



# A B C OF SCALING 2015

## Some background

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The Victorian Curriculum and Assessment Authority (VCAA) administers the two Victorian senior secondary certificates. The Victorian Certificate of Education (VCE) is awarded for the successful completion of secondary education and provides pathways into tertiary education, training and work. The Victorian Certificate of Applied Learning (VCAL) is a practical work related certificate and provides pathways into training, apprenticeships and work.

The Victorian Tertiary Admissions Centre (VTAC) administers the application and offer process for tertiary institutions in Victoria—universities, Technical

and Further Education (TAFE) institutes and independent tertiary colleges.

To assist tertiary institutions in selecting students, VTAC provides an overall measure of each student's performance across all their Year 12 studies. This overall measure is called the Australian Tertiary Admission Rank (ATAR).

The following explanation will help you understand how the ATAR is calculated.

## Tertiary selection for school leavers

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VTAC administers the course application, selection and offer processes, and provides applicant information (including VCE and VCAL results) to tertiary institution selection officers. When selecting students, selection officers largely use information about each applicant's VCE performance. The information used, and how it is used, varies between institutions and courses.

**First, an applicant must meet the minimum tertiary entrance requirements.**

For higher education courses this is usually satisfactory completion of the VCE including the completion of Units 3 and 4 in one of the VCE English studies in the same year. The same minimum requirement applies for most VET courses, however it does vary between institutions. For more information about minimum tertiary entrance requirements please see the VTAC Guide or the VTAC website.

**Second, an applicant must meet any VCE prerequisites for the course.** Students not satisfying the prerequisites are generally not considered for the course.

**The third factor used in selection is an overall measure of how well an applicant performed** in all their VCE studies compared with all other VCE students. This measure is called the Australian Tertiary Admission Rank (ATAR) and was developed solely for the purpose of tertiary selection.

The ATAR is only calculated for students who have completed their VCE and have met tertiary entrance requirements.

The ATAR is not the only mechanism used for tertiary selection, and it is not used for all VCE applicants. A large number of courses use a range of other selection mechanisms such as interviews, performance auditions, assessment of folios and tests such as aptitude tests. Other criteria may include performance in prerequisite studies or other studies relevant to the course. Applications for special consideration are also taken into account.

All universities are committed to considering around 20% of applicants on a range of criteria broader than just the ATAR. TAFE institutes and independent tertiary colleges normally use a range of criteria, including the ATAR and interviews, and generally do not select mainly on the ATAR.

# What counts towards the ATAR?

The ATAR is based on up to six VCE results. The results do not all have to be from the one year. The ATAR is calculated using:

- a student's best score in any one of the English studies, plus
- the scores of their next best three permissible studies (which together with the English study make the 'Primary Four'), plus
- 10 per cent of the scores for any fifth and sixth study which they may have completed (these are called increments).

If a student has a Primary Four they will get an ATAR. VTAC will use up to six results in calculating the ATAR. If a student has more than six results, the six permissible scores that give the highest ATAR are used.

Studies used in the calculation of the ATAR may be taken over any number of years, however the length of time taken to complete VCE studies may be taken into account by institutions.

## Vocational Education and Training (VET) programs

VET programs included in the VCE Unit 1 to 4 framework contribute to the ATAR in the same way as VCE studies.

Scored Unit 3 and 4 VET sequences are deemed equivalent to VCE Unit 3 and 4 sequences.

Un-scored Unit 3 and 4 VCE VET sequences may count as a fifth and/or sixth increment which is calculated from the average of the Primary Four VTAC Scaled Study Scores.

Where the VCAA has granted block credit at Units 3 and 4 level, recognised VET or Further Education qualifications at level three or above in the Australian Qualifications Framework are eligible for inclusion as a fifth or sixth study increment in the calculation of the ATAR. This increment is calculated as for un-scored Unit 3 and 4 VCE VET sequences.

However, there are additional restrictions placed on the use of VET or Further Education block credit that do not apply to un-scored VCE VET sequences whereby VCE and VCE VET results will take precedence over VFE Block Credit results.

VFE block credit can still be used in the calculation of the ATAR. However, it can only be used in the calculation of an ATAR if there are fewer than 6 VCE or VCE VET studies available. If there are 6 or more VCE or VCE VET studies available, a VFE block credit result cannot be used.

## Approved Higher Education Studies in Schools

Students undertaking an approved Higher Education Study in Year 12 can include the result as an increment in the ATAR (fifth or sixth study, but not both) provided that it is passed, that VCAA co-requisite or prerequisite conditions were met, and study combination restrictions were met. An increment will be awarded for the Higher Education Study, depending on the level of results achieved in the Higher Education Study:

- If the student's average result over all the Higher Education Study units is at least 90%, the Higher Education increment will be 5.0.
- If the student's average result over all the HE study units is at

least 80% but less than 90%, the Higher Education increment will be 4.5.

- If the student's average result over all the HE study units is at least 70% but less than 80%, the Higher Education increment will be 4.0.
- If the student's average result over all the HE study units is at least 60% but less than 70%, the Higher Education increment will be 3.5.
- If the student's average result over all the HE study units is at least 50% but less than 60%, the Higher Education increment will be 3.0.

