

ENTER into Tertiary Study

A Guide to the Equivalent National Tertiary Entrance Rank

August 2004

The assistance of the Victorian Curriculum and Assessment Authority (VCAA) and many principals, teachers and students in Victoria's secondary schools is gratefully acknowledged.

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Contents

The story in brief ...	
Tertiary selection.	2
How the ENTER is used.	2
VCE results.	2
Scaling.	3
Determining the ENTER.	3
Choosing VCE studies.	4
The story in more detail ...	
Tertiary study.	4
Applicants.	4
Tertiary selection.	5
Why an ENTER is needed.	5
How the ENTER is used.	6
Measuring VCE performance.	7
The need to scale.	9
Some extra information about scaling.	14
Calculating the ENTER aggregate.	14
Determining the ENTER.	15
Choosing VCE studies.	17
Dangers in study selection.	17
Combinations of studies.	18
Actual examples illustrating scaling, aggregation and 2003 ENTER calculation	18
Some examples of high ENTERS.	24
Data on combinations of studies and resultant average ENTERs.	26
Notes	28

The story in brief . . .

Tertiary selection

Each year more than forty thousand students who complete the VCE in Victorian Secondary Schools apply for tertiary places in courses offered in Victoria's universities, TAFE institutes and other provider institutions.

In the majority of the 3000 plus courses offered, there are more applicants than there are places. Each institution therefore needs to **select** from the applicants those who will receive offers. Selection officers in the institutions handle this process.

The Victorian Tertiary Admissions Centre (VTAC) assists tertiary institutions with selection. VTAC runs the application and offer processes, and provides information about the applicants (including VCE information) to the selection officers. Because of this, students are able to indicate the order of preference they have for the tertiary courses for which they are applying.

In selecting students, course selection officers largely use information about each applicant's VCE performance. The information used, and how it is used, varies from course to course.

First, a student must satisfy any VCE prerequisites for the course. Students not satisfying the prerequisites are generally not considered further for the course.

The second factor used in selection is an overall measure of how well the student has performed in his or her VCE studies. This measure is called the **Equivalent National Tertiary Entrance Rank (ENTER)**. The name ENTER emphasises that the purpose of the ranking is only to compare different applicants for tertiary entrance, not to summarise VCE performance for other purposes such as employment. ENTERs are only calculated for students who have been successful in their VCE studies and have met tertiary entrance requirements. How important the ENTER is in selecting students for a course depends on the selection criteria of the course concerned.

Depending on the selection criteria for the course, a third set of considerations may also play a role in selection. These considerations could include interviews, detailed consideration of the student's VCE results, work experience, auditions, or the assessment of an art folio. Applications for special consideration are also taken into account.

How the ENTER is used

Nearly all courses make some use of the ENTER, but in no course is selection of all students based on the ENTER alone.

For some courses (about half) it is used to select a large percentage of students. In these courses, selection for up to about 80% of places for students completing the VCE is determined by the ENTER.

For the remainder of places in these courses, additional information is considered. Students considered for these places are said to be in the **middle-band**. These students do not have ENTERs high enough to guarantee automatic selection, but have ENTERs above that which leads to automatic rejection. They are in 'the middle-band', and they are evaluated in accord with the middle-band criteria laid down in the *VTAC Guide* for the course concerned. Such criteria often include performance in prerequisite studies, more detailed consideration of VCE results, results in particular graded assessments and/or studies, interviews, and applications submitted under access and equity schemes.

For other courses (about half), the ENTER plays a lesser role. Each of these courses has an index of selection criteria, and the student's ENTER is only one of the items in the index.

The role the ENTER plays for some courses is quite major, but for others quite minor. The ENTER may be used:

- ◆ to select a group of students who will be considered further against the other criteria;
- ◆ as one of a number of ranking criteria;
- ◆ only to indicate eligibility for selection, and not as a ranking criterion at all.

For each course the index of selection criteria is laid down in the *VTAC Guide* under 'Selection Mode'.

VCE results

The Victorian Curriculum and Assessment Authority (VCAA) awards **study scores** to students who satisfactorily complete Units 3 and 4 of a VCE study. These study scores, based on the graded assessment tasks and examinations in the study, give students a **ranking** in the group (or **cohort**) of students taking that study across the state in that year. The ranking of students in the cohort is determined by detailed evaluation of the students' performances in the graded assessments for that study.

A study score of 50 indicates that the student has finished at the top of the cohort. A study score of 0 indicates that the student has finished at the bottom of the cohort.

A study score of 30 indicates that the student has finished in the middle of the cohort. Study scores are awarded so that they cluster around 30. For any study, about 70% of students get a study score between 23 and 37.

VCAA does not determine any measure of overall performance in the VCE. VTAC uses study scores as a basis for determining a student's ENTER. The ENTER is an overall ranking based on VCE performance, but one which is only designed for use in tertiary selection.

Scaling

The calculation of the ENTER for a student takes account of three facts. First, apart from the English requirement, VCE students have no set studies to take at the level of Units 3 and 4. Comparing students using the ENTER involves comparing students who may have taken very different combinations of VCE studies.

Secondly, all studies count equally in determining the ENTER. Study scores however, only give the *ranking* of the students in each study. To compare rankings and study scores *fairly* from study to study requires that the *strength of competition* in each study is about the same. It is like asking 'is coming tenth in the Boston marathon as good as coming tenth in the Sydney marathon?' Before we can answer the question we need to know how strong the competition was in each marathon field. They are comparable performances only if the strength of competition was about the same.

Thirdly, students should be able to take the studies that they enjoy, that they need, and that they are good at. The ENTER should be calculated in such a way as to allow this to happen, and not to introduce any other factor which interferes with the student's choice of studies.

Scaling is a process which adjusts VCAA study scores to take account of these three facts before using the scores to calculate the ENTER. VCAA study scores are adjusted by VTAC to allow for any variation in the strength of competition between the cohorts of students taking the various studies that year. Thus students taking various combinations of studies can be compared, and students can choose their studies in a sound way without fear that they will be disadvantaged by the choice.

If a variation is required to reflect the strength of competition in that study that year, the scaling process adjusts VCAA study scores to become **ENTER subject scores**. The strength of competition in a study is judged by looking at the *total performance* of the cohort of students taking that study. That is, the performance of that group of students in all their VCE studies is compared with their performance in that study. This comparison is carried out for each VCE study.

The scaling process leaves a top VCAA study score as a top ENTER subject score, and never lowers a top score of 50. Bottom scores of 0 are also unchanged.

Scaling usually affects VCAA study scores most at the mean study score of 30. The score may stay the same, it may be adjusted up, or it may be adjusted down.

After scaling, ENTER subject scores across studies can be fairly compared. A student taking a study where the competition was strong may have that competition reflected in a lower VCAA study score rank, but scaling will compensate for the strength of competition by giving a higher ENTER subject score. Another similar student taking a study where the competition was weaker may have achieved a higher VCAA study score rank, but scaling will bring the score close to the result for the other student. In the end a balance is achieved, and similar students finish up with similar ENTER subject scores, no matter what studies they choose to do.

There are two complications to scaling. First, the three mathematics studies are of graded difficulty and they are scaled to ensure comparability within the mathematics group. Secondly, languages other than English (LOTEs) have an adjustment of 5 points upwards to their means after the initial but prior to the final scaling. This LOTE adjustment was introduced at the request of the Victorian Government to encourage the study of LOTEs.

Determining the ENTER

All students receiving an ENTER have been successful in that year's VCE class. There is no notion of pass or fail involved, as an ENTER is only awarded to successful students.

Some students apply to study interstate and/or in different years to the one in which they complete Year 12. So, the ENTER needs to be comparable from year to year and from state to state as far as possible. In 1996 the states agreed on a method for achieving this comparability. The method takes into account the percentage of the age group that stays at school till year 12, and where those who are not eligible for an ENTER might have come in the ranking. The percentage ranking amongst completing VCE students in a year is created first using the ENTER subject scores, and then an additional procedure works out the ENTERs by estimating where the ranking of the other people in the age group would have been.

The ENTER is determined in three steps. It is based on the ENTER subject scores in the best English study [chosen from English, English (ESL), English Language and Literature] and at least three other studies in an allowable combination. The scores need not all be from the one year. Please note that a small number of courses may take into account, as part of middle band consideration, the time taken to complete the VCE studies.

First, an **ENTER aggregate** is found by adding the ENTER subject score for the best English study, the next best three ENTER subject scores (of an allowable combination), and 10% of any fifth and sixth ENTER subject score that is available. Up to two scored VET sequences may be included in the primary four. A third may count as an increment. Unscorable VET sequences may count as the fifth and/or sixth increment by adding ten percent of the average of the primary four. The increment for the sixth study may be

replaced with the appropriate increment for an approved university study as part of the VCE extension study program; that is to say, an approved university increment can only be used if there are already 4 ENTER subject scores and an increment available.

At most six results (at most three of them being for VET sequences) contribute directly to the ENTER aggregate. Where more than six results are available the six legitimate results yielding the highest ENTER aggregate are used.

The ENTER aggregate is a number between 0 and a something over 210.

Secondly, all eligible students are ranked in order of their ENTER aggregate, and a percentage rank is then assigned with (as far as possible) an even distribution amongst the students who have received an ENTER aggregate that year. All students with a particular ENTER 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.

Thirdly, the percentage rank is converted to an ENTER, which is the estimate of where the student came in the relevant age group, taking account of the students who have successfully completed VCE as well as those who moved or left school before Year 12. This is achieved using a method agreed to by all states.

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

Choosing VCE studies

The ENTER is designed so that it should not affect a student's choice of VCE studies. While scaling may raise the study scores in some studies, the increase occurs only when the strength of competition is high. Scaling lowers the study scores of other studies where the strength of competition is low. The strength of competition is measured by the total VCE performance of the students taking the study in that year.

Scaling and strength of competition thus *balance out*. This leaves students free to choose their studies on the right kinds of educational grounds: what they enjoy, what they are good at, and what they need - given their intended future studies or careers.

In particular there is no bias favouring the sciences over the humanities, or any other particular combination or focus of study. Sometimes particular combinations or studies reinforce each other, but that applies equally to the sciences, the humanities and other areas.

The LOTE adjustment is an incentive for the student to keep studying a LOTE, provided that the student has a reasonable background or performance level in that LOTE. There is no imperative for a student to maintain a LOTE in order to achieve a high ENTER.

Although scaling is not predetermined, since the introduction of study scores and the current scaling methodology in 1994, fluctuations in each year's scaled mean have generally been slight.

The story in more detail . . .

Tertiary study

Tertiary study means study in courses that normally require completion of secondary education as an entry level.

There are many institutions that provide courses of tertiary study: universities, TAFE institutes and a number of other providers.

Applicants apply for most tertiary courses in Victoria through the Victorian Tertiary Admissions Centre (VTAC). VTAC is jointly operated by the universities and TAFE institutes of Victoria. Applicants for courses through VTAC obtain all the relevant information from the *VTAC Guide*, which is published each July. Timely applications close in late September. The *VTAC Guide* is a crucial publication as it lists the courses available, gives the details of how to apply, gives details of prerequisites for each course, and gives information about how selection is determined for each course. The information contained in the *VTAC Guide* together with a web-based application form is available on VTAC's web site at www.vtac.edu.au

Applicants

Many people apply for tertiary courses through VTAC each year. In 2003 there were 78,906 applicants for 2004 entry.

Some applicants have studied at tertiary level before, some are in the work force and some are returning to study after a long break. But by far the largest number of applicants for Victorian courses is students who are completing secondary schooling in the year of application, or in the previous year or two. A crucial element in their application will be their end-of-secondary-schooling results.

