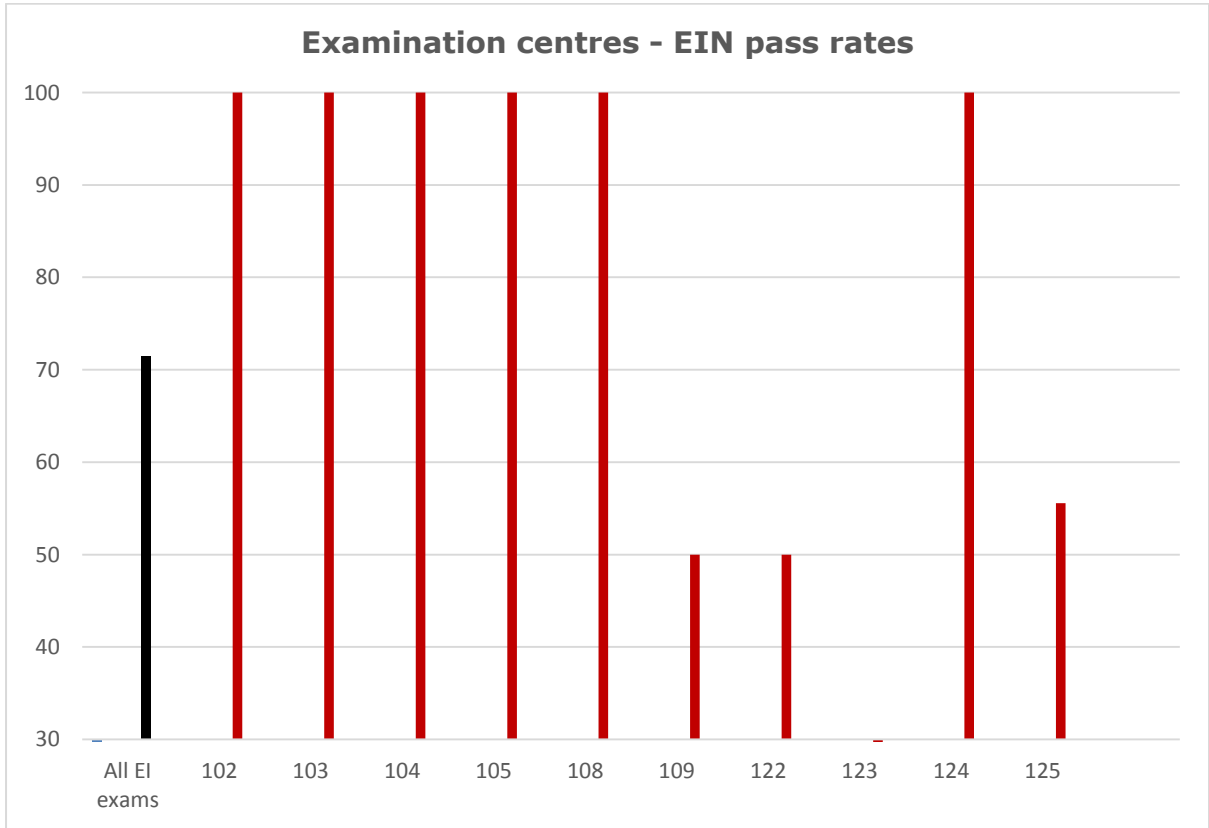
Regardless of the pass rate, examination centres 106, 107, 108, 109 and 125 consistently demonstrate high pass rates well above the overall rates for those two examinations. There are other examination centres who have pass rates consistent with the overall pass rate.











Appendix 1

Examination Centres

Active Centres

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

Non-active Centres

104
105
110
112
116
119
126

Appendix 2

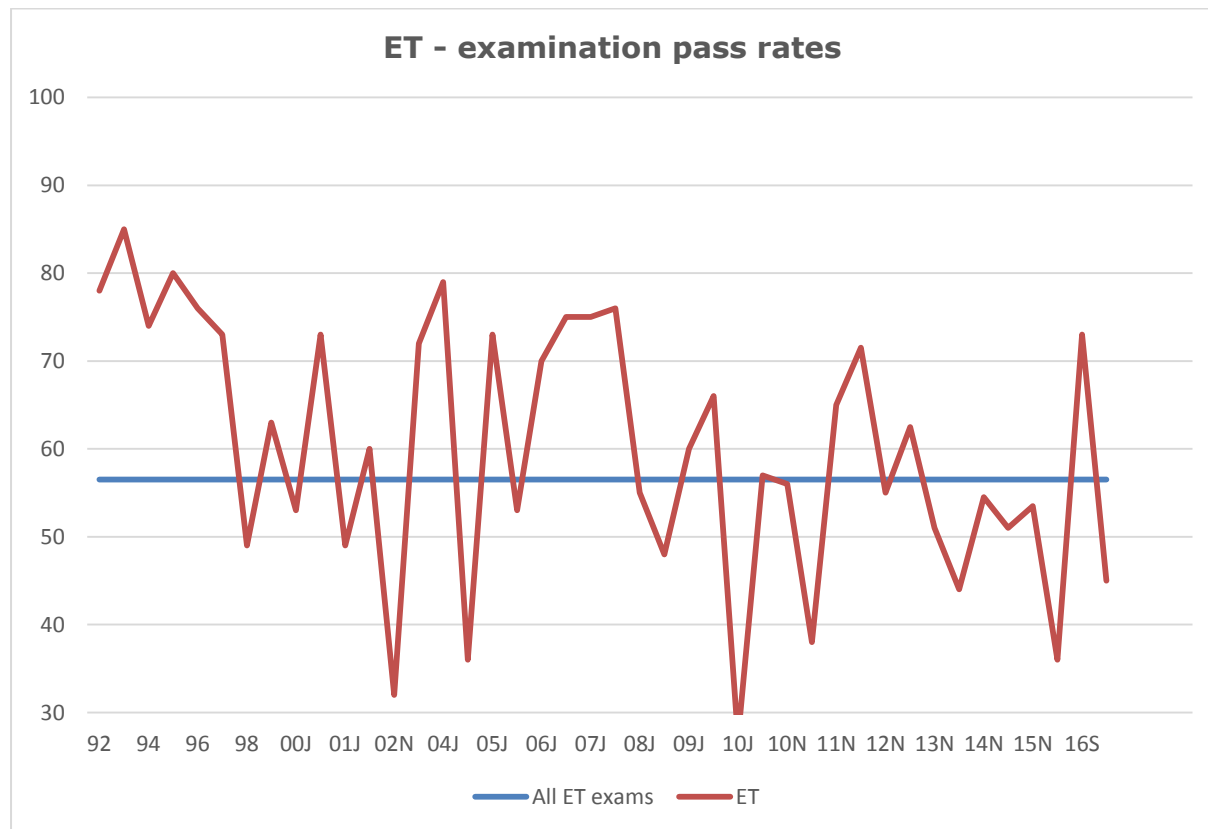
Electrician Theory Examination Pass Rates

1992 to 2016

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.



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%

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%
2016 Jun	60%	36%
2016 Sep	60%	73%
2016 Nov	60%	