

HSC Results 2019

Presentation to P & C meeting by Dr K. A. Jaggar
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School average ATAR history

2019 average ATAR was 92.78 with SD of 8.44

Since 2001 our average ATAR has been 92,67 with SD of 8.82

This is our second lowest result since 2012

Our segmented ATAR history:

2001-2007	91.59
2008-2014	93.41
2015 -2019	93.16 (5 years)

ATAR Predictor Results

Year 7 enrolments	93.14
Later years enrolments	91.39
Overall result	92.78

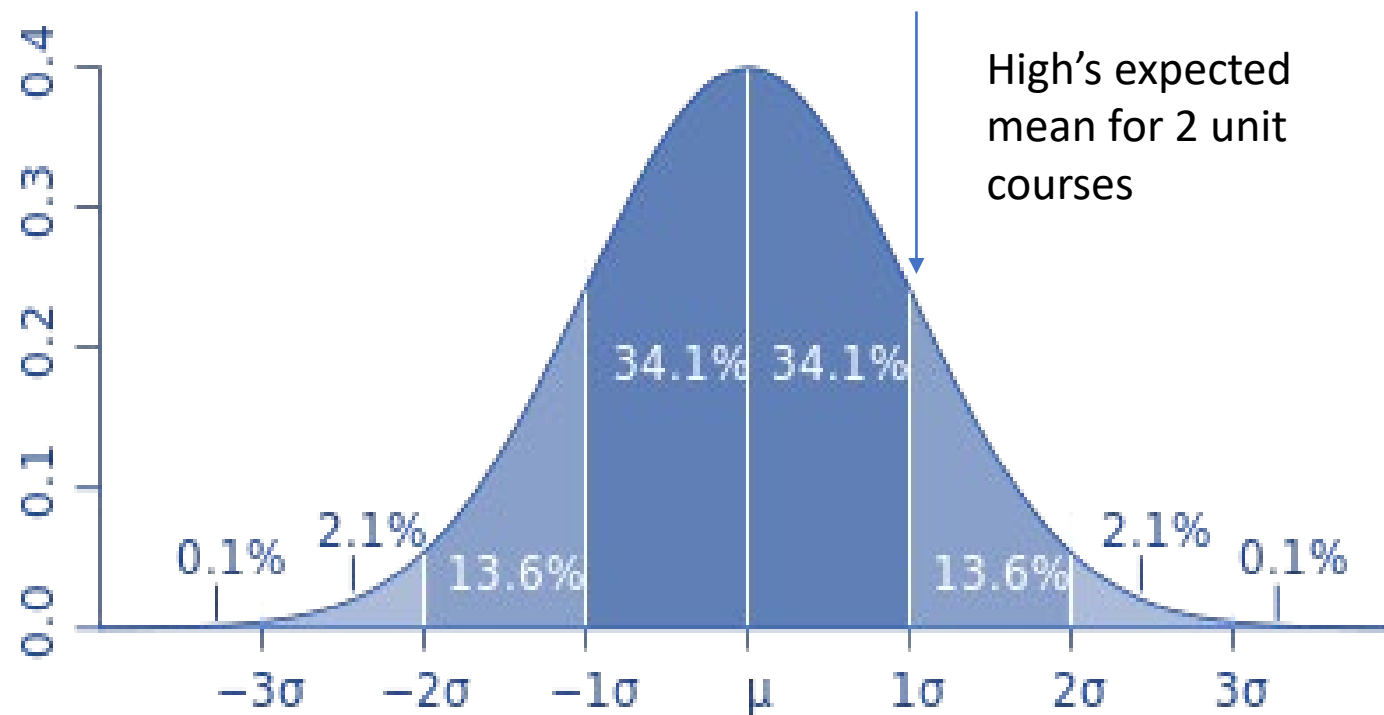
Individual results 2 @ 99.95

>= 99	43	80-84	11	Tail <90	49	10.85%
95-98.95	80	75-79	8	Second biggest tail since 2005		
90-94.95	40	70-74	9	Students =/>90	163	78.74%
85-89	15	<70	6	Second highest in four years		

of the lowest 25 ATARS 18 enrolled in Year 7

Explanation of Terms

Standard deviation



Explanation of Terms cont...