Most of these students are applying on the basis of their results in the Victorian Certificate of Education (VCE). There were 39,744 applicants in 2003 who had just completed their VCE and were non-international student visa holders. Some others apply on the basis of the International Baccalaureate (IB) or have interstate end-of-secondary-school results or are international student visa holders completing VCE or IB in Victoria in the current year.

This booklet concentrates on information for students who are applying on the basis of VCE results.

VTAC Data on 2003 Applications for 2004 undergraduate entry.

VTAC Institutions:

14 universities	2511 courses
20 TAFE institutes	653 courses
24 Independent tertiary colleges	223 courses

Applicants:

39,360 Current local VCE students with an ENTER
1,899 Current International VCE students
512 International Baccalaureate students
37,135 others
78,906 Total

Offers:

57,767 first round
14,257 other rounds
72,024 total

(An applicant can receive multiple offers. There are at least three rounds of offers overall, and non-overseas applicants may receive both a fee-based and Government subsidised – Commonwealth Supported Places (CSP) – offer in any round. Overseas applicants may receive only one full-fee offer in the first round.)

Tertiary selection

For the majority of tertiary courses in Victoria, there are more applicants than there are available places. Thus **selection** needs to take place.

To enable choice between applicants, there needs to be a ranking of applicants to allow selection against the specified selection criteria for the course (as laid down in the *VTAC Guide*).

The first element in the ranking will be to check that the applicants have satisfied the **prerequisite study requirements** specified for the course. These are set out in the *VTAC Guide* but are also announced more than two years in advance in a VTAC publication specifying Tertiary Entrance Requirements (e.g. VICTER 2005, published in July 2002, for 2005 entry).

The second element in the ranking of students applying on the basis of their VCE results is an overall measure of how well each student has performed in his or her VCE studies. This measure of overall VCE performance is called the **Equivalent National Tertiary Entrance Rank (ENTER)**.

A student's ENTER is determined by the student's total record of study scores for Units 3 and 4 of VCE studies. The studies may be spread over more than one year. An ENTER is determined for each student who qualifying for the VCE was awarded a study score in at least one VCE study in that year or qualified for the VCE for the first time in that year, and who has a record of VCE study scores which includes an English study, and at least three other studies in a permissible combination. So an ENTER is determined only for *successful* VCE students.

IB students are allocated a *notional* ENTER on the basis of their results and an approved equivalence table. The approved equivalence table is formulated following agreed analyses of the current ENTER aggregates and Victorian IB scores in terms of results in a common test (the Victorian GAT). Victorian IB students are awarded a notional ENTER only if they sit the GAT.

For most interstate students, the ENTER is the same as the score in their home state. For example, an ENTER of 81.00 in Victoria = a UAI of 81.00 in NSW/ACT = a TER of 81.00 in South Australia/Northern Territory, Western Australia and Tasmania. Thus an ENTER will be treated in these states in the same way as a local score would be treated and vice-versa. Queensland uses OPs provided by the Board of Senior Secondary School Studies Queensland. For applicants who apply for admission through VTAC who have completed Year 12 in Queensland since 1997, the Board provides VTAC with an equivalent Victorian ENTER. An Australasian Year 12 Results conversion table is prepared each year with the previous year's conversion table being published in each tertiary admission centre's Guide.

There is a table giving equivalencies for prerequisite studies on the VTAC website.

IB and interstate students are then, where possible, treated in the same way as VCE students.

Why an ENTER is needed

It is important to understand why an overall performance measure in the VCE, like the ENTER, is needed.

Selection requires ranking applicants for a course in a fair and equitable way. Yet there may not be much directly comparable information about two applicants who have completed the VCE. They will all have a study score for an English study. They will have some other common studies or studies in common areas if there are prerequisites for the course. But in general students who have done very different studies, and who have very different study scores across the studies they have completed, will be compared.

VCAA runs the VCE and provides study scores for each student in Units 3 and 4 of the studies they satisfactorily complete. But VCAA provides neither scores that can be compared *across* studies, nor an overall measure of VCE performance. That is why VTAC determines an ENTER for each student completing a VCE program.

A VCE student receives two or three reports by mail. Two communications from VCAA giving the student's VCE results, and (for applicants through VTAC) a statement from VTAC giving the ENTER together with the associated ENTER subject scores and aggregate.

How the ENTER is used

The ENTER is an important measure in the selection process. Without it, selection would be more complex, less equitable and difficult to achieve. A measure like the ENTER is used in every state of Australia. It has given students a much greater freedom in their choice of studies.

The ENTER plays different roles in the selection process for different courses. In all courses it plays some role, but in no course is selection of all students based on the ENTER alone.

For most courses, having an ENTER is a basic requirement of eligibility for selection for students completing the VCE. Without the ENTER or its equivalent, students are not eligible to be selected.

For one group of courses, the ENTER is only one factor in the selection process, and for some of these it is only a minor factor. In these courses selection is on the basis of an **index of selection criteria**. The ENTER may or may not be one of the criteria. Other criteria could include an academic evaluation of an art folio, an audition, an interview, references or profiles, and so on.

For some courses, the ENTER is used to select a manageable group of applicants who are then evaluated against the index of selection criteria. When, for example, there are too many applicants to audition or interview, an initial selection is made on the basis of the ENTER. The applicants are then re-ranked on the basis of the selection criteria used for the course.

A 2003/2004 example of course selection using the ENTER to indicate eligibility, but having an index of criteria for ranking eligible applicants:

RMIT University, Osteopathy

Selection Mode: *Current Year 12 students:* Minimum ENTER: 80.00, RMIT University Osteopathy Information form, possible interview.

Extra Requirements: *All applicants* must complete and return the RMIT University Osteopathy Information form by 30 September to the Selection Officer - Osteopathy, Department of Complementary Medicine, RMIT University, PO Box 71, Bundoora VIC 3083. Access the form at www.rmit.edu.au/programs or telephone (03) 9925 7596 to obtain the form. *Current Year 12 Students who receive an ENTER of at least 80.00 must telephone (03) 9925 7596 to arrange an interview which will be held in mid-late December.*

Many of the tertiary courses which VTAC handles make only limited use of ENTER, as described above.

The other tertiary courses fall into a second group which make further use of the ENTER in the selection process, using what is called **two-stage selection**. The applicants who have satisfactorily completed the prerequisites for the courses are ranked by their ENTERs. A certain percentage of places is then offered on the basis of the ENTER ranking. It may be 30% or 50%, but it is not usual for it to be more than 80%. Around 20% or more of places are determined in the second stage of selection, which considers applicants who fall into the **middle-band**.

Applicants in the middle-band do not have a high enough ENTER to give them automatic selection, but their ENTERs are high enough to warrant further consideration. These middle-band applicants are re-ranked in line with the criteria given in *the VTAC Guide* for the course. The criteria typically include a more detailed consideration of each student's academic record and any application for special consideration. The criteria however, could also involve such things as interviews, performance in specific assessment components, performance in prerequisite studies, and so on.

It is important to realise that while an ENTER is an essential part of the selection process, it is only *part* of that process.

The ENTER makes the selection process manageable, and so it is needed simply on practical grounds. However, for a great many courses, there is another reason for its use. Generally, overall performance in the VCE is a good indicator of future tertiary success, and course selection officers are trying to pick students who are most likely to succeed. So it is important to have the ENTER as a factor in selection.

Two examples of first round two-stage selection in 2003/2004

Environmental Engineering, Monash University, Clayton

- ◆ Round 1 Clearly-In ENTER 86.20. Automatic selection above this ENTER.
- ◆ Round 1 Fringe ENTER 78.95: 95% of offers were above this ENTER. Above this ENTER, students were generally given consideration in the middle band.
- ◆ In round 1 26.67% of offers were below the Clearly-In ENTER.

- ◆ Middle band selection criteria: (Applicants will be considered on the basis of the full range of their VCE studies and results with particular attention to results in prerequisite studies.) A study score of at least 20 in specialist mathematics = an ENTER up to 3 points higher. A study score of at least 20 in physics and in chemistry = an ENTER up to 2 points higher.

Arts, University of Melbourne, Parkville

- ◆ Round 1 Clearly in ENTER 93.00. Automatic selection.
- ◆ Round 1 Fringe ENTER 86.00: 95% of offers were above this ENTER. Above this ENTER, students were generally given consideration in the middle band.
- ◆ In round 1 32.35% of offers were below the Clearly-In ENTER.
- ◆ Middle-band selection criteria: Consideration given to study scores and external examinations in prerequisite studies and in any of contemporary Australian society, classical societies and cultures, geography, history (any), international studies, literature, LOTE (any), philosophy, political studies, psychology, religion and society, or texts and traditions.

Measuring VCE performance

In each non-VET VCE study the Victorian Curriculum and Assessment Authority requires students to complete three graded assessments. These assessments are reported as letter grades: A+, A, B+, B through to E+, E. The grades are based on more fine-grained scores, based on specific assessment criteria.

Because these grades are based on criteria, there are no predetermined numbers for how many of each letter grade are awarded. To arrive at a common form of assessment report for each VCE study, VCAA also awards each student a **study score** for each VCE study where the student has obtained a fine-grained score for at least two of the three graded assessments and satisfactorily completed both Units 3 and 4.

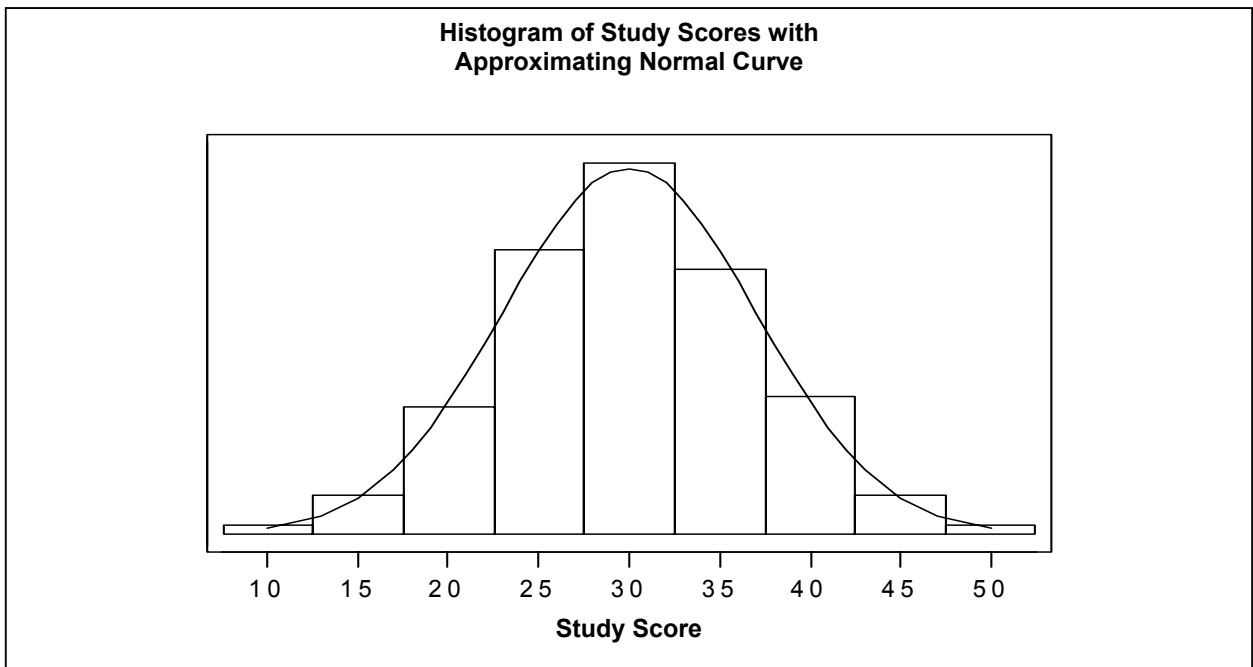
In each VCE VET study that has a study score available, students are required to complete two graded assessments – one coursework assessment and one examination. The assessments are reported as for non-VET VCE studies. A study score is awarded where the student has obtained a fine-grained score for both the graded assessments and satisfactorily completed both Units 3 and 4.

