

# Tonbridge School

## A LEVEL COURSES

A booklet for boys and parents providing information about the available subjects, good combinations, and implications for university and careers.

## **Timetable for AS level Subject Choices for the Current Third Year**

**23 November: A level Choices Forum for Parents and Boys**

Briefing by the Director of Studies (available afterwards on the Portal)  
Presentations by Heads of Department

**2 February: Third Year Parents' Evening**

Parents and staff consult. Parents will have seen GCSE mock results in a special interim report by then.

**4 February: Discussions at home over the weekend**

Decisions and completion of the enclosed choice form  
– (a copy is included at the back of the brochure for your reference)

**6 February: Provisional choices made on the Portal**

**March: Subject timetable blocking system established**

This is done by the Director of Studies who devises an option scheme to allow as many as possible of the provisional choice combinations to be scheduled. Any subsequent changes have to fit the devised option scheme.

**Late March: Parents receive subject report**

This will include a copy of the devised option scheme, the Firm Choices form and a letter of explanation.

**25 April: Firm Choices made on the Portal**

Throughout this process the Director of Studies and Housemasters are available for advice and discussion.

Parents who are unable to attend the 'Third Year Parents' Evening will be consulted by Housemasters.

## The Sixth Form Curriculum at Tonbridge

As part of Government reforms to the 14-19 Curriculum, A levels have been significantly modified. These changes came into effect in September 2008. The major change is the reduction from six to four modules in most subjects with a consequent reduction in the assessment burden. There will be a wider variety of skills assessed, including an emphasis on thinking and problem-solving skills and a requirement for extended writing in most subjects. More synoptic assessment, which tests pupils' holistic understanding of the subject and their ability to make links between different areas, will be a key element of the A2 papers. The AS level (Advanced Subsidiary) is now a 2-unit award which "attracts 50% of A-level marks" and "is to be set and assessed at a standard appropriate to the first year of a full A-level programme". The second year of the full course comprises the 2 A2 units which are "set and assessed at a standard appropriate to the second year". The AS and A2 together constitute the full A-level course.

A further Government initiative was the replacement of the Advanced Extension Awards or AEA examinations (themselves replacements for the old S level papers) by A\* grades. These require an average of 90% or more in the A2 modules and are thus open to all candidates without the need for taking additional papers. They aim to stretch and challenge the most able candidates and may well be used by the more competitive universities to help in selecting students.

At Tonbridge, as at most HMC and GSA schools, pupils study four subjects in the Lower Sixth Form and take the AS examinations in these subjects at the end of that academic year. In the Upper Sixth they continue with three or four of these subjects and will therefore usually leave school with either 3 or 4 A levels and 4 AS levels to their name. We anticipate that the majority of boys will attain 4 A-levels; the final decision on 3 or 4 A-levels is made after the AS module results are published in the August of the Lower Sixth year.

Modules have to be "cashed in" to convert them to an AS or A level. This is automatically done at the end of the Lower and Upper Sixth. A level modules continue to have a "shelf life" of four years. This means that, in the rare case where it is necessary, a pupil can improve on his overall result by re-taking modules for up to two years after leaving Tonbridge.

It is possible to improve on overall A level performance by judicious re-takes of AS modules. School policy strongly encourages such re-takes to occur at the end of the Upper Sixth, if needed, rather than in the January of that year. This is because much of the final revision for the A2 papers, which increasingly include a synoptic element, will include re-visiting AS topics during the summer term. In many subjects, the added academic maturity of candidates produces a better AS re-take performance in the summer than in January. Furthermore, another major examination season in January lasting three weeks would severely disrupt A2 teaching which, in itself, might reduce the chances of A\* grades subsequently. However School policy permits January retakes under the following special circumstances: (a) where a set text is being examined for the last time, (b) illness by the candidate or a member of his family during the examination period or the immediate lead up to it, (c) rogue marking of modules not satisfactorily rectified by the re-marks process, (d) where, in the joint opinion of the Head of Department, the Housemaster and the Director of Studies, it would be in the best educational interests of the pupil.

Tonbridge School has decided not to move to the International Baccalaureate as we feel our sixth formers prefer the flexibility and depth that a programme of A levels allows. Similarly we feel that the new Diploma is inappropriate for our pupils concentrating, as they do, on more vocational lines of learning.

From January of the LVIIth year onwards boys are offered the opportunity to attend weekly Oxbridge preparation lessons in their chosen subject. These are additional to the normal curriculum and are arranged at times to suit both boys and teaching staff. There is more about preparation for Oxbridge on page 8.