- **Standard deviation (σ) shows how much variation of scores or dispersion from the average (mean) exist in a population. Each band has a width of one standard deviation.**
- **The mean (μ) is the sum of all the numbers in the set (candidates' scores in an HSC course), divided by the amount of numbers in the set (number of candidates).**
- **School standard. As 68.2% of scores fall above or below one standard deviation above the mean, we expect our school's mean in two-unit courses only, to be at the level of at least one standard deviation above the mean.**
- **Due to the scaling effects, as demonstrated later in the presentation, a target HSC mark for a two-unit course is 87, because any lower and the scaled score per unit x by 10 units would not amount to 371 or 90 ATAR.**

Explanation of Terms (cont.)

Z score:

A z score for an HSC course is the school mean minus the state mean divided by the state standard deviation.

Assume a normal curve distribution. Let's say the state HSC mean for a course is 74 and its standard deviation is 12. Suppose at High the course mean is 86. The calculated z-score is $(86-74)/12=1$.

There are 15.9% of candidates left after the first standard deviation above the mean. As it happens, about 16.3% of students who apply are awarded an ATAR of 90 or more. 90 ATAR is the minimum standard at High

NB The distribution of marks for ATAR purposes is curvilinear.

'Z' Score Comparison of courses – highly successful ≥ 1.0

Design and technology N=5, Mean = 91.90 z= 1.30

PD/H/PE N=8, Mean = 85.23 z= 1.10

Business Studies N=25, Mean = 86.75 z= 1.06

Chemistry *N=113, Mean = 89.71 z= 1.05*

Engineering Studies N= 20, Mean = 85.31 z= 1.02

Biology N= 30, Mean = 84.68 z= 1.01

Modern History N= 33, Mean = 87.74 z= 1.01

Our expectations are that in 2-unit courses our course mean should be as close to one standard deviation above the state mean as possible. N=7 for 2019

'Z' Score Comparison of courses – successful 0.75-0.99

Ancient History	N=5,	Mean= 87.0	z= 0.99
Software Design	N=11,	Mean= 88.62	z= 0.98
Geography	N=11,	Mean= 87.71	z= 0.95
<i>Mathematics Advanced</i>	<i>N=161,</i>	<i>Mean= 90.75</i>	<i>z= 0.95</i>
<i>Physics</i>	<i>N=125,</i>	<i>Mean= 86.34</i>	<i>z= 0.95</i>
Music 1	N=1,	Mean =89.80	z= 0.83
Legal Studies	N=14,	Mean= 85.57	z= 0.81
Studies of Religion- 1 unit	N=5,	Mean= 42.32	z= 0.78
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English Advanced	N=212,	Mean= 84.58	z= 0.47
Economics	N=69,	Mean= 82.50	z= 0.43

Comparison of means of Extension courses – highly successful ≥ 0.5

Music Extension	N=3,	Mean= 48.90	z= 0.80
Mathematics Extension 1	N= 167,	Mean= 91.53	z= 0.70
Mathematics Extension 2	N= 123,	Mean= 89.42	z= 0.57

Given the high scores and means of Extension courses in the state, if our mean is half a standard deviation above the state mean, that is a very successful result.

History extension	N=5,	Mean=40.10	z=0.18
English extension 1	N=33,	Mean= 42.32	z=0.13

We had three negative z scores for extension courses

How did 2019's results compare to past HSC results at High?

The following tables describe the course and a statement comparing this year's result to that of previous years in that course at High, going back as far as 2001 when the new HSC began.

The z-score for the course is followed by two scores at the 90th percentile. With similar pairs of scores for the 75th percentile and 50th percentile. The first score is the HSC mark at that percentile, followed by the ATAR scaled mark at that percentile.

The standard at High for a 2-unit mark, scaled for ATAR is 74.2. Scores highlighted in red fall below 74.2 at the 75th percentile HSC score

How well did we perform compared to our statistically similar group?