The *study score* provides the student's **ranking** in the group of all students taking that VCE study that year. It gives the student's relative position against other students taking the study. It does not directly measure performance against criteria, so it is not a mark.

Quoting from Appendix 10 of the VCE and VCAL Administrative Handbook 2004, study scores are determined in the following way for any VCE study

- For each of 3 Graded Assessments for each study, school assessments or examinations, the scores are standardised using the statewide mean and standard deviation for that assessment.
- In VCE studies, up to three standardised scores are combined according to the weightings for each study, as given in Section 2, Assessment Details in the VCE Administrative Handbook. In VCE VET scored sequences, the standardised scores for the two graded assessments are used in the calculation.
- The totals for all students with Graded Assessments for a study are sorted in descending order. This enables a rank to be computed for each student. Where students have the same total, they are given an average rank. For example, if three students have the maximum total they will each be assigned the rank of 2.
- The ranks are then normalised using an inverse normal function. The scores resulting from this transformation are distributed normally with a mean of 0 and a standard deviation of 1.
- The normalised scores are then converted to a scale with a mean of 30 and a standard deviation of 7, truncated at 0 and 50. This produces a possible Study Score ranging from 0 to 50 with the majority of Study Scores between 23 and 37.
- Further adjustments are made to studies with small numbers of students.

The following graph shows the distribution of study scores over the range of 0 to 50. The actual number of students for any study score will depend on the number of students taking the study.



Using a normal distribution means that a very large number of students get a study score around 30. In fact about 72% of students get between 23 and 37 (inclusive).

Quoting from page 100 of the VCE and VCAL Administrative Handbook 2004 –

Study scores of 23-37 indicate the student is in the middle range. A Study Score above 37 indicates that the student is in the top 15 per cent of students in the study. For studies with large enrolments (1,000 or more) the following table shows the approximate proportion of students who will achieve a Study Score higher than the stated values. For studies with fewer enrolments, the proportions may vary slightly.

Study Score (Relative Position)	Percentage of students above This position (approximate)
45	2
40	8
35	24
30	50
25	76
20	92

Therefore a VCAA study score of 30 simply means that the student is ranked in the middle of all students taking that study in that year. The grades required to achieve this can vary considerably from study to study.

Some examples of VCAA results from 2003:

The same study scores in either the same or different studies can be related to very different graded assessment performance. Here are students who achieved a study score of 40 for a study, but with different grades.

Jessica	English	40	A*A+A
Daniel	Studio Arts	40	A*A+B
Sarah	Further Mathematics	40	A*AA
Matthew	Business Management	40	A*A+A
Michael	Business Management	40	B*B+A+
Chris	Biology	40	A*A*B+
Andrew	Further Mathematics	40	AA A+
David	Accounting	40	A*A+A+
James	English	40	A*A*B+
Rebecca	Further Mathematics	40	A*B+A+

Similarly for study scores of 25

Lauren	Visual Communication & Design	25	C A D
Nicholas	Theatre Studies	25	C*B E+
Emma	Systems & Technology	25	C C E+
Benjamin	Physics	25	D B C+
Melissa	Studio Arts	25	B B E
Laura	Philosophy	25	B C D
Luke	Philosophy	25	B*B+E+
Timothy	Spanish	25	A B B

Even for the same study, different study scores can be related to the same grades because of the range of fine-grained scores behind the letter grades.

Adam	Further Mathematics	44	A*A+A
Nicole	Further Mathematics	41	A*A+A
Stephanie	Further Mathematics	39	A*A+A
Amanda	Physics	38	A A A
Thomas	Physics	36	A A A
Kate	Physics	34	A A A
Robert	Literature	50	A*A*A+
Amy	Literature	43	A*A*A+
Mark	Literature	39	A*A*A+

VCAA does not provide any overall measure of VCE performance, nor does it provide a comparative measure of performance of students *across* studies.

A 30 in Geography means the student was ranked in the middle of Geography students that year. A 30 in Chemistry means the student was ranked in the middle of Chemistry students that year. But a 30 in Geography cannot be equated with a 30 in Chemistry. We noted that the grades of students ranked in the middle of each study could be very different. And of course, how hard it was to be ranked in the middle of a cohort depends on *how strong the competition was in that study's group of students that year*.

The need to scale

Tertiary selection essentially involves cross-study comparisons because students may choose to do very different combinations from the 90 or more VCE studies that are on offer. Tertiary institutions want students to be able to take any studies that they enjoy, that prepare them well for tertiary study and in which they can achieve reasonable study scores. Study scores report only the *ranking* of the students taking any particular study.

So to use study scores to compute a summary of overall VCE performance such as the ENTER, the study scores need to be adjusted to take account of the strength of competition in each VCE study - ie. how 'hot' was the competition in each study in that year?

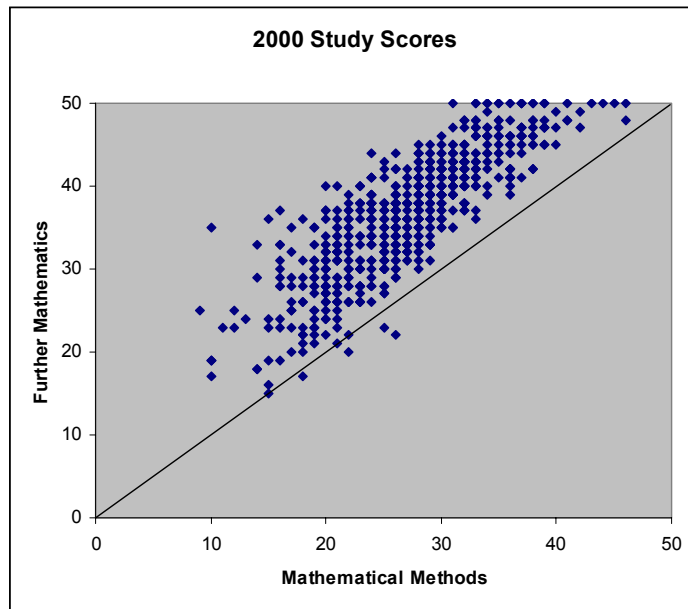
This process of adjustment is called **scaling**, and the adjusted study scores are called **ENTER subject scores**. Scaling is used in all states of Australia, and has been used in Victoria for many years.

We will start with a relatively easy case. Mathematics in the VCE is studied at three levels:

- Further Mathematics - the entry level,
- Mathematical Methods - the middle level, and
- Specialist Mathematics - the hardest level.

The studies are designed to increase in difficulty both in content and assessment components. However, all three studies build on similar skills.

The graph below shows study scores in 2000 for the 702 students who took both Further Mathematics and Mathematical Methods.

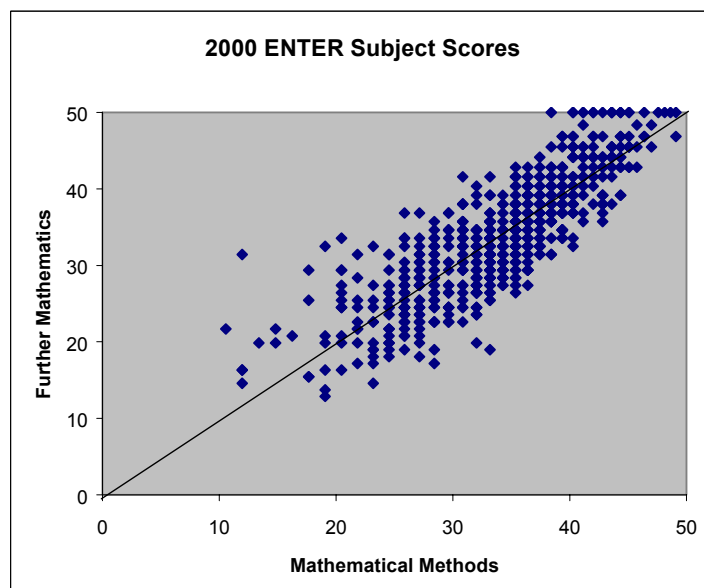


Study scores for Further Mathematics are given on the vertical axis, and study scores for Mathematical Methods are given on the horizontal axis. A black square represents the performance of a student who did both studies. The diagonal line indicates where the study scores in the two studies are equal.

The graph shows overwhelmingly that students who took both studies finished with higher study scores in Further Mathematics. Only four students had a Mathematical Methods study score higher than their Further Mathematics study score. This shows that, when we take into account *all* the students who do these studies (and not only those who do both), the competition in Mathematical Methods is stronger than it is in Further Mathematics.

So scores in Mathematical Methods need to be adjusted upwards, otherwise it is unfair to students choosing to do the study where the competition is stronger.

The graph below, shows that after scaling, the ENTER subject scores are much more balanced.



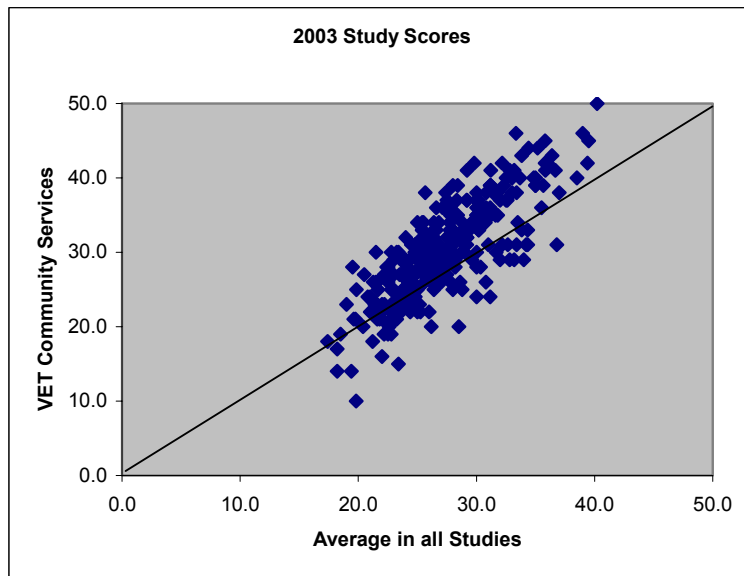
With ENTER subject scores, about half the students have a higher ENTER subject score in Further Mathematics and about half have a higher ENTER subject score in Mathematical Methods. And this happens fairly uniformly across the range of ENTER subject scores in Mathematical Methods. So, after scaling, the difference in the strength of competition has been taken into account.

Mathematics is the only area where there is a hierarchy of studies, so the above approach to scaling cannot be used more widely.

More generally, the strength of competition within a study can be estimated by the average of the scores of *all* the studies done by *all* students taking the particular study. A valid measure of the strength of competition in a particular study is thus based on the total performance of all students in the study in all the studies they choose.

So, for example, if we want to estimate the strength of competition in VET Community Services for 2003, we identify the 282 students who took VET Community Services and at least three other studies, and average all their study scores in all their studies. This measure of total performance gives a way of estimating the strength of competition.