The Upper School curriculum (72 periods per fortnight) is divided into four blocks of time. In addition to the four examination subjects they choose to study (one per block), which are each allocated 15 periods per fortnight, all boys in the Lower Sixth Form have 9 periods of private study per fortnight, and all participate in the Seminar programme which is allocated 3 periods per fortnight. Typically, Seminar involves a lecture presentation given to the entire year group, followed up by further work on the theme in small groups of about 12 boys under the supervision of a Seminar Tutor. Each topic lasts several weeks and they integrate to form a structured course covering various aspects of life such as Group and Interpersonal skills, the Community, Health Studies, Politics, Applied Science and the Arts - with an emphasis on moral and ethical dimensions. In the Upper Sixth, when a boy will continue three or four of his chosen AS subjects through to the full A-level, all subjects are allocated 16 periods per fortnight.

Boys for whose first language is other than English often take an AS or full A level in their first language as an additional subject in their own time. Where private tuition is required to facilitate this, the Head of Modern Languages will usually have contacts.

GCSE results play a major part in determining conditional university offers. For the better universities and the more popular courses, a candidate's GCSE portfolio should contain no C grades, and few or no B grades. Several universities such as Bristol, Nottingham, Durham, Edinburgh, Warwick and some of the London Colleges look for a minimum of 6 A\* or A grades at GCSE. Oxbridge colleges rarely consider applicants with fewer than 6 A\*s at GCSE.

While the **minimum entry requirement for the Sixth Form course at Tonbridge is 6 GCSE grades at grade B or above**, boys should be aiming to achieve **no less than an A in those subjects or subject areas they hope to study at AS level**. About 90% of the boys moving into the Upper School have 3 or more A\* and A grades to their name, and some 75% have 5 or more. The average GCSE holding by Tonbridgians last year was 6A\*s and 4As.

The Sixth Form is an important and exciting stage in the development of pupils. It is a time when opportunities for leadership, initiative and participation are plentiful. Such opportunities should be seized upon in order to develop “life skills” and ultimately to help make Tonbridgians more employable. It is important to develop good working habits from the start and guidance will be given on this early in the course. Work experience is an invaluable tool for helping firm up career choices and vital for many; help is available with this via the Careers Service.

## Honorary Academic Scholarships

Honorary academic scholarships will be awarded during the Michaelmas term of the Lower Sixth to those boys, not already scholars, who accumulate 9 A\*s at GCSE. These scholarships will be recognised within the school and will be accompanied by a prize awarded in the end of Michaelmas Term assembly.

Similarly those boys, who are not academic scholars already, who exceed 90% UMS marks in three of their four AS subjects, and with 80% or better in the fourth, will also be awarded an honorary academic scholarship during the Michaelmas term of the Upper Sixth with an accompanying prize at the end of term assembly.

## Choosing AS/A-level subjects

A wide range of AS/A-level courses is available and boys are asked to select the four subjects they would like to study from the list of those available. The subjects will then be "blocked" to ensure that as many of the chosen combinations as possible can be accommodated and timetabled. **Inevitably, however, it may not be possible to provide all of the chosen subject combinations, and choices should be made in the knowledge that some of the less popular combinations will not be available and that an alternative combination might be required.** Additionally the school reserves the right to withdraw a course if there is insufficient demand; this is will be at six for Computing and for the new subjects on offer this year: Mandarin and Physical Education. **It is important, therefore, that the choice of AS level subjects is given very careful consideration before being submitted in early February, because it may not be possible to change to another combination at a later stage.**

Because of the range of subjects on offer the choice is not always easy; it requires research, thought and discussion. Advice should be obtained through discussion with Housemasters, Heads of Departments, a boy's GCSE teachers, the Universities Master, the Careers Master, and the Director of Studies. The following factors must be considered:

1. **Interest and enjoyment:** Choose subjects that interest you and that you enjoy. It is self-evident that one will do better in these subjects and achieve higher grades at AS and A-level.
2. **Combinations:** If possible at least three of the four chosen subjects should complement one another: i.e. there should be some overlap in approach, subject-matter, and in the skills and techniques being developed. The fourth subject may cohere with the other three or, in some cases, may contrast.
3. **University requirements:** Some University courses are vocational (especially in the Sciences), so if you are set on a particular course this may largely dictate your choice of AS and A-levels. However many degree courses have no specific subject requirements and so allow the choice of any combination. At this stage though it is wise to leave University options as open as possible so "tried and trusted" combinations are strongly advised.
4. **Careers:** As with University requirements certain career aspirations will determine the choice of both the subjects to be studied at AS and A-level and the degree course. It is important to obtain early and good advice in these cases.