How well did we perform against the state mean for the course?

How well did we perform against our own 5-year average?

The following tables comprise:

- **The name of the course with 10 or more candidates from High**
- **The HSC mean for High in the course**
- **The mean for the statistically similar school group**
- **The mean in the course or the state**
- **The mean in the course for the last five years at High**

NB Scores highlighted in red were below the SSSG score or the Average Mean of the last 5 years for High

Course	SBHS 2019	SSSG Average 2019	State Mean 2019	School Average 2014-2018
Biology	84.87	84.23	72.4	86.3
Business Studies	87.12	84.73	72.6	89.2
Chemistry	90.01	86.12	75.8	88.2
Economics	82.78	85.3	77.8	85.5
Engineering Studies	85.4	85.69	74.8	87.7
English (Advanced)	84.87	85.57	81.2	86.7
English Extension 1	85.45	87.1	84.2	89.9

Subject	School 2019	SSSG Average 2019	State Mean 2019	School Average 2014-2018
Geography	88.09	85.12	75.2	88
Legal Studies	86.86	87.12	74.0	87
Mathematics	91.2	87.12	78.4	90.8
Mathematics Extension 1	91.77	88.45	91.52	91.9
Mathematics Extension 2	89.71	88.07	82.0	89.5
Modern History	87.94	85.75	73.8	87.7
Physics	86.5	84.12	73.6	86.2
Studies of Religion II	84.21	82.1	77.0	81.7

Comparing ourselves to the state over time

- * The first column describes the course and its number of candidates in the state current – highest – lowest and mean since 2001.
- * In the second column, there is the history of the state mean in the course - current – highest – lowest and mean since 2001.
- * In the third column, the ATAR unit value is recorded, where 25 is average.
- In the fourth column, the school ATAR value for the average student in the course – nb the school standard is 37.1
nb Where high or low values occur they are coloured.
Where school mean scaled unit values are below 37.1, they are coloured.

COMPARING OURSELVES AGAINST THE STATE

COURSE	NO.	STATE MEAN	ATAR UNIT VALUE SCALED	SCHOOL ATAR MEAN UNIT VALUE SCALED	ATAR Z-SCORE
Ancient History					
2019	7,233	36.5	23.9	34.90	1.00
High	12,144	37.5	25.1	37.60	1.27
Low	7,216	34.9	23.3	30.12	0.54
LTA	10,201	36.22	24.54	34.52	0.93
COURSE	NO.	STATE MEAN	ATAR UNIT VALUE SCALED	SCHOOL ATAR MEAN UNIT VALUE SCALED	Z-SCORE
Biology					
2019	18,667	36.2	25.9	35.70	0.99
High	18,667	37.4	26.9	37.48	1.12
Low	12,215	35.8	25.9	33.13	0.41
LTA	15,538	36.61	26.64	35.14	0.87

COMPARING OURSELVES AGAINST THE STATE

COURSE	NO.	STATE MEAN	ATAR UNIT VALUE SCALED	SCHOOL ATAR MEAN UNIT VALUE SCALED	Z-SCORE
Business Studies					
2019	17,586	36.3	24	35.52	1.06
High	17,611	37.4	24.3	40.83	1.62
Low	14,721	34.7	23.6	32.05	0.82
LTA	16,208	36.48	23.9	36.20	1.17
COURSE	NO.	STATE MEAN	ATAR UNIT VALUE SCALED	SCHOOL ATAR MEAN UNIT VALUE SCALED	Z-SCORE
Chemistry					
2019	10,277	37.9	31.4	41.67	1.04
High	11,173	38.3	31.8	42.43	1.13
Low	8,887	34.6	31.2	38.20	0.67
LTA	10,337	37.1	31.5	40.17	0.92