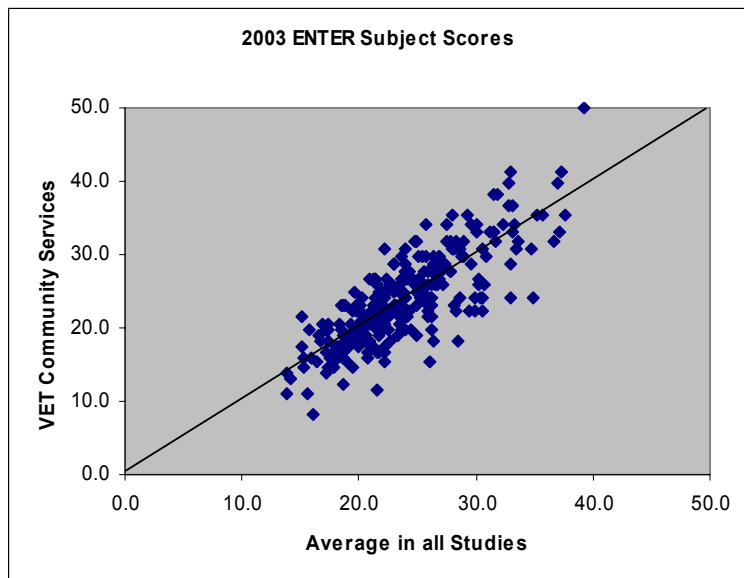
Below, is a graph showing the study scores for the students in VET Community Services in 2003 compared to the average of their study scores in all their VCE studies in 2003 or earlier.



Study scores for VET Community Services are given on the vertical axis and the average study score in all studies is given on the horizontal axis. A black square represents the performance of a student who did VET Community Services and at least three other studies that year. The diagonal line denotes equality between a VET Community Services score and the average of all the student's study scores.

The graph shows that a large majority of the students had a higher study score in VET Community Services than the average of all their study scores. That is, we could not fairly use the VET Community Services study scores without adjustment because such use would discriminate against the students taking the other studies taken by VET Community Services students.

The scaling process adjusts study scores so that after scaling, the ENTER subject scores give a balanced graph (below).



So scaling has taken into account the strength of competition in the study. About half the students have done better in VET Community Services than the average of their other studies, and for about half the reverse is true. And this happens fairly uniformly across the range of performance levels. Note that the Study Score of 50 becomes an ENTER Subject Score of 50.

The scaling process arranges things so that the mean of the ENTER subject scores for each study, the **scaled mean**, is the same as the mean or average of *all* the ENTER subject scores of the studies taken by *all* the students taking that study. That is, the scaled mean for VET Community Services is the same as the average of *all* the ENTER subject scores for the VET Community Services students in all their studies. As each of these students takes between four and six studies, this is the average of about 1200 ENTER subject scores.

So using this scaling, and using ENTER subject scores, fair cross-study comparisons can be made. Strength of competition in a study is taken into account, and students are not disadvantaged by taking a study where the strength of competition is high, or unfairly advantaged by taking a study where the strength of competition is low. The combination of using study scores, which are only rankings, plus scaling which adjusts for variation in strength of competition between studies balances out. ENTER subject scores allow fair cross-study comparisons. Because of this students can freely choose studies they like or are good at without fear of disadvantage or advantage because of the variation in the strength of competition across the studies in any particular year.

Thus a valid overall measure of VCE performance, the ENTER, can be computed, provided that scaled study scores (i.e. ENTER subject scores) are used.

Below is a table showing, historically for the duration of the current scaling methodology, the scaled means for the 99 studies that have been offered and/or have not been a small study, at least once in the period 2000-2003.

* indicates not available, ss indicates small study.

VCE Study	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Accounting	29.81	29.59	29.57	29.46	29.64	29.56	29.95	30.04	30.03	30.47
Agricultural & Horticultural Studies	22.37	22.85	23.38	22.81	23.26	23.26	23.39	23.43	23.12	23.34
Art	27.27	27.29	27.20	27.58	27.50	27.71	27.32	27.31	27.31	27.25
Australian Studies	24.06	25.03	25.90	25.04	26.60	28.54	29.28	*	*	*
Biology	30.01	29.98	30.19	30.17	30.46	30.35	30.51	30.58	30.43	30.22
Business Management	25.24	25.16	25.18	25.06	24.93	25.18	25.35	25.43	25.73	25.71
Chemistry	34.03	34.32	34.24	34.23	34.30	34.29	34.47	34.62	34.70	34.63
Classical Societies & Cultures	32.47	31.39	33.83	32.82	33.04	33.24	33.47	32.65	32.47	32.74
Contemporary Australian Society	*	*	*	*	*	*	*	25.63	25.62	25.61
Contemporary Society	26.81	25.88	26.27	26.27	26.19	26.77	24.97	*	*	*
Dance	28.14	27.57	28.09	27.87	27.77	28.13	28.10	28.23	28.86	28.20
Dance Styles	28.33	28.54	29.97	29.61	29.44	30.41	29.16	*	*	*
Design & Technology	*	*	*	*	*	*	*	22.65	23.07	23.20
Drama	26.61	27.43	27.35	27.77	27.80	28.10	28.08	28.08	28.23	27.72
Economics	30.95	30.65	30.44	30.64	30.74	30.62	31.10	31.43	31.39	31.89
English	28.65	28.74	28.54	28.57	28.57	28.57	28.58	29.05	28.50	28.40
English ESL	29.99	29.50	30.10	29.31	29.04	28.98	30.15	28.52	28.88	29.77
English Language	*	*	*	*	*	*	28.26	30.00	30.23	30.45
Environmental Science	*	*	*	*	*	*	*	26.67	28.05	28.39
Environmental Studies	25.34	25.71	26.08	26.13	26.69	26.70	27.57	*	*	*
Food & Technology	*	*	*	*	*	*	*	23.56	23.56	23.38
Geography	27.99	27.82	28.38	28.58	28.35	28.83	28.69	28.95	29.05	29.17
Health & Human Development	*	*	*	*	*	*	25.77	26.15	26.38	26.29
History										
Australian History	29.51	29.80	30.52	30.26	30.21	30.27	29.64	29.66	29.07	29.20
Renaissance Italy	*	*	*	*	*	*	34.21	34.44	34.83	34.06
Revolutions	31.93	31.50	31.88	32.47	32.10	32.11	31.93	31.88	31.73	31.34
Industry & Enterprise Studies	*	*	*	21.40	21.93	22.91	22.60	22.48	22.29	22.27
Information Technology										
Information Processing & Development	26.62	26.52	26.68	26.62	26.51	26.52	26.54	26.77	26.59	26.45
Information Systems	28.68	28.56	28.90	28.19	28.15	28.33	28.57	28.49	28.70	28.06
International Studies	31.54	31.09	30.99	31.28	31.19	30.85	30.56	31.09	30.62	31.20
Legal Studies	28.67	28.61	28.57	28.30	28.38	28.39	28.45	28.63	28.59	28.59
Literature	32.06	31.95	31.86	31.93	31.92	31.86	31.84	31.67	31.80	31.65
LOTE										
Albanian	*	*	*	-	-	-	ss	ss	ss	27.79
Arabic	31.90	30.51	29.58	30.02	29.53	29.63	30.98	28.80	29.71	30.80
Auslan	*	ss	35.39	34.38	36.49	33.99	32.74	34.43	32.86	32.34
Chinese (SL)	*	39.42	40.43	40.62	41.24	40.46	40.92	40.70	40.88	40.51
Chinese became Chinese (FL) in 1995	37.98	37.77	37.66	37.21	36.38	36.05	37.09	36.49	36.08	36.28
Croatian	32.26	33.42	32.43	31.76	30.66	32.36	33.51	30.81	30.85	30.65
Filipino	*	*	*	*	-	ss	ss	28.34	31.28	31.97
French	41.39	41.45	40.77	40.94	40.71	40.91	40.93	40.66	41.03	40.97

VCE Study	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
German	40.22	39.99	39.71	39.46	39.39	39.25	39.53	38.62	38.80	39.08
Hebrew	43.55	41.51	43.65	42.83	42.83	44.53	42.97	43.87	42.66	42.84
Hindi	ss	ss	ss	35.19	36.01	ss	ss	31.17	34.80	ss
Hungarian	33.95	ss	35.90	35.45	36.45	33.04	32.26	ss	ss	ss
Indonesian (SL)	*	*	*	38.35	38.36	38.36	37.97	38.00	37.85	37.14
Indonesian became Indonesian (FL) in 1997	39.39	38.62	37.94	35.54	34.43	36.53	36.86	35.66	35.35	34.98
Italian	34.80	34.34	34.95	34.86	34.87	34.92	34.95	34.93	35.10	35.28
Japanese (SL)	*	*	*	*	*	*	*	39.39	39.62	39.42
Japanese became Japanese (FL) in 2001	40.77	40.38	39.84	39.83	39.38	38.76	38.91	33.37	28.91	30.25
Khmer	28.15	ss	ss	33.68	30.65	28.64	29.15	29.04	28.90	28.55
Korean (SL)	*	*	*	*	*	*	*	37.11	38.86	37.84
Korean became Korean (FL) in 2001	37.52	ss	38.25	36.22	36.55	34.95	35.99	35.60	35.17	35.82
Latin	45.01	46.82	45.00	45.00	45.00	44.79	45.00	45.00	45.00	45.00
Macedonian	29.54	28.91	28.94	28.43	28.54	28.34	29.17	29.28	27.82	28.17
Modern Greek became Greek in 2001	31.67	32.22	32.13	32.30	31.48	31.95	31.05	31.00	31.77	31.49
Persian (was Farsi til 1997)	*	*	*	*	30.33	35.35	34.15	30.83	29.87	31.54
Farsi (became Persian in 1998)	33.96	29.29	31.94	33.02	*	*	*	*	*	*
Polish	35.03	34.04	34.87	34.72	34.56	33.37	34.26	33.94	34.96	35.72
Portuguese	32.39	30.29	31.89	30.15	29.81	31.60	32.87	32.28	31.51	30.90
Romanian	*	*	*	-	ss	ss	ss	30.33	29.34	33.71
Russian	39.34	41.11	38.64	37.16	37.25	36.79	35.74	36.02	34.56	35.13
Serbian	34.46	31.76	33.18	32.15	30.76	30.45	31.05	29.80	30.09	30.48
Spanish	30.27	31.45	31.82	32.29	31.10	32.10	31.50	32.03	31.09	31.52
Tamil	*	*	*	-	37.22	37.49	36.72	ss	ss	ss
Turkish	29.53	28.99	29.04	28.65	28.73	29.15	28.05	27.77	28.58	29.57
Vietnamese	31.85	30.65	31.29	31.25	31.67	31.63	32.14	32.00	31.26	32.74
Materials & Technology	22.46	22.64	22.62	22.49	22.75	22.79	22.85	*	*	*
Mathematics										
Further Mathematics	27.02	27.02	26.46	26.29	26.53	26.69	26.86	27.10	27.22	27.23
Mathematical Methods	36.21	36.69	36.26	36.09	36.33	36.49	36.66	36.90	36.62	36.00
Mathematical Methods (CAS)	*	*	*	*	*	*	*	*	38.81	36.46
Specialist Mathematics	41.08	41.95	41.17	41.02	41.22	41.19	41.56	41.74	41.24	40.91
Media	25.72	26.04	26.24	25.89	26.35	26.63	26.40	26.51	26.53	26.23
Musics										
Music Performance: Group	24.99	25.94	26.23	26.57	26.71	26.53	26.66	26.67	26.62	26.84
Music Performance: Solo	31.95	31.39	32.77	32.22	32.45	31.84	32.05	31.90	32.04	31.56
Music: History & Styles	31.54	30.57	33.04	32.28	33.38	32.51	33.54	33.86	34.54	33.72
Outdoor & Environmental Studies	*	*	*	*	*	*	*	23.72	24.77	24.42
Outdoor Education	24.20	23.56	24.27	24.09	24.11	24.77	24.79	*	*	*
Philosophy	*	*	*	*	*	*	*	30.05	30.45	30.37
Physical Education	27.75	27.44	27.71	27.59	27.68	27.69	27.43	27.66	27.50	27.43
Physics	32.79	33.26	33.06	32.79	32.83	32.83	33.00	32.92	33.08	33.04
Political Studies	32.74	32.81	32.88	33.31	33.28	33.46	32.96	33.27	33.49	33.21
Psychology	27.64	27.88	28.02	27.99	28.05	28.28	28.28	28.29	28.45	28.31
Religion & Society	29.78	30.53	29.67	29.61	29.42	28.62	28.95	28.79	28.79	28.93
Science	21.96	21.77	23.23	26.03	25.62	26.12	28.52	*	*	*
Studio Arts	25.40	25.50	26.00	25.82	25.96	26.06	26.17	26.27	26.23	25.90
Systems & Technology	21.35	21.92	22.40	21.95	22.56	22.34	22.40	22.62	23.09	22.62
Technological Design & Development	23.07	23.22	23.07	23.01	23.52	23.37	23.49	*	*	*
Texts & Traditions	31.78	32.19	33.01	32.49	32.07	32.07	31.59	32.59	31.24	31.15
Theatre Studies	27.65	27.72	28.27	28.58	28.84	29.24	29.09	29.59	29.26	29.32
Visual Communication & Design	*	*	*	*	*	*	26.23	26.58	26.48	26.45
VCE VET Arts (Interactive Multimedia)	*	*	*	*	*	*	ss	25.45	27.25	27.37
VCE VET Business (Office Admin)	*	*	*	*	*	27.47	24.98	24.52	25.43	25.41
VCE VET Community Services (Comm. Work)	*	*	*	*	*	*	*	23.72	24.87	24.15
VCE VET Dance	*	*	*	*	*	*	*	30.56	27.32	29.00
VCE VET Electronics	*	*	*	*	*	*	29.41	25.42	25.23	24.99
VCE VET Financial Services	*	*	*	*	*	*	*	*	-	27.29
VCE VET Furnishing (Cabinet Making)	*	*	*	*	*	*	*	22.73	21.73	22.14
VCE VET Hospitality (Operations)	*	*	*	*	*	ss	24.50	24.92	24.91	25.04