## Restrictions

There are some restrictions on how certain combinations of studies may be counted for an ATAR.

In each of the study areas of English, mathematics, history, contemporary Australian studies, information technology, languages and music:

- at most two results can contribute to the Primary Four
- at most three results can contribute to the ATAR, the third being counted as a 10% increment for a fifth or sixth study

This also includes Higher Education studies. So, if an ATAR incorporates a Higher Education study increment from any of the study areas listed above, then at most two VTAC Scaled Study Scores and/or VET increments from that study area may be used.

For example, Chris has completed six studies:

- Music Performance
- Music Investigation
- Music Composition
- Music (Higher Education Scheme)
- English Language and
- Italian

When calculating the ATAR only two music studies (not including the Higher Education study) may be included in the primary four, and one other music study will be counted as an increment. Therefore the fourth music study will not contribute to the calculation of the ATAR, but will be sent to institutions for their information.

As a result the studies used in the calculation of Chris's ATAR will include a maximum of three music studies as well as English Language and Italian. The fourth music study (the lowest score) will not be included in the ATAR calculation.

There are other specific restrictions where two or more studies have similar content, or where studies have been combined.

There are no restrictions on the number of VET results that can be counted in the ATAR. However, there are industry area restrictions on VET studies similar to the study area restrictions listed above. There are 26 separate industry areas.

For further information refer to VICTER 2018 (Victorian Tertiary Entrance Requirements), available on the VTAC website: <http://vtac.edu.au/pdf/publications/victer2018.pdf>

# How is the ATAR calculated?

The following process is used to calculate each student's ATAR.

All Study Scores are scaled to adjust for the fact that it is more difficult to obtain a high Study Score in some studies than others. This is NOT because some studies are inherently harder than others. This IS because some studies attract a more competitive cohort of students than others. Once they have been scaled, they are referred to as VTAC Scaled Study Scores.

An aggregate is calculated by adding:

- a student's best VTAC Scaled Study Score in any one of the English studies, plus
- the VTAC Scaled Study Scores of their next best three permissible studies, plus
- 10 per cent of the VTAC Scaled Study Score for a fifth study (where available), plus
- 10 per cent of the VTAC Scaled Study Score for a sixth study (where available).

The Scores contributing to the aggregate are subject to the study restrictions described above.

The aggregate is a number between 0 and a value over 210.

All eligible students are then ranked in order of their aggregate, and a percentage rank is assigned to distribute students as evenly as possible over a 100 point scale. All students with the same aggregate receive the same percentage rank. If a number of students are tied on a particular Aggregate the number that receives the corresponding percentage rank may increase.

Finally, the percentage rank is converted to an ATAR, which is the estimate of the percentage of the population in the relevant age group that the student outperformed, taking into account the students who have successfully completed VCE as well as those who moved or left school before Year 12.

The ATAR is a number between 0 and 99.95 in intervals of 0.05. The

highest rank is 99.95, the next highest 99.90, and so on. The lowest automatically reported rank is 30.00, with ranks below 30.00 being reported as 'less than 30'.

A complete list of studies and VTAC Scaled Study Scores used in the calculation of a student's ATAR is included on their ATAR statement.

## Why are VCE results scaled?

Each of a student's Study Scores provided by the VCAA is calculated from the total marks the student receives for each graded assessment in that study. The Study Scores for all studies are reported on a scale of 0 to 50 with an average score of 30.

The Study Score is not a score out of 50. It is a ranking or relative position which shows a student's performance compared with all other students who took that study in that year. A student with a Study Score of 30 is in the middle of the cohort, or has performed better than about half of all students who took that study in that year. A student with a Study Score of 40 has performed better than about 91% of all students who took that study in that year.

What this means is that the middle student in any study will have a Study Score of 30, regardless of how strong the other students were in the study and how difficult it was to achieve the middle ranking.

VTAC's role is to provide a way of ranking students that is fair to students, regardless of the studies they have taken.

Where the student competition in a study is higher, Study Scores have to be adjusted upwards, otherwise students doing that study would be unfairly disadvantaged.

## How does scaling work?

VTAC adjusts the Study Scores for each study to take account of how strong the students were in the study and how difficult it was to achieve the middle ranking. The strength of competition in each study is measured by how well the students performed in all their other studies.

In each study, the Study Scores are adjusted so that the overall level of scores in that study matches the scores obtained by the same group of students in all of their studies.

For example, in Chemistry in 2014 the average Study Score was 30, but the students who took Chemistry averaged 34 for all their studies (including Chemistry). This shows that the students who did Chemistry in 2014 were of above average strength in their other studies. Therefore, the scaling process adjusted the Study Scores upwards so that the average VTAC Scaled Study Score for Chemistry was set at 34.

The 2014 Drama students averaged 27 in all their studies (including Drama). So, the scaling process adjusted the Study Scores downwards so that the average VTAC Scaled Study Score for Drama was 27.

In some studies the scaling process produces VTAC Scaled Study Scores that are greater than 50. They can go as high as 55. However, the minimum VTAC Scaled Study Score cannot go below zero.