COURSE	NO.	STATE MEAN	ATAR UNIT VALUE SCALED	SCHOOL ATAR MEAN UNIT VALUE SCALED	Z-SCORE
Economics					
2019	5,100	38.9	31.8	35.58	0.40
High	6,136	38.9	32.2	40.08	0.88
Low	5,131	36.9	30.6	35.16	0.40
LTA	5,416	38.12	31.35	37.97	0.68
Engineering Studies					
2019	2,257	37.4	25.8	35.59	1.01
High	2,257	38.2	26.0	38.63	1.39
Low	1,274	32.6	25.0	32.38	0.75
LTA	1,746	37.0	25.6	35.91	1.10

COURSE	NO.	STATE MEAN	ATAR UNIT VALUE SCALED	SCHOOL ATAR MEAN UNIT VALUE SCALED	Z-SCORE
English Advanced					
2019	25,251	40.6	31.9	35.45	0.43
High	28,066	40.7	33.2	40.28	0.99
Low	20,123	38.5	31.2	34.47	0.21
LTA	26,107	39.9	31.8	37.13	0.64
English Extension 1					
2019	3,490	42.1	36.4	36.72	0.05
High	6,282	42.5	38.4	41.92	0.92
Low	3,813	38.8	35.4	35.09	-0.31
LTA	5,054	40.6	36.4	38.81	0.37

COURSE	NO.	STATE MEAN	ATAR UNIT VALUE SCALED	SCHOOL ATAR MEAN UNIT VALUE SCALED	Z-SCORE
English Extension 2					
2019	1,326	39.8	36.2	33.43	-0.40
High	2,608	41.6	38.1	45.29	1.38
Low	1,326	39.0	35.2	33.43	-0.46
LTA	2,015	39.9	36.3	37.70	0.20
Geography					
2019	4,188	37.6	25.2	35.55	0.93
High	6,210	38.6	26.0	39.15	1.31
Low	4,109	35.9	24.8	32.84	0.75
LTA	4,668	37.4	25.4	36.21	1.03

COURSE	NO.	STATE MEAN	ATAR UNIT VALUE SCALED	SCHOOL ATAR MEAN UNIT VALUE SCALED	Z-SCORE
Legal Studies					
2019	10,516	37.0	25.2	33.95	0.80
High	10,797	38.2	25.7	38.62	1.31
Low	7,523	33.1	25.1	29.82	0.44
LTA	9,129	37.0	25.3	35.35	0.94
Mathematics					
2019	17,311	39.2	31.1	39.94	0.92
High	20,799	39.4	31.3	40.54	1.02
Low	16,139	36.2	29.8	34.81	0.53
LTA	17,803	38.1	30.6	38.52	0.82

COURSE	NO.	STATE MEAN	ATAR UNIT VALUE SCALED	SCHOOL ATAR MEAN UNIT VALUE SCALED	Z-SCORE
Mathematics Extension 1					
2019	8,830	40.3	39.1	43.94	0.69
High	9,955	41.0	40.1	44.75	0.83
Low	6,240	36.6	37.6	41.34	0.41
LTA	8,831	39.7	39.4	43.39	0.58
Mathematics Extension 2					
2019	3,134	41.0	42.9	45.39	0.55
High	3,512	41.9	44.7	46.71	0.70
Low	2,578	39.7	42.7	44.84	0.22
LTA	3,213	41.0	43.6	45.74	0.47

COURSE	NO.	STATE MEAN	ATAR UNIT VALUE SCALED	SCHOOL ATAR MEAN UNIT VALUE SCALED	Z-SCORE
Modern History					
2019	11,329	36.9	25.6	36.88	1.03
High	11,329	38.6	27.6	38.51	1.11
Low	8,751	37.1	25.5	32.07	0.48
LTA	10,084	37.7	26.9	36.01	0.85
History Extension					
2019	1,825	39.4	33.7	34.47	0.11
High	2,397	42.7	35.2	40.83	0.96
Low	1,524	34.6	33.6	33.02	-0.26
LTA	2,041	38.2	34.2	37.37	0.49