VCE Study	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
VCE VET Information Technology	*	*	*	*	*	*	*	-	25.52	25.83
VCE VET Laboratory Skills	*	*	*	*	*	*	*	*	33.58	ss

Some extra information about scaling

Below are some additional points about scaling. They are details that do not alter the fundamentals of the account given above.

Top scaled scores

A top study score becomes a **top scaled score**. For most studies this means a study score of 50 becomes an ENTER subject score of 50. There are, however, a few exceptions to this general principle.

There is a requirement that the ENTER subject scores of students above the scaled means are not restricted to too narrow a range. Narrowing can happen when a scaled mean goes over 40. To ensure adequate spread in these cases the top score will be allowed to exceed 50. But it may never exceed 55, and the maximum percentage of students in a study who can have an ENTER subject score which exceeds 50 is small, about three percent. A scaled mean cannot exceed 45.

Mathematics

An additional step in scaling occurs for the three mathematics studies to ensure that there is no advantage or disadvantage due to choosing between these studies. It is important that there be no disadvantage or advantage, so that students take the level of mathematics which they will most enjoy, and which might be needed as tertiary preparation, and not on the basis that doing a particular mathematics study might ensure a higher ENTER. Mathematics is the only curriculum area of the VCE where there are graded studies. So, in addition to each study being scaled in the normal fashion, the scores of students taking both Further Mathematics and Mathematical Methods are compared. If required, the scaled mean of Mathematical Methods is adjusted upwards to ensure that the mean for Mathematical Methods of the ENTER subject scores for the students taking both studies is not less than the mean of their ENTER subject scores for Further Mathematics.

A similar pair-wise comparison is made for Mathematical Methods and Specialist Mathematics.

LOTE

The State and Federal governments have adopted policies to promote the study of *Languages Other Than English* (LOTEs). An English study is of course compulsory for any student completing the VCE and seeking to enter tertiary education. In response to a request from the Victorian Government, a modification is made to the scaling of LOTE studies. After initial normal scaling, the scaled mean of each LOTE is increased by 5. The other principles of scaling are adhered to and any stated ENTER subject score for a LOTE includes this LOTE adjustment.

Small studies

Studies with very small enrolments cannot be treated statistically. The scaling of these study scores is handled individually in cooperation with VCAA.

Cross-year comparisons

Students are scaled in the cohort of students in which they were ranked. This can mean that a student who completed a single study in one year, and then completed the remaining studies the following year, does not contribute to the scaling population for the single study. A detail of the scaling process addresses this issue. The ENTER is designed to facilitate comparisons across years.

Usually for each student the ENTER subject scores are more even than the study scores. This affirms the fact that the ENTER subject scores, having allowed for the strength of competition in each study, give a better indication of a student's real comparative performance in the various studies undertaken, than do the study scores.

Calculating the ENTER aggregate

The ENTER is determined using ENTER subject scores because these scores allow for cross-study comparisons.

VTAC determines an ENTER for each student who completes at least one VCE study in a year satisfactorily, and who has obtained study scores in an English study and at least three other studies, in an allowable combination.

The ENTER is determined by the **ENTER aggregate** calculated for each student.

The ENTER aggregate is produced by adding:

- the ENTER subject score in the English study;
- the next best three permissible ENTER subject scores; (These four scores make up the Primary Four.)
- 10% of any fifth and sixth ENTER subject score that is available.

There are a few other special arrangements concerning this ENTER aggregate.

- ◆ The increment for the sixth study may be replaced by an increment of between 4.0 and 5.5 for completing an approved university study satisfactorily as part of the VCE, provided either five ENTER subject scores are available or four ENTER subject scores are available together with an unscorable VCE VET 3-4 sequence.
- ◆ A maximum of two sequences of Units 3 and 4 (with a study score) of a VET program may be counted in the Primary Four.
- ◆ A maximum of three unit 3-4 VET sequences (scored or unscorable) can contribute to the ENTER (either in the Primary Four or as an increment)
- ◆ Certain restrictions apply concerning the combinations of studies that can be used in determining an ENTER aggregate, such as not including both English and ESL, Chinese(FL) and Chinese(SL), Indonesian(FL) and Indonesian(SL), Japanese(FL) and Japanese(SL), Korean(FL) and Korean(SL) or Dance Styles and VCE VET Dance. Also VET studies deemed equivalent for VCE qualification purposes are deemed equivalent for ENTER purposes.

In general, VET in schools programs may count towards the ENTER as follows:

- ◆ An ENTER subject score, if available, either in the primary four or as an increment.
- ◆ Where a study score is formally and fully available in a program, the program will not count in the calculation if the scored assessment is not undertaken.
- ◆ Where a study score is not part of the program the program counts as an increment provided the Unit 3-4 sequence has been satisfactorily completed.

With the introduction of scored assessment in VET in Schools programs, notion of a 'transition year' was introduced to accommodate where the normal notice of availability of a study score could not be provided two years in advance. In the transition year **only**, the student could choose to receive a study score or choose not to receive a study score. Students who chose to receive the study score would have the ENTER subject score available either in the primary four or as an increment. Students who chose not to receive the study score would have an increment of 10% of the average of the primary four aggregate available. An appropriate flag identified the transition status of a VCE VET certificate scorable sequence when a student's results were extracted for VTAC, ensuring that the contribution to the ENTER was correct even if the ENTER was calculated in a year later than the transition year.

At most six results contribute directly to the ENTER aggregate. Where more than six results are available the six legitimate results yielding the highest ENTER aggregate are used.

Since 1999, legitimate one-year VCE students who undertake exactly five VCE studies may receive a double increment for their fifth study. A legitimate one-year student is defined as a student who moves to Victoria to complete Year 12 and receives credit from VCAA for Unit 1 and 2 requirements on the basis of work completed outside Victoria. In detail, the legitimate one-year increment is available only if the following conditions are all satisfied:

- No enhancement increment is available
- No TAFE increment is available
- No VET increment is available
- There are no unit 1/2 results from VCAA for VCE studies
- VCAA block credit has been granted for at least ten units at 1/2 level, obtained for study outside Victoria
- No VCAA block credit has been granted at 3/4 level
- VCAA results for 5 scored sequences at 3/4 level in the one year constitute the only attempt at VCE.

The ENTER aggregate is a number between 0 and something over 210.

Determining the ENTER

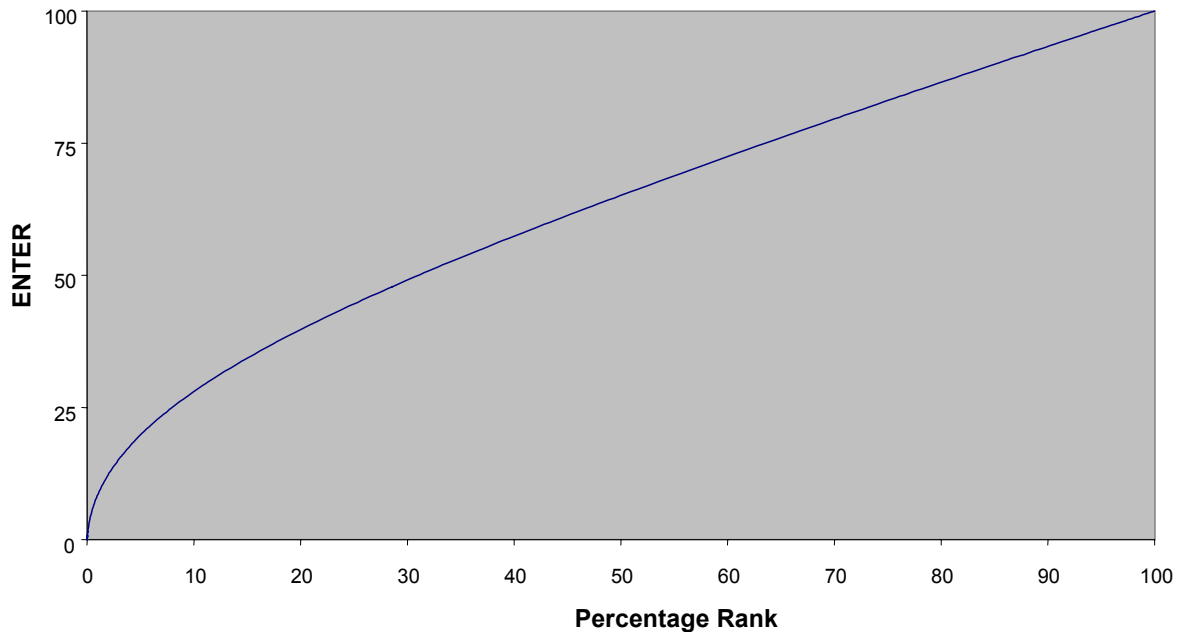
Students eligible for an ENTER in a particular year are ranked in order of their ENTER aggregates. The initial ranking is converted to a percentage ranking. A student's **percentage rank** gives the percentage of eligible students ranked below that student.

The problem with these percentage ranks is that they cannot be compared from one year to another, without an adjustment, nor can they be compared with the interstate percentage ranks for their Year 12 programs without using a complex conversion table. This is because the percentage of the age group that complete Year 12 varies from year to year and state to state.

To overcome these difficulties, the ENTER is a ranking amongst the whole age group, whether or not the individuals stayed at school to complete the VCE.

To move from the rank amongst those eligible for an ENTER to the rank in the whole age group, it is necessary to have an informed estimation about where the people who are not eligible for an ENTER would have been ranked. This is of course very difficult, but it is possible. It is based on testing of whole age groups during the compulsory years of education, and use of a methodology that has been approved by the state and federal Ministers in education. The conversion from the 2000 percentage rank to ENTER is given by the following graph.

ENTER versus Percentage Rank



It is important to remember that this last step in the calculation of the ENTER, ONLY affects

- comparison with students who have studied in other states
- comparison with students who have studied in other years.

It does NOT affect the rank order of students taking the VCE in the particular year. The rank order of students given by the ENTER is the same as that given by the percentage rank. The ENTER numbers may be higher, but the rank order is the same.

The ENTER is a number between 0 and 99.95, with an interval of 0.05 between successive ranks. The distribution of ENTERs to ENTER aggregates in 2003 is illustrated below.

ENTER aggregate table

Based on the 2003 scaling and aggregation process, the following table gives an indication of the minimum ENTER aggregate required to achieve at least a particular ENTER.

ENTER	Percentage Rank	Minimum ENTER aggregate
40.00	22.75	98.3
50.10	33.65	108.7
60.00	45.55	119.5
70.00	58.40	131.4
75.00	65.05	137.8
80.00	71.85	144.8
85.00	78.75	152.9
90.00	85.80	162.6
92.00	88.60	167.2
94.00	91.45	172.3
96.00	94.30	178.8
98.00	97.15	188.2
99.00	98.60	195.1

Note that in 2003, 652 students had an ENTER of at least 99.00

An ENTER is a measure of the student's ranking in the whole age group. There is no notion of pass or fail involved, as an ENTER is only awarded to successful VCE students.

An ENTER of 33.35 indicates that the student is a third of the way up the age group that year. An ENTER of 50.00 indicates that the student is half-way up the age group that year. An ENTER of 75.00 indicates that the student is three-quarters of the way up the age group that year. An ENTER of 99.95 indicates the student is ahead of 99.95% of all the age group that year.

Some examples of ENTERs and ENTER aggregates for 1999 through 2003:

	ENTER aggregate	1999 ENTER	2000 ENTER	2001 ENTER	2002 ENTER	2003 ENTER
A	204.5	99.75	99.70	99.75	99.65	99.75
B	201.3	99.60	99.55	99.55	99.50	99.55
C	199.7	99.50	99.45	99.40	99.40	99.45
D	196.7	99.30	99.20	99.15	99.15	99.15
E	193.9	99.00	98.95	98.85	98.80	98.85
F	191.1	98.65	98.55	98.45	98.50	98.50
G	172.6	94.50	94.30	94.05	93.95	94.10
H	161.4	90.15	90.15	89.50	89.45	89.40
I	148.6	83.50	83.50	82.55	82.45	82.45
J	130.8	71.25	71.05	70.25	69.70	69.50
K	108.6	52.70	51.90	51.85	50.25	49.95
L	94.7	40.15	39.00	40.00	37.50	36.55

Choosing VCE studies

Questions arise as to how a student should choose his or her VCE studies, and whether any study or combination of studies gives an advantage.

The best advice is to choose studies

- which the student enjoys;
- in which the student achieves well;
- that the student may need for future study or work;
- which maintain and develop the student's special skills and talents.

The scaling and selection arrangements have been designed to support this approach to subject selection. The only exception is the built-in encouragement to study a LOTE, which is designed to give a small bonus to students who persist with language study. This bonus is not so large as to over-ride the above four principles concerning study choice, but acts as an incentive to keep a LOTE when the decision is close.

A few further points on study selection

- To select studies on the basis of student achievement refers to objective high achievement against assessment criteria. It does not only refer to comparative performance within a class or cohort.
- It is to be hoped that enjoyment, skills, need and performance coincide pretty well. If not, perhaps future career plans should be reviewed.
- Some combinations of studies do seem to reinforce each other, for example Mathematics, Physics and Chemistry; English, English Literature and History. Coherence is one point to keep in mind, but some element of variety can also be beneficial.
- Many students like to keep future study options open by selecting studies that cover the prerequisites for a wide range of courses. This can have an advantage, but must be balanced against the losses when students drop studies that they like and in which they are particularly talented.

Dangers in study selection

There are a number of misconceptions concerning study selection. These can lead to dangers for unsuspecting students.

One danger is the view that students are highly advantaged by choosing Specialist Mathematics. This is because of the high scaled mean for this study.

But there are two factors that must be considered here. First, Specialist Mathematics is a study where the strength of competition is high. Second, mathematics is the only area where, by design, the studies are graded in difficulty. Specialist Mathematics is the hardest level of mathematics.

Taking these factors into account, the scaled mean of Specialist Mathematics is not unreasonably high. This can be illustrated in another way from the 1999 figures. It is reasonable to suppose that the 6017 students who took Specialist Mathematics were the best mathematics students in the State that year. Their average ENTER subject score was 41.1. Since English was compulsory, we can also determine the average ENTER subject score for the top 6017 English students. It was 40.6, not greatly different from Specialist Mathematics.

Because a student joins a group where there is strong competition, it does not mean that the student will consequently perform better. Indeed, the likely result is that the student will get a much lower study score in Specialist Mathematics than he or she would have in a study chosen in line with the recommended guidelines for choosing studies. And there is a good chance that this could

lead to a lower ENTER subject score for Specialist Mathematics than what the ENTER subject score would have been in the other study.

A second and similar danger concerns LOTEs. Some LOTEs have very high scaled means especially since, as was noted earlier, there is a built-in incentive for studying a LOTE. But the strength of competition in these LOTEs is also very high.

The inclusion of the LOTE adjustment within scaling means that any student who has LOTE skills has excellent reasons for keeping that LOTE at the VCE level. And if a student can cope with LOTE study, there is an incentive to persevere. But LOTEs should be chosen in accord with the principles for study selection that generally apply.

A third and great error is to choose studies on the basis of the previous year's scaled means. For a start the means may change. But also, a student has to ask where he or she would be likely to be placed in that study's cohort. If a student chooses a study against the suggested principles, the study score is likely to be low. If the study score is low, even with scaling that significantly raises the mean, the student will not achieve a very high ENTER subject score. Usually students will finish with higher ENTER subject scores in studies chosen in line with the selection principles, as the study score in these studies will be very much higher and the ENTER subject score will still be fairly high, even if the scaled mean is lower.

It must be remembered that the study scores are scaled to make cross-subject comparisons fair. The aim is to achieve a balance between the ranking system of study scores and the variation in the strength of competition between studies. So it is very dangerous to try to 'play the system' and allow the scaled means to influence the choice of studies.

Combinations of studies

Research has shown students can achieve very high ENTER aggregates by taking all sorts of combinations of studies. This includes the so-called vocational and technological studies. In 1997 twenty-seven per cent of students who were in the top ten per cent of students successfully completing the VCE did not have Specialist Mathematics or a LOTE, and eighteen per cent of students in the top five per cent did not have these studies.

It is also clear that students taking combinations of mathematics and science studies do not perform significantly better as a group than students taking combinations of the humanities, or of the business-oriented subjects. What can be confusing to teachers and the public is that much larger numbers of students are choosing mathematics and science-focused combinations of studies, and hence large numbers of these students do well in ENTER terms. This choice reflects many things: students keeping options open, school pathway and timetabling opportunities and practices, tertiary prerequisite patterns, positive encouragement within schools to take mathematics and science studies, and public misconceptions. However, the research shows students taking other options are not disadvantaged.

Actual examples/case studies illustrating scaling, aggregation and 2003 ENTER calculations:

Note that the names used have been randomly assigned, and are not the true names of the students.

Joshua

Year	Study	Unit 3/4	GA1	GA2	GA3	Study Score	ENTER subject score	Contribution to 2003 scaled aggregate	ENTER
2003	Accounting	SS	B+	A+	A	36	36.60	3.66	
2002	Chemistry	SS	B	A	B+	33	38.17	3.81	
2003	English	SS	A+	A+	A+	40	39.35	39.35	
2003	Health & Human Development	SS	A+	A+	A+	47	45.64	45.64	
2001	Mathematics: Further	SS	A+	A+	A+	44	41.73	41.73	
2002	Mathematics: Methods	SS	A	B+	B	35	42.13	42.13	
2002	Psychology	SS	B+	A+	B+	37	35.39	-	
2003								176.3	95.25

Remember that at most six results can contribute to the scaled or ENTER aggregate, and the results leading to the highest legitimate aggregate will always be used.

The 10% increments are truncated at two decimal places whilst the aggregate is truncated at one decimal place. Truncation is used to ensure that it is certain that the aggregate is at least the value stated. (As an example, 45.96 is less than 46 but at least 45.9.)

Note that the ENTER subject scores are more evenly distributed than the study scores, even with the studies being taken over three years.

Emily

Year	Study	Unit 3/4	GA1	GA2	GA3	Study Score	ENTER subject score	Contribution to 2003 scaled aggregate	ENTER
2003	Biology	SS	A*	A*	A*	50	50.00	50.00	
2002	Chemistry	SS	A*	A*	A*	45	47.81	4.78	
2003	Economics	SS	A	A	B	34	36.16	-	
2003	English	SS	A*	A*	A*	48	48.21	48.21	
2001	Mathematics: Methods	SS	A*	A*	A*	44	48.46	48.46	
2002	Mathematics: Specialist	SS	A*	A*	A*	43	52.24	52.24	
2001	Music Performance: Solo	SS	A*	A*	A	40	42.23	-	
2003	Physics	SS	A*	A*	A	42	44.92	4.49	
2003								208.1	99.85

Paul

Year	Study	Unit 3/4	GA1	GA2	GA3	Study Score	ENTER subject score	Contribution to 2003 scaled aggregate	ENTER
2002	Economics	SS	A*	A*	A*	40	41.44	41.44	
2002	English	SS	A*	A*	A	41	40.59	40.59	
2001	Geography	SS	A*	A*	A*	44	43.83	43.83	
2002	Indonesian (SL)	SS	B*	B*	B*	30	38.53	-	
2002	Political Studies	SS	A*	A*	A	37	40.58	40.58	
2003	Political Studies	SN	A	NA	NA	-	-	-	
2003	Psychology	SS	A*	A	A*	40	38.82	3.88	
2002	Theatre Studies	SS	A*	B*	A	39	38.66	3.86	
2003								174.1	94.65

Ryan

Year	Study	Unit 3/4	GA1	GA2	GA3	Study Score	ENTER subject score	Contribution to 2003 scaled aggregate	ENTER
2003	Accounting	SS	A*	A*	A*	40	40.84	4.08	
2003	English	SS	A	A*	A	38	37.02	37.02	
2003	Legal Studies	SS	A*	A*	A*	41	40.86	40.86	
2003	Mathematics: Further	SS	A	B*	B*	36	33.00	-	
2002	Outdoor & Environmental Studies	SS	A*	A*	A*	45	41.99	41.99	
2003	Physical Education	SS	A*	A*	A*	43	41.56	41.56	
2002	VCE VET Sport & Recreation	SS	Unscorable				NA	4.03	
2003								169.5	92.95

The successfully completed unscorable VET program is eligible for a VET increment which is 10% of the average of the Primary Four, in this case being 10% of $(37.02 + 40.86 + 41.99 + 41.56)/4$ or 10% of $161.43/4$ or 10% of 40.3575. As in all cases of increments, truncation is used.

Michelle

Year	Study	Unit 3/4	GA1	GA2	GA3	Study Score	ENTER subject score	Contribution to 2003 scaled aggregate	ENTER
2003	Accounting	SS	C	B	B	29	28.89	28.89	
2003	English	SS	A*	A*	C	33	31.19	31.19	
2003	Legal Studies	SS	A*	A	A	38	37.42	37.42	
2003	Mathematics: Further	SS	B*	C*	C*	30	26.89	26.89	
2003	Approved Uni. Enhancement Study	Medium Result				NA	-		
2003								124.3	64.20

Although Michelle had successfully completed an approved University Enhancement Study, the Enhancement result could not contribute to her ENTER as she had fewer than five VCE study contributions available.

John

Year	Study	Unit 3/4	GA1	GA2	GA3	Study Score	ENTER subject score	Contribution to 2003 scaled aggregate	ENTER
2003	Biology	SS	C+	E	C+	30	30.09	30.09	
2003	Chemistry	SS	E	D	D	22	25.66	2.56	
2003	English	SS	A	A	B	33	31.19	31.19	
2003	English Language	SS	B+	B	D	27	26.22	26.22	
2003	Mathematics: Methods	SS	D	E+	E+	22	27.72	27.72	
2003								117.7	58.30

Once again the ENTER subject scores are less variable than the study scores.

Lisa

Year	Study	Unit 3/4	GA1	GA2	GA3	Study Score	ENTER subject score	Contribution to 2003 scaled aggregate	ENTER
2003	English	SS	C+	B	D	25	22.14	22.14	
2003	Philosophy	SS	C+	D+	E+	23	21.14	2.11	
2003	Studio Arts	SS	A+	A+	C+	36	31.60	31.60	
2003	Visual Communication & Design	SS	A+	A+	C+	36	32.26	32.26	
2003	VCE VET Arts - Multimedia	SS	B+	C		31	28.11	28.11	
2001	VCE VET Music Skills - Technology	SS	Unscorable				NA	2.85	
2003								119.0	59.50

Lisa completed both a scorable and an unscorable VCE VET study at units 3/4. The successfully completed unscorable VET program is eligible for a VET increment which is 10% of the average of the primary four, in this case being 10% of $(22.14 + 32.26 + 31.60 + 28.11)/4$ or 10% of 114.11/4 or 10% of 28.5275. As in all cases of increments, truncation is used.

Peter

Year	Study	Unit 3/4	GA1	GA2	GA3	Study Score	ENTER subject score	Contribution to 2003 scaled aggregate	ENTER
2003	English Language	SS	A+	A+	A+	50	50.00	50.00	
2003	LOTE: Chinese (SL)	SS	A+	A	B+	32	44.27	4.42	
2003	LOTE: French	SS	A+	A+	A+	45	52.02	52.02	
2002	LOTE: Korean (SL)	SS	A+	A+	A+	49	50.88	50.88	
2002	Mathematics: Methods	SS	A+	A+	A+	49	50.25	5.02	
2003	Mathematics: Specialist	SS	A+	A+	A+	48	54.46	54.46	
2002	Psychology	SS	A+	A+	A+	42	41.02	-	
2003	Approved Uni. Enhancement Study	Low Result					NA	-	
2003								216.8	99.95

The results contributing to the scaled aggregate are those legitimately providing the highest possible aggregate.

A low Enhancement Increment being 4.0. the approved University Enhancement result did not contribute to the ENTER, nor did the seventh VCE result, Psychology, having Peter's lowest available ENTER subject score.

This example illustrates both that at most six results can contribute to the ENTER, and that the ENTER subject scores are less variable than the study scores.

It is worth noting that even had Peter done better in Chinese (SL) achieving an ENTER subject score above 50, only two LOTE's can contribute to the primary four, and an excellent result could only be an increment.

Jason

Year	Study	Unit 3/4	GA1	GA2	GA3	Study Score	ENTER subject score	Contribution to 2003 scaled aggregate	ENTER
2003	English	SS	A	B ⁺	C ⁺	32	30.03	30.03	
2002	Information Technology: Systems	SS	B	A	A ⁺	46	42.72	42.72	
2003	Mathematics: Methods	SS	D ⁺	E ⁺	E	18	22.51	22.51	
2003	Mathematics: Specialist	J-	E	NA	NA	-	NA	-	
2003	Physics	SS	B	B ⁺	D ⁺	28	30.75	30.75	
2003	VET CISCO Networking Program	SS	Unscorable				NA	3.15	
2001	VET Information Technology	SS	Unscorable				NA	3.15	
2003								132.3	70.75

Jason completed two unscorable VET programs. Each successfully completed unscorable VET program was eligible for a VET increment which is 10% of the average of the primary four, in this case being 10% of $(30.03 + 42.72 + 30.75 + 22.51)/4$ or 10% of $126.04/4$ which is 10% of 31.5025. As in all cases of increments, truncation is used.

Natalie

Year	Study	Unit 3/4	GA1	GA2	GA3	Study Score	ENTER subject score	Contribution to 2003 scaled aggregate	ENTER
2002	Chemistry	SS	D	C ⁺	E ⁺	29	33.93	33.93	
2003	English	SS	A	C ⁺	C ⁺	30	27.73	-	
2002	English	SS	A	A	D ⁺	36	34.80	34.80	
2003	Mathematics: Methods	SS	B	C ⁺	C	27	33.64	33.64	
2002	Mathematics: Methods	S-	NA	NA	NA	-	-	-	
2002	Mathematics: Specialist	SS	D ⁺	E ⁺	E	18	26.91	-	
2003	Physics	SS	C	B ⁺	C ⁺	28	30.75	30.75	
2002	Physics	N-	NA	E	NA	-	-	-	
2003	Psychology	SS	C ⁺	B ⁺	B	31	28.70	-	
2002	VET Engineering Technology	SS	Unscorable				NA	3.32	
2002	VET Laboratory Skills - General	SS	Unscorable				NA	3.32	
2003								139.7	76.45

Natalie repeated English hoping to improve her ENTER contribution, yet her original score was better than her second. Two VCE scored studies (one of which was Specialist Mathematics, yielding the lowest ENTER subject score) did not contribute to her ENTER aggregate, since the contribution from the two successfully completed unscorable VET programs was higher. Each unscorable VET program was eligible for a VET increment which is 10% of the average of the primary four, in this case being 10% of $(34.80 + 33.93 + 33.64 + 30.75)/4$ or 10% of $133.12/4$ which is 10% of 33.28. As in all cases of increments, truncation is used.

Steven

Year	Study	Unit 3/4	GA1	GA2	GA3	Study Score	ENTER subject score	Contribution to 2003 scaled aggregate	ENTER
2003	Art	SS	A	A	C ⁺	32	28.78	28.78	
2003	English	SS	B ⁺	B ⁺	C	30	27.73	27.73	
2003	Health & Human Development	SS	B	C	B	28	23.54	-	
2002	Japanese (SL)	SS	A ⁺	A ⁺	A ⁺	42	49.44	49.44	
2003	Mathematics: Methods	SS	C	D	E	21	26.46	2.64	
2003	Visual Communication & Design	SS	B	B ⁺	A	33	28.88	28.88	
2003	Approved Uni. Enhancement Study		High Result				NA	5.5	
2003								142.9	78.75

Steven did very well in his Approved University Enhancement Study, which provided a 5.5 increment to his aggregate. Given that at most six results can contribute to the aggregate, the Health and Human Development result did not contribute (its possible contribution being smaller than the Enhancement contribution). As in all cases of increments, truncation is used.

Simon

Year	Study	Unit 3/4	GA1	GA2	GA3	Study Score	ENTER subject score	Contribution to 2003 scaled aggregate	ENTER
2003	Accounting	SS	A*	A*	A*	45	45.83	45.83	
2003	Biology	SS	A*	A*	A*	43	43.61	43.61	
2003	English	SS	A	A*	B	36	34.68	34.68	
2003	Geography	SS	A*	A*	A*	41	40.88	4.08	
2003	Mathematics: Methods	SS	A	A	A	36	42.29	42.29	
2003	Media	SS	A*	B*	B*	37	33.29	3.32	
2003								173.8	94.55

Simon's six results all contributed to his aggregate and thus his ENTER. As in all cases of increments, truncation is used.

Anthony

Year	Study	Unit 3/4	GA1	GA2	GA3	Study Score	ENTER subject score	Contribution to 2003 scaled aggregate	ENTER
2002	Biology	SS	A*	A*	A	43	43.65	43.65	
2003	Chemistry	SS	A	A*	A*	39	43.60	43.60	
2003	English	SS	A*	A	B*	37	35.85	35.85	
2003	Geography	SS	A*	A*	A*	41	40.97	4.09	
2003	Mathematics: Methods	SS	A	B*	B*	35	41.47	41.47	
2003	Physics	SS	A*	A*	A	38	41.39	4.13	
2003								172.7	94.15

Anthony's ENTER subject scores are less variable than his study scores. As in all cases of increments, truncation is used.

Aaron

Year	Study	Unit 3/4	GA1	GA2	GA3	Study Score	ENTER subject score	Contribution to 2003 scaled aggregate	ENTER
2002	Chemistry	SS	D	C*	D	23	26.81	26.81	
2003	Chemistry	SS	D*	D	E*	17	19.23	-	
2002	English	SS	C	D*	D	22	19.06	19.06	
2002	Info. Tech.: Info. Proc. & Management	SS	C	C	D*	23	18.78	1.87	
2002	Mathematics: Methods	SS	B*	B*	B	31	38.50	38.50	
2003	Mathematics: Methods	SS	B*	B*	B	31	37.82	-	
2002	Mathematics: Specialist	SS	C	C	E*	22	32.59	32.59	
2003	Mathematics: Specialist	SS	C	D*	E*	21	30.79	-	
2003								118.8	59.35

Aaron thought he would improve his ENTER by repeating three of his studies. In one case his study score remained the same, in one case it improved whilst in the third case it decreased. In all three cases his ENTER subject score decreased, so that his initial results contributed to his aggregate and 2003 ENTER rather than his repeated results.

It is worth note that Aaron's 2002 scaled aggregate was 118.8 which yielded a 2002 ENTER of 59.55. Therefore Aaron's 2003 ENTER was less than his 2002 ENTER.

Erin

Year	Study	Unit 3/4	GA1	GA2	GA3	Study Score	ENTER subject score	Contribution to 2003 scaled aggregate	ENTER
2002	Biology	SS	D*	C*	D*	25	24.91	24.91	
2003	Chemistry	SS	E	D*	UG	15	16.61	-	
2003	English	SS	C*	B*	D*	27	24.35	24.35	
2002	Mathematics: Further	SS	C*	C	C	28	24.93	24.93	
2003	Mathematics: Methods	SS	D*	E*	UG	17	21.16	2.11	
2003	Mathematics: Specialist	SS	D*	E	UG	15	21.86	2.18	
2003	Physical Education	SS	A*	B*	A*	38	35.72	35.72	
2003								114.2	55.15

Erin completed all three mathematics studies. Her ENTER subject scores, in the mathematics studies in particular, are far less variable than her study scores. As in all cases of increments, truncation is used.

At most two of the three mathematics studies can contribute to the primary four, with Further Mathematics and Specialist Mathematics being an illegal combination in the primary four.

Nathan

Year	Study	Unit 3/4	GA1	GA2	GA3	Study Score	ENTER subject score	Contribution to 2003 scaled aggregate	ENTER
2003	Accounting	SS	C*	A	C*	30	30.00	30.00	
2002	Biology	SS	D*	C	D	24	23.85	2.38	
2003	Chemistry	SS	D*	C*	C	25	29.35	29.35	
2003	English	SS	B*	B	C	29	26.60	26.60	
2003	Mathematics: Methods	SS	C	C	D	23	28.96	28.96	
2003	Mathematics: Specialist	SS	E*	UG	E	10	13.84	1.38	
2003								118.6	59.10

Nathan was not a strong mathematics' student. If he chose to do Specialist Mathematics so as to improve his ENTER, he probably made the wrong decision. A very bad result, even if scaled up, is unlikely to make a strong contribution to the ENTER. As in all cases of increments, truncation is used.

Samantha

Year	Study	Unit 3/4	GA1	GA2	GA3	Study Score	ENTER subject score	Contribution to 2003 scaled aggregate	ENTER
2002	Business Management	SS	A	A	A	36	31.62	31.62	
2002	Chemistry	SS	E*	C	D	21	24.28	2.42	
2003	English	SS	D*	D*	C*	24	21.05	21.05	
2003	Legal Studies	SS	A	A	A	36	35.10	35.10	
2002	Mathematics: Methods	SS	D*	D*	D*	21	27.04	27.04	
2003	Psychology	SS	C	C	D*	24	21.24	2.12	
2003								119.3	59.75

Samantha's two best studies in terms of assessment grades, are her two best studies in terms of study scores, and remain her two best studies in terms of her ENTER subject scores, even though in both cases the level of competition resulted in them being scaled down (marginally in the case of Legal Studies and substantially in the case of Business Management).

Some examples of high ENTERs from 1999

Area	Studies with study scores	ENTER
Arts	English 50, Literature 46, Psychology 50, Legal Studies 50, French 43, Australian History 37	99.90
Science	English 44, Physics 39, Chemistry 47, Math Methods 50, Specialist Mathematics 50, Info Tech: Info Systems 50	99.85
Neither LOTE nor Specialist Mathematics	English 47, Legal Studies 50, Info Tech: Info Processing & Management 50, Accounting 45, Economics 44, Math Methods 39	99.55
Arts / Mathematics	English 50, Literature 50, French 50, Psychology 50, History: Revolutions 48, Specialist Mathematics 40. [note that an additional result of Math Methods 36 was not used as it would not have produced the maximum possible aggregate]	99.95
VET in Schools / University Enhancement	English 43, Biology 48, Legal Studies 49, Info Processing & Management 50, units 3&4 of a VET in Schools program with no study score available, University study with a result in the top 20% [note that results in an additional 2 (Z) units of a VET Dual Recognition program, and Math Methods 37 were not used in the aggregation as they would not have produced the maximum possible aggregate]	99.55

Some examples of high ENTERs from 2000

Area	Studies with study scores	ENTER
Arts	English 47, Studio Arts 50, Art 49, History: Revolutions 44, French 43, Literature 34	99.75
Science	English 50, Biology 50, Chemistry 50, Physics 50, Math Methods 50, Specialist Mathematics 45	99.95
Neither LOTE nor Specialist Maths	English 50, Political Studies 50, History: Revolutions 48, International Studies 47, Economics 45, Literature 39	99.75
Arts / Mathematics	English 50, Accounting 50, Math Methods 50, Specialist Mathematics 48, Economics 47, French 39. [note that additional results of Legal Studies 43 and Political Studies 42 were not used as they would not have produced the maximum possible aggregate]	99.95
	English 47, French 49, Literature 46, Math Methods 46, Specialist Mathematics 45, Japanese 37	99.90
Vet in Schools	English 37, VCE VET Business (Office Administration) 50, Business Management 44, Accounting 38, Information Technology: Information Processing & Management 38.	94.00
University Enhancement	English 50, Literature 48, Psychology 47, History: Revolutions 46, French 42, University study with a result in the top 20%	99.80

Some examples of high ENTERs from 2001

Area	Studies with study scores	ENTER
Arts	Health & Human Development 50, English 50, Literature 47, History: Revolutions 44, Australian History 44, French 39	99.75
Science	English 50, Biology 50, Chemistry 50, Math Methods 50, Specialist Mathematics 50 (5 results only)	99.90
Neither LOTE nor Specialist Maths	English 50, Economics 50, Political Studies 50, Literature 48, Chemistry 44, Math Methods 38	99.80
Arts / Mathematics	English 50, Chinese (SL) 49, Latin 42, Further Mathematics 47, French 45, Math Methods 39, (with additional results of 43 in both Visual Communication & Design and Art not being used).	99.95
	Economics 50, Legal Studies 50, Political Studies 46, English 47, Math Methods 38, History: Revolutions 42	99.70
University Enhancement	Economics 50, Texts and Traditions 50, Political Studies 47, English 46, Australian History 41, University study with a result in the top 20%	99.90

Some examples of high ENTERs from 2002

Area	Studies with study scores	ENTER
Arts	English 49, French 46, History: Revolutions 50, Literature 50, Legal Studies 36, Political Studies 40	99.85
Science	English 48, Chemistry 41, French 38, Further Mathematics 49, Math Methods 39, Specialist Mathematics 36, (with an additional result of 39 in Physics not being used)	99.40
Neither LOTE nor Specialist Maths	Art 47, English 50, Literature 42, Media 49, Philosophy 48, Psychology 43	99.40
Arts / Mathematics	Literature 43, Biology 48, Chemistry 42, French 31, Math Methods 35, Psychology 47	98.85
	English 41, Latin 37, Literature 41, French 41, Further Mathematics 46, Math Methods 38 (with an additional result of 37 in History: Revolutions not being used)	99.25
University Enhancement	English 42, Hebrew 37, Japanese (SL) 40, Math Methods 41, Specialist Mathematics 37, University study with a result in the top 20% (with an additional result of 42 in Chemistry not being used)	99.30

Combinations of studies all completed in 1999

(It is understood that enrolment practices are changing and that increasingly results are from more than one year, but for this exercise only single year combinations are considered.)

Studies	Number of students	Average ENTER
Pure Science [English, Math Methods, Specialist Mathematics, Chemistry, Physics and any others]	1770	88.36
Pure Humanities [English, Literature, History (any), a taught LOTE* and any others]	138	91.91
General Science [English, Math Methods, Chemistry and any others]	6188	83.10
General Humanities A [English, Literature, History (any) and any others]	1071	78.85
General Humanities B [English, History (any), a taught LOTE* and any others]	438	87.78
General Humanities C [English, Literature, History (any), Legal or Political Studies, any others]	288	80.19
General Business A [English, Business Management, Math Methods and any others]	1046	68.11
General Business B [English, Economics, Business Management, Math Methods, any others]	119	74.17
General Business C [English, History, Accounting or Economics, Math Methods, any others]	192	82.73

* For the purpose of this exercise a taught LOTE was taken to be one of the following: Ancient Greek (now Classical Greek), Chinese (SL), French, German, Hebrew, Italian, Indonesian (SL), Latin, Russian, Spanish.

Combinations of studies all completed in 2000

(It is understood that enrolment practices are changing and that increasingly results are from more than one year, but for this exercise only single year combinations are considered.)

Studies	Number of students	Average ENTER
Pure Science [English, Math Methods, Specialist Mathematics, Chemistry, Physics and any others]	1519	87.83
Pure Humanities [English, Literature, History (any), a taught LOTE* and any others]	131	89.68
General Science [English, Math Methods, Chemistry and any others]	5811	83.09
General Humanities A [English, Literature, History (any) and any others]	1121	76.39
General Humanities B [English, History (any), a taught LOTE* and any others]	499	85.89
General Humanities C [English, Literature, History (any), Legal or Political Studies, any others]	252	76.98
General Business A [English, Business Management, Math Methods and any others]	1172	68.94
General Business B [English, Economics, Business Management, Math Methods, any others]	144	74.80
General Business C [English, History, Accounting or Economics, Math Methods, any others]	152	82.76

* For the purpose of this exercise a taught LOTE was taken to be one of the following: Ancient Greek (now Classical Greek), Chinese (SL), French, German, Hebrew, Italian, Indonesian (SL), Latin, Russian, Spanish.

Combinations of studies all completed in 2001

(It is understood that enrolment practices are changing and that increasingly results are from more than one year, but for this exercise only single year combinations are considered.)

Studies	Number of students	Average ENTER
Pure Science [English, Math Methods, Specialist Mathematics, Chemistry, Physics and any others]	1695	88.75
Pure Humanities [English, Literature, History (any), a taught LOTE* and any others]	126	88.01
General Science [English, Math Methods, Chemistry and any others]	5445	83.11
General Humanities A [English, Literature, History (any) and any others]	948	76.51
General Humanities B [English, History (any), a taught LOTE* and any others]	463	86.50
General Humanities C [English, Literature, History (any), Legal or Political Studies, any others]	211	77.89
General Business A [English, Business Management, Math Methods and any others]	1282	68.53
General Business B [English, Economics, Business management, Math Methods, any others]	131	72.38
General Business C [English, History, Accounting or Economics, Math Methods, any others]	114	84.61

* For the purpose of this exercise a taught LOTE was taken to be one of the following: Ancient Greek (now Classical Greek), Chinese (SL), French, German, Hebrew, Italian, Indonesian (SL), Japanese (SL), Korean (SL), Latin, Russian, Spanish.

Combinations of studies all completed in 2002

(It is understood that enrolment practices are changing and that increasingly results are from more than one year, but for this exercise only single year combinations are considered.)

Studies	Number of students	Average ENTER
Pure Science [English, Math Methods, Specialist Mathematics, Chemistry, Physics and any others]	1201	88.558
Pure Humanities [English, Literature, History (any), a taught LOTE* and any others]	122	89.488
General Science [English, Math Methods, Chemistry and any others]	5407	83.044
General Humanities A [English, Literature, History (any) and any others]	860	76.172
General Humanities B [English, History (any), a taught LOTE* and any others]	483	86.810
General Humanities C [English, Literature, History (any), Legal or Political Studies, any others]	200	76.462
General Business A [English, Business Management, Math Methods and any others]	1309	68.540
General Business B [English, Economics, Business management, Math Methods, any others]	120	73.496
General Business C [English, History, Accounting or Economics, Math Methods, any others]	156	85.192

* For the purpose of this exercise a taught LOTE was taken to be one of the following: Ancient Greek (now Classical Greek), Chinese (SL), French, German, Hebrew, Italian, Indonesian (SL), Japanese (SL), Korean (SL), Latin, Russian, Spanish.

Combinations of studies all completed in 2003

(It is understood that enrolment practices are changing and that increasingly results are from more than one year, but for this exercise only single year combinations are considered.)

Studies	Number of students	Average ENTER
Pure Science [English, Math Methods, Specialist Mathematics, Chemistry, Physics and any others]	1163	87.288
Pure Humanities [English, Literature, History (any), a taught LOTE* and any others]	101	88.527
General Science [English, Math Methods, Chemistry and any others]	5353	82.171
General Humanities A [English, Literature, History (any) and any others]	823	76.387
General Humanities B [English, History (any), a taught LOTE* and any others]	498	84.269
General Humanities C [English, Literature, History (any), Legal or Political Studies, any others]	171	77.687
General Business A [English, Business Management, Math Methods and any others]	1179	68.010
General Business B [English, Economics, Business management, Math Methods, any others]	114	75.851
General Business C [English, History, Accounting or Economics, Math Methods, any others]	133	84.125

* For the purpose of this exercise a taught LOTE was taken to be one of the following: Ancient Greek (now Classical Greek), Chinese (SL), French, German, Hebrew, Italian, Indonesian (SL), Japanese (SL), Korean (SL), Latin, Russian, Spanish.

Notes