VCE studies are always scaled in the year in which they were undertaken. This may not necessarily be in the year in which a student receives their ATAR.

This scaling process is carried out each year for each VCE study and VCE VET program for which there is a Study Score. There are no predetermined outcomes—the adjustments are based on the performance of students each year. Nevertheless, the process is very stable and there is little difference in the scaled VTAC Scaled Study Scores from year to year.

## Mathematics and Languages

### Mathematics

VCE mathematics studies are designed to cater for students of differing abilities and interests. Specialist Mathematics is the most difficult, followed by Mathematical Methods (CAS) and then by Further Mathematics.

To ensure that students undertaking the more difficult mathematics studies are not disadvantaged, all three mathematics studies are scaled against each other as well as being scaled against all other studies. The higher of the two resulting scales is used.

### Languages

As a result of government policy to encourage the study of languages, each Language is adjusted up by adding five to the initial VTAC Scaled Study

Similarly, in a study where the student competition is lower, the Study Scores have to be adjusted downwards, otherwise students doing that study would be unfairly advantaged.

Scaling ensures that it is possible for students to attain a high ATAR regardless of the combination of studies they undertake.

This is not always well understood and many students believe that to achieve their best possible ATAR they need to choose studies that are scaled up. This is not true and may even work against them.

If a student chooses a study that they are not very good at simply because it will be scaled up, the Study Score they receive will be a lot lower than what they would expect in a study they are good at and that interests them. Yes, the score will be scaled up, but from a lower Study Score. It is unlikely that the VTAC Scaled Study Score would be any higher than if they had chosen a more suitable study, even one that is scaled down.

The way to ensure that a student achieves the best ATAR is to choose studies according to what interests them, what they are good at, and what studies they need for future study.

The calculation of the ATAR is a complicated process, but it is the fairest system developed by experts which allows students to undertake the studies they want and enables tertiary institutions to compare students who have completed different combinations of VCE studies.

The use of the ATAR guarantees that all studies are treated equally and provides students with a common score for tertiary selection across Australia.

Score average. All students of a Language receive an adjustment, but it is not a uniform adjustment. For VTAC Scaled Study Scores at or close to the average, the adjustment is 5, but the adjustment decreases as the score moves away from the average. It is important to remember that the additional points are added to the VTAC Scaled Study Score and therefore the Aggregate—they are not added directly to the ATAR.

## Other variables

### Previous VCE studies

VCE studies are always scaled in the year in which they were undertaken. This may not necessarily be in the year in which a student receives their ATAR.

### Further VCE study

Students who have previously obtained an ATAR, but have undertaken further study resulting in an additional Study Score or Increment, are eligible to have their ATAR recalculated. The higher of the two will be recorded and reported as their ATAR. Ranking for courses will be based on the highest ATAR achieved. VTAC will, however, inform course selection authorities of all of an applicant's VCE results—including those not contributing to their ATAR.

## Notional ATAR

A 'Notional ATAR' is used to rank students who have a previous Year 12 (other than VCE) or some other qualification (e.g. the International Baccalaureate, also known as the IB).

### A Notional ATAR is created for:

- all applicants who successfully completed a full Victorian Year 12 attempt prior to 1992,
- all applicants who (without having successfully completed a full Victorian Year 12 attempt prior to 1992) have for the first time, at least four Study Scores and VCE (HSC) 'Group 1' subjects, or their predecessors in combination including any one of the English group (i.e. at least four scorable subjects), and
- all International Baccalaureate students who qualify for the IB Diploma in the current year.

Note: Only Victorian IB students who sit the GAT will be issued with a Notional ATAR statement.

## Interstate use of the ATAR

If a student has applied to institutions in other Australian states they will be considered on the basis of their ATAR.

## Interrupted study status

Applicants granted official interrupted study status by the VCAA should seek advice from VTAC about the applicability of rules and provisions in this publication. In general, the rules that require completion of Units 3 and 4 in the one year do not apply to applicants granted interrupted study status in the studies concerned.

## Example of a 2014 ATAR calculation

Year	Study	Results	Study Score	VTAC Scaled Study Score	Contribution
2014	English Language	SS	37	39.93	39.93
2014	Philosophy	SS	38	38.79	38.79
2014	History: Revolutions	SS	36	36.23	36.23
2014	Sociology	SS	38	34.05	34.05
2013	Psychology	SS	33	32.21	3.22
2014	Literature	SS	28	28.66	2.87
<b>Aggregate</b>					<b>155.09</b>
<b>2014 ATAR</b>					<b>87.55</b>

### Notes:

- The entire VTAC Scaled Study Score contributed for the Primary 4 studies, while the next two studies each contributed 10% of their VTAC Scaled Study Score.
- Some studies were scaled up while others were scaled down.
- One study from 2013 was included.

Remember, there is no pass or fail ATAR. Every VCE student who receives an ATAR has successfully completed the VCE. An ATAR of 50 is not the pass rank, nor is it the average rank. An ATAR of 50 means a student has performed better than 50% of the state population in the relevant age group.



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