COURSE	NO.	STATE MEAN	ATAR UNIT VALUE SCALED	SCHOOL ATAR MEAN UNIT VALUE SCALED	Z-SCORE
Music 1 (1 score)					
2019	4,476	41.1	21.2	30.04	0.83
High	5,126	41.1	22.8	41.46	1.92
Low	3,555	37.2	21.1	26.07	0.37
LTA	4,519	39.8	21.9	33.03	1.09
Music 2 unit					
2019	730	44.0	33.3	37.95	0.55
High	850	44.0	34.4	43.68	1.37
Low	539	40.9	32.1	31.93	-0.05
LTA	689	42.7	33.3	38.65	0.67

COURSE	NO.	STATE MEAN	ATAR UNIT VALUE SCALED	SCHOOL ATAR MEAN UNIT VALUE SCALED	Z-SCORE
Music Extension (3 scores)					
2019	417	45.5	35.3	42.73	0.79
High	504	46.2	36.2	45.28	1.25
Low	332	41.7	33.9	31.85	-0.49
LTA	428	44.3	35.1	40.60	0.64
PDHPE (8 scores)					
2019	15,545	36.5	23.0	34.06	1.07
High	15,986	37.7	23.7	38.74	1.50
Low	9,284	33.7	22.7	29.54	0.59
LTA	13,227	36.2	23.2	33.93	1.05

COURSE	NO.	STATE MEAN	ATAR UNIT VALUE SCALED	SCHOOL ATAR MEAN UNIT VALUE SCALED	Z-SCORE
Physics					
2019	8,404	36.8	30.5	39.72	0.95
High	10,158	37.8	30.7	41.18	1.11
Low	8,900	34.5	30.1	36.94	0.70
LTA	9,311	36.9	30.4	39.02	0.89

COURSE	NO.	STATE MEAN	ATAR UNIT VALUE SCALED	SCHOOL ATAR MEAN UNIT VALUE SCALED	Z-SCORE
Software Design					
2019	1,796	37.8	25.7	36.11	0.97
High	3,666	37.9	26.1	39.10	1.45
Low	1,608	32.8	23.6	30.53	0.48
LTA	2,089	36.6	24.7	36.20	1.14
Studies of Religion 1 unit (5 scores)					
2019	8,475	38.6	27.9	34.52	0.74
High	9,950	39.2	28.1	36.95	1.06
Low	8,926	37.6	27.1	29.16	0.20
LTA	9,195	38.5	27.6	31.58	0.45

COURSE	NO.	STATE MEAN	ATAR UNIT VALUE SCALED	SCHOOL ATAR MEAN UNIT VALUE SCALED	Z-SCORE
Studies of Religion 2 unit					
2019	6,046	38.5	27.6	34.43	0.69
High	6,280	39.4	27.8	39.89	1.26
Low	3,554	37.3	26.8	30.26	0.36
LTA	5,237	38.2	27.3	33.37	0.61
Visual Arts (2 scores)					
2018	8,526	40.6	22.3	26.04	0.98
High	9,717	40.6	23.5	41.50	1.76
Low	8,462	36.1	21.9	26.04	0.35
LTA	9,050	39.6	22.8	32.89	0.94

Universities They Go To

Course	2013	2014	2015	2016	2017	2018	2019
New South Wales	117	124	145	127	147	137	131
Sydney	47	41	25	38	27	38	44
UTS	13	10	3	13	7	11	12
Macquarie	6	10	6	6	8	6	10
Australian Catholic	0	3	4	1	1	6	5
ANU	3	8	7	5	4	5	3
Western Sydney	7	4	8	11	9	3	3
Wollongong	1	0	2	1	1	1	1
other	6	5	5	4	1	0	5
total	200	205	205	205	205	207	2014

University Courses They Do

Course	2013	2014	2015	2016	2017	2018	2019
Engineering	48	36	39	47	43	43	33
Commerce	50	65	64	54	50	56	50
Law	17	29	24	22	27	12	24
Arts	12	10	5	13	5	6	8
Science	18	12	11	18	10	36	32
Health Sciences	38	39	46	36	36	28	28
Design	3	2	0	4	6	7	6
Communication	0	0	3	4	1	0	0
International Studies	6	4	1	3	4	1	1
IT / Systems	5	1	6	3	16	15	28
Education	0	2	0	0	2	1	2