### Five A levels?

Because the Tonbridge School sixth form timetable is based on four blocks of time and because depth of study in each subject is a strong feature of the new A levels (especially given the new A\* grade) **it is not normally possible or desirable to take five subjects simultaneously.**

Maths with Further Maths takes up two blocks of time and so can only be combined with two, rather than three, other subjects. Further Maths cannot be taken without "single" maths. It is therefore normally impossible to take a course consisting, for example, of Double Maths, Physics, Chemistry and Biology or Double Maths, Physics, Chemistry and Economics.

*John Pearson  
Director of Studies*

## University Courses and Careers

Choices of AS and A-levels sometimes depend upon your intended career or degree course. University entry requirements vary widely and it is necessary to refer to the reference books, university prospectuses, (available in the Careers Library) and university websites. You may of course speak to the Universities and Careers Adviser at any time to discuss careers and university entry issues.

### 1. Degree/Career Opportunities requiring specific A-level Combinations

The normal A-level subject requirements for some common Honours degree courses are listed below. Other A-level subjects will often be useful also, and should be chosen to complement those specified.

<b>Degree Course</b>	<b>Normally required</b>	<b>Degree Course</b>	<b>Normally required</b>
Accountancy	Ma (quite often)	History	Hi
Agriculture	Ch &/or Bi	Land Management	Ma (few), Gg preferred
Architecture	*Ma (some)	Law	none
Biology	Bi + Ch or Ma or Ph	Materials Sci.	Ma + Ph + Ch
Bus. Stud.	Ma (some)	Mathematics	Ma
Chemistry	Ch + Ma or Ph	Medicine	Ch + Bi (+ Ph or Ma)
Classics	La + Gk (some)	Music	Mu
Class. Civ.	none	Oriental Langs	1 Class. or Mod Foreign Lang
Comp. & Inf. Sci.	Ma (some)	Pharmacy	Ch + Bi + Ph or Ma
Dentistry	Ch + 2 of Ma/Bi/Ph	Philosophy	Ma (few)
Drama	En	Physics	Ph + Ma
Economics	Ma (few)	Politics	none
Engin.(Chem.)	Ma + Ph + Ch	Psychology	2 sciences (few). Ma is a a distinct advantage.
Engin.(others)	Ma + Ph (+ DT or Ch an advantage)	Social Sci.	none
English	En	Theology	none
French/Langs	Fr + Ge or Sp or Ru	Town Planning	Gg
Geography	Gg	Vet. Science	Ch + Bi + Ph or Ma
Geology	Ma + Ph (or 2 sciences)		

\* Most Universities also ask to see an Art portfolio.

The above table is concerned with University courses, but acts as a general guide for anybody considering a career in an associated field.

## 2. Non-academic Qualifications and Experience

In addition to selecting the most appropriate AS and A-level subjects for your current aspirations and then securing the best possible grades, you should also consider developing your extra-curricular profile. Planned carefully, this will widen your experience, strengthen your character and make you more attractive to potential universities and employers.

### i) School activities

- are you learning a musical instrument and are you in an orchestra, band or choir?
- do you play representative sport for the school at senior level or are you involved in some other activity such as sub-aqua, chess, drama?
- are you a key member of the CCF, CSG, or some other activity?
- are you attempting a Duke of Edinburgh Award?

All of these will be done in your own time and will demonstrate both commitment and involvement. If they also allow you to gain a certificate or qualification that is recognised nationally or if you are likely to continue your interest beyond school, then so much the better.

### ii) Work Experience and Holiday Voluntary Work

This is essential for those thinking of Medicine, Veterinary Science, Dentistry, Architecture, Business or Law. It is expected of those considering other vocational degrees (such as Land Management) and is certainly looked on favourably by employers and university admissions tutors. You should use either the holidays after the GCSE, the Easter break in the LVith or the summer before your UCAS application to complete at least two weeks relevant work experience. If you have difficulty arranging work experience you should contact the University and Careers Department, as they may know of Old Tonbridgians who have indicated their willingness to offer work experience placements.

*Anna Rogers (University and Careers Adviser)*

## Advice for Potential Oxbridge Applicants

### The Myth of the All-Rounder

Oxbridge, along with other top UK universities, make offers solely on the basis of academic criteria – and this is becoming more and more the case as time goes by. As boys prepare for GCSE exams this summer, and start to consider their A-level choices, they would do well to bear this in mind. Do not be under the misapprehension that an average academic profile can be countered by exceptional involvement and achievement in other areas of school life: it cannot.

With the number of applicants to top universities increasing with each passing year, the competition for entry to Oxbridge will only increase.

### A Health Warning

Some of the specific information provided below may appear to be at odds with advice provided publicly by Oxford and Cambridge (e.g. on their website) – for instance, you will not find the A\* requirement that we outline below. It is the case, however, that Admissions Tutors will expect a flawless academic profile from candidates from schools such as Tonbridge – the information provided publicly is designed, in part, to encourage applications from students who come from very different educational backgrounds. The advice we provide below is based on our experience of the criteria for success for applicants from Tonbridge.

### So, What GCSE Grades Do I Need?

A realistic Oxbridge candidate should have A\* grades in the majority of his GCSE subjects: candidates for all subjects should have at least six A\* grades, whilst some of the more competitive courses might require eight or nine. And, ideally, there should be no B grades on the UCAS form of an Oxbridge applicant.

### And at AS Level?

Academic achievement must be sustained into the sixth form. AS exams are likely to be the last exams that a candidate sits before submitting an Oxbridge application, and Admissions Tutors will expect to see scores of **at least** 90% in the three most relevant AS subjects, with an A grade (i.e. at least 80%) in the fourth.

### What AS Subjects Should I Choose?

In most cases, the answer to this question is less important than the answer to questions given above. Clearly, potential medics need to study Chemistry and at least one other science; potential classicists are likely to want to choose one or more classical languages at A-level; successful Economics applicants to Cambridge normally study Maths and Further Maths. Applicants for Arts subjects should try and choose at least three Arts subjects at A-level, whilst applicants for Science subjects should try and choose at least three Science subjects including maths and if possible further maths at A-level. However, beyond this, the grades achieved are more important than the subjects studied.

Both universities publish details of where specific courses require specific A-levels to have been taken. This information can be found at:

- [www.cam.ac.uk/admissions/undergraduate/requirements](http://www.cam.ac.uk/admissions/undergraduate/requirements), and,
- [www.admissions.ox.ac.uk/courses/enrew.shtml](http://www.admissions.ox.ac.uk/courses/enrew.shtml)

“Obvious” subjects are often not required – for example, a Theology applicant does not need to study RS; an applicant for SPS or PPE does not need to study Politics; Maths is more important for an Economics applicant than Economics. **However, applicants who have not chosen these subjects in a school where they are available will have to remember that they will need to be particularly well-prepared to convince an Admissions Tutor of their interest in the course for which they are applying.**

It is true that, on the website mentioned above, Cambridge publishes a list of subjects which they believe – if studied at A-level – provide less good preparation for nature of study at Cambridge. This includes a small number of subjects that are on offer at Tonbridge. **It should be noted that potential Oxbridge applicants may certainly choose one of these subjects within their selection of 4 AS levels.** Cambridge states that no more than one of these subjects should be chosen from an A-level portfolio of three subjects. However, as one subject within an AS-level portfolio of four subjects, these subjects are perfectly acceptable. Indeed, the very purpose of the “fourth AS subject” is to enable students to choose these subjects, should they so wish.

### **Preparing Oxbridge Applicants from Tonbridge**

About 70 boys apply to Oxbridge every year from Tonbridge, and they should be aware that Admissions Tutors are looking, above all, for personal interest and motivation – this is not something that can be taught. Successful applicants will be those that are self-motivated and have demonstrated initiative in their engagement with their prospective course outside the confines of the A-level specifications.

This having been said, Tonbridge does provide a programme to support Oxbridge applicants. Beyond providing advice regarding GCSE grade requirements (to ensure that candidates have ticked this box) and A-level subject choice (where necessary), the formal process of preparation begins at the start of the Lent Term of a boy’s Lower Sixth year.

- Mid-January – **Oxbridge Evening.** An evening for Lower Sixth form boys and their parents, with information provided by Tonbridge’s Oxbridge co-ordinators and speeches from current Oxbridge tutors.
- **Extension Classes.** From the Lent Term onwards, each department will provide extension sessions for any interested student, which will expose boys to material that is off the A-level specification. These classes will be modelled more on the style of Oxbridge tuition. Heads of Department will also provide guidance at this point on wider reading and work experience (where relevant).
- Late-April – **Initial Identification.** All possible Oxbridge applicants will be asked to signal their serious interest at this point, starting to identify courses and colleges (of which, more below). This information should be finalised by the end of the Summer Term, at the very latest.
- **Extension classes** in the latter part of the Summer Term will focus on identifying areas for independent research and reading over the summer holiday, whilst also assisting boys in the compilation of their UCAS personal statement.
- Early Michaelmas – **Submission of Application.** Boys will be expected to submit their application to UCAS by the end of September.
- **Extension classes** in the Michaelmas Term will focus on the preparation for any subject-specific tests in the first instance (of which, more below), and preparation for interviews thereafter. All boys will have at least one practice interview.

## **College Choice**

The choice of College can be crucial for a Choral or Organ Award applicant, but it is often less important for those not competing for these awards. Candidates will be advised by the relevant Head of Department. Whilst we tend to discourage two boys from applying for the same course at the same college, this is simply cautionary – there is no firm evidence suggesting that this damages an individual boy’s chance of success. Open Applications are made when the applicant does not specify a College, and is instead allocated to a College upon application – the impact of submitting an Open Application is, at worst, neutral.

Visits to Oxford and Cambridge Open Days (which are often facilitated by departments in the latter part of the Summer Term) can be helpful in finalising college choice.

## **Course-Specific Aptitude Tests**

Applicants for Medicine and Law will need to sit the BMAT (Biomedical Aptitude Test) and LNAT (Law National Aptitude Test) respectively. The BMAT is sat at school, during or shortly after the Michaelmas half-term. Boys are responsible for entering themselves for the LNAT, and this is sat at a test centre away from school. The LNAT is taken at the time of a boy’s choosing, between September and November.

More and more courses at Oxford are using course-specific aptitude tests, and these are sat at Tonbridge during or shortly after the Michaelmas half-term. Currently, there are such tests for all applicants for History, English, PPE, Physics, Maths and Computer Science. This list is only going to grow. These tests are used to filter out applicants **in advance of interview**.

Some colleges at Cambridge use the Thinking Skills Assessment for some courses (and Engineering, Natural Sciences and Economics in particular). This is undertaken at the time of interview. Some colleges at Cambridge use college-specific tests for some other subjects; again these are completed at the time of interview. At this point, Cambridge does not use aptitude tests to filter out applicants in advance of interview.

All applicants from Tonbridge will be helped to prepare for these tests in advance, and a formal “mock test” will be sat in early October, with formal feedback provided.

## **Further Information and Support**

The Oxbridge application process is overseen at Tonbridge by Mr. Lindsay McDonald (who takes overall responsibility for all Arts applications, including Economics and Law) and Dr. Bill Burnett (who takes overall responsibility for all Science applications). They can be contacted at school if you require any further information.

Mr. McDonald and Dr. Burnett are supported by the Oxbridge Panel – Mr. Nick Waywell (English), Mr. Mark Forkgen (Music), Dr. Ian Jackson (Maths), Mr. Nick Waywell (English), Dr. John Richards (Economics), Miss Melanie Robinson (History), Mrs. Anna Rogers (UCAS) and Dr. John Taylor (Classics).

Individual boys will be supported through the application process by the most relevant Head of Department. Applicants for medicine are overseen by Mr. Paul Ridd, and applicants for Engineering are overseen by Mr. Alastair McGilchrist.

*Bill Burnett and Lindsay McDonald*

## AS/A-level courses

The following 24 AS/A-level courses are being offered this year (Tonbridge code in brackets):

Latin	(La)	
Greek	(Gk)	
Classical Civilisation	(CC)	
French	(Fr)	
German	(Ge)	
Spanish	(Sp)	
Mandarin	(Mn)	
English	(En)	
History	(Hi)	
Geography	(Gg)	
Business Studies	(BS)	
Government & Politics	(GP)	
Economics	(Ec)	
Religious Studies	(RS)	
Mathematics	(Ma)	
Double Mathematics	(MM)	<i>NB Counts as a double option, taken alongside just two other subjects; see p20.</i>
Physics	(Ph)	
Chemistry	(Ch)	
Biology	(Bi)	
Music	(Mu)	
Art	(Ar)	
Design Technology	(DT)	
Theatre Studies	(TS)	
Physical Education	(PE)	

Please note that we do not offer Italian at A level and no longer offer Computing.

Course descriptions, written by the relevant Heads of Departments, follow in the order listed above. The syllabus followed in each subject is given just below the title. The first number is the code for AS, the second for A2. Further details can be obtained from the websites of the Examination Boards which are:

AQA: [www.aqa.org.uk](http://www.aqa.org.uk)

Edexcel: [www.edexcel.org.uk](http://www.edexcel.org.uk)

OCR: [www.ocr.org.uk](http://www.ocr.org.uk)

WJEC: [www.wjec.co.uk](http://www.wjec.co.uk)

## Latin and Greek

### *OCR H039/H439 (La) and OCR H040/H440 (Gk)*

Latin and Greek go naturally together, but each of them also combines well with other subjects. They should not be seen as possible choices only for brilliant linguists. They involve a stimulating combination of language, literature and history. High grades are attainable by any candidate who has done well in GCSE, is interested, and is prepared to work.

The programme over the two sixth-form years and the format of the AS and A2 examinations are similar in both languages. At AS there are two papers, each of ninety minutes and each representing 50% of the mark allocation. The language paper consists of an unseen translation passage of Latin or Greek prose, and then the choice of a further passage from a prescribed author or five short English sentences to translate. The literature paper tests knowledge of two set texts (one verse and one prose, of about 200 lines each) via context questions and a short essay. At A2 there are again two papers, each of two hours and of equal weight, but divided this time between verse and prose. A verse set text of about 300 lines (tested again by context and essay questions) is accompanied by a short verse passage for unseen translation and comprehension. A prose set text of similar length (tested by context questions) is accompanied by the choice of a prose passage for unseen translation and comprehension or a short English passage for prose composition. During the whole course you will have tackled four contrasting set texts, which may be drawn from epic, drama, history, oratory or lyric poetry. All texts are studied in their historical and literary setting, and there is ample opportunity for informed personal response and for exploring links with modern literature and ideas.

Classical subjects are highly regarded both by universities and by employers. There is wide scope for pursuing them in higher education, on their own or in combination with other subjects. They also provide a good foundation for more vocational degree courses such as Law.

*John Taylor*

## Classical Civilisation

### *AQA 1021/2021*

This is a completely new course, combining ancient history with Greek (and/or Roman) literature studied in English. It is accessible to anyone, regardless of whether they have studied any classical subject at GCSE. Classical texts and mythology form an important part of the background to English and other European literature: the subject combines especially well with others in the arts and humanities, but also works as a contrasting fourth A-level with unrelated subjects.

At AS there are two papers, each of ninety minutes and each representing 50% of the mark allocation. Each paper tests the chosen topic by one source-based context question and one essay. From the various options available, we are offering Athenian Democracy for the first paper and Homer's *Odyssey* for the second. Athens was the first democracy in the world, and its history provides a fascinating insight into political institutions and their development. Homeric epic takes traditional adventure stories and creates from them sophisticated works of literature: the circumstances in which the *Odyssey* was composed remain mysterious, but its blend of fact and fiction opens up a remarkable world. Both topics suggest striking comparisons and equally striking contrasts with the modern world. At A2 the format is similar, with two further topics. Here the options currently pursued are the Persian Wars and Roman Epic.

Classical Civilisation and/or Ancient History can be pursued at university level, and has been a popular choice for Tonbridge boys in recent years.

*John Taylor*

## French, German, Spanish and Mandarin Chinese

*AQA 1651/2651 (Fr) 1661/2661 (Ge) 1696/2696 (Sp) Edexcel 8610/9610 (Mn)*

The study of languages at AS and A2 level is refreshingly varied as it involves the need to communicate fluently and accurately on a wide range of subjects, to develop an interest in contemporary events in the country whose language you are studying, and to explore its culture and history. The aims of the course are to develop an ability to speak the language spontaneously and with the confidence that comes from genuinely understanding how the language works; to enable an understanding of the language as spoken on radio and television or as written in newspaper and magazine articles; and finally to offer the ability to talk about almost any topic using up-to-date knowledge of the country and its culture. In order to achieve this, a wide variety of resources are used including press articles, satellite television, the Internet, literature, songs and film as well as regular conversation classes and trips abroad.

The focus of the AS modules is primarily linguistic and aims to build up confidence in manipulating language through the study of contemporary issues and their relationship to society: Why were the French so opposed to the American lead invasion of Iraq? What are the issues which cause French school pupils and their teachers to come out on strike? Are German people really so committed to Europe and, if so, why? How come the green lobby is so much more influential in Germany? Are racist chants at a Spain-England game in any way typical of contemporary Spanish attitudes? Is bull fighting as barbaric as it seems? Why is Mao still regarded as a hero rather than a villain in today's China? As an integral part of this process, you learn to express your opinions, construct arguments and illustrate points both orally and on paper through the detailed analysis of what native speakers themselves say and write.

The A2 modules continue this process of linguistic development through the study of increasingly sophisticated topics and global issues. By the end of the course you should have the confidence and ability to converse naturally on unprepared topics for upwards of ten minutes, to write extensively arguing a case on a cultural topic, to read a current affairs magazine and to understand a television news broadcast. In addition, there is the opportunity to explore in French, German, Spanish or Chinese literary texts and cultural topics which may include a range of works by some of the world's great writers such as Molière, Lorca and Brecht; the cinema of Truffaut or Saura; the theatre of Dürrenmatt; the rise and fall of Nazism; the human condition as portrayed by Albert Camus; the individual and society as seen through the eyes of Gabriel García Márquez; the typical old-fashioned lifestyle vividly described by Ba Jin and the completely new perspective of Chinese Society in the novel *Wolf Totem*.

Finally, what does an AS or A-level in Modern Languages lead to after school? The answer is, unsurprisingly, almost anything and everything and in 2008, the second most popular choice of degree course for Tonbridge leavers was Modern Languages. A-level students have in recent years successfully combined a language with sciences and mathematics as well as the more traditional subjects such as English, History, Economics or, indeed, another language. Many university courses and careers actively encourage knowledge of a foreign language and there is a growing number of opportunities to spend time abroad as part of your studies in anything from Engineering to Law. As opportunities for jobs open up both in Europe and the wider world, there has never been a better time to take advantage of the enjoyment and practical skills the study of foreign languages can offer. Mandarin Chinese is a new A level subject this year at Tonbridge in that it is the first time it has been offered on-timetable to non-native speakers. With the ever expanding Tiger economy and China's ever increasing likeliness to be the next world superpower, this makes for an exciting choice. There will need to be a minimum of six takers to make the non-native-speaker Mandarin course a possibility, however.

*Lindsay McDonald*

## English

### *OCR H071 (AS) H471 (A2)*

The essential aims of this course are to develop a command and fascination for English Literature, and to explore the associated intellectual and artistic movements and dimensions. Such aims are based on the development of an informed personal response to a wide range of texts, the contexts in which they were written, and different critical readings of them. You might be discussing the conventions and relevance of a Shakespeare play with one of your teachers and debating the merits of a contemporary poem or novel with the other. You will have the benefit of guidance and inspiration from A Level English teachers who are specialists in the particular aspects of the course which they will be delivering to you.

Literature raises and explores major dilemmas about life and language: there are no 'neat answers'; dependence upon received ideas or an overly-mechanical approach are not encouraged by the specification of the new course. Your ability to write well, to take risks, to explore your own and other reactions, to read for yourself and to participate in discussion: all these qualities are at the heart of the matter. Such qualities are also central to the study of Literature at university as a single or joint honours option. Further to this the benefits are impossible to quantify, but a reading habit for life or a love of theatre extend well beyond discrete career requirements.

The regular flow of writers into the department (from the Poet Laureate to Booker Prize short-listed novelists) as well as a variety of trips to theatre, poetry readings and lectures are complemented by our annual creative writing week (at the Arvon Foundation centre in Devon), our annual Arts Festival, and the trip to the Cheltenham Festival of Literature. A love of literature and intellectual exploration exists within, and beyond, the classroom.

You will be following the impressive, new OCR course: for AS you are required to study at least six texts. At AS level there is a modern and contemporary slant: you will write coursework on a choice of texts written after 1900, one of which must be published after 1990. In the exam you will be expected to write on one novel (Henry James' *The Turn of the Screw*, for example) and the selected poems of either W. B. Yeats or Edward Thomas.

At A2, there is a marvellous degree of choice for coursework, allowing the teacher to tailor texts, in many cases, to their own academic expertise; the aim will be to study three texts which the class will find enjoyable, stimulating and appropriate to their interests. Students will study a Shakespeare play for the exam (the excellent current selection includes *Othello*, *Twelfth Night*, *Henry IV Part 1* and *The Winter's Tale*. The second part of the exam requires students to explore the links between two texts: *Doctor Faustus* and *Paradise Lost Book 1*; *The Duchess of Malfi* and *The Rape of the Lock*; *'Tis Pity She's a Whore* and *The Wife of Bath's Tale*.

The course is comprehensive, challenging and exciting. The combination of two teachers creates an intellectually charged teaching dynamic and plays to the strengths of the department. The English department is a supportive and creative environment. You will be provoked, intrigued and, hopefully, excited by the new course; you will certainly not be given easy answers or model responses. As such, the course offers a fantastic preparation for university and for life.

*Richard Malpass*

## History

### *Edexcel 8Hi01/9Hi01*

This course builds on the skills and knowledge developed by the study of history at GCSE, allowing candidates to diversify their interests into new and exciting areas. Rather than simply repeating a study of the twentieth century as is the case in many schools we give the boys a choice between two new periods, either Early Modern (1500-1600) or Modern (1815-1900).

The Early Modern course seeks to explain the origins of the modern world. The two AS-level papers look at the role of Martin Luther and the Reformation in Europe as well as the social phenomenon of witch hunting in the 16<sup>th</sup> century to explain the development of modern Europe. Paper two is a focussed study of Henry VIII and his role in defining England as a Protestant modernised monarchy. At A2 there is a much more detailed study of Tudor England in the 16<sup>th</sup> century, ranging from the final days of Henry VIII to the drama of the Spanish Armada.

Late Modernists will study Parliamentary Reform in nineteenth century Britain and the era of Italian and German Unification in the two AS-level papers. This was the period that saw the creation of much of the modern map of Europe as well as the golden age of Britain as a world superpower. At A2 boys widen their geographical range by looking at American history in the same period, with a focus on the America Civil War.

One of the most popular parts of the course is the coursework element in the upper 6<sup>th</sup>. This allows boys to develop skills of independent research and reading, and gives them a sense of what it is like to study history as an undergraduate. Many boys study the Crusades as a contrast to their other more modern papers, and topics such as the capture of Jerusalem, the campaigns of Richard the Lionheart and the origins of the Knights Templar have enthused many of our historians. There are other interesting options too that are more directly linked with the other exam papers - the history of Irish Nationalism in the 19<sup>th</sup> century (modern) and France in the era of Louis XIV (early modern).

In addition upper 6<sup>th</sup> Historians will have the opportunity to learn a departmentally produced History of the World in 24 Chapters, giving boys a unique course that gives them an overview of human history across the world from the origins of Humanity to the present day. Boys also have the chance to hear from prominent historians in the Senior History Society, with speakers this year including Professor Jonathan Phillips and Ian Hislop. Trips are also run, including A-level seminar days and days at the British Museum.

Boys will therefore leave Tonbridge with a much wider knowledge of world history than the usual focus on the 20<sup>th</sup> century and the Nazis, and many boys are inspired to continue with the subject at University - it is consistently one of the most popular undergraduate subjects for Tonbridgians. History also teaches a set of very useful skills. The ability to research effectively and evaluate documents for their content and argument is a skill useful in any career, as is the capacity to analyse problems, structure arguments and write formal essays to put forward ones own argument. Obvious areas needing these skills are Law, Journalism, the Foreign and Home Civil Service, Politics, Business and Management.

History links well with any other subject, either as a contrast to other scientific subjects, or in combination with related arts and languages, most obviously English, Politics and Economics.

*Luke Ramsden*

## **Geography**

### ***OCR H083/ H483***

#### **The Subject**

A geographer is interested in explaining the mosaic of physical and human features on the Earth's surface. Once an understanding has been gained of the laws and universalities that lie behind these spatial patterns, the geographer can go on to make predictions about the future of environmental systems and, thus, to help plan tomorrow's world. Arriving at such an understanding requires the synthesis of material from both the physical sciences (notably Biology, Chemistry and Physics) and

the human sciences (notably Economics, History and Politics) - with the consequence that Geography offers a broad base of study with much to stimulate all A-level students, whether based in the Arts or Science camps. There is growing evidence that such breadth is increasingly valued by society at large and, certainly, Geography graduates from good universities are much sought after.

## **The Course**

The new AS course will consist of two units, with Rivers, Coasts, Cold Environments and Hot Arid Environments forming the 'Managing Physical Environments' topics. The 'Managing Change in Human Environments' topics consist of Urban Change, Rural Change and The Energy Issue. There is no longer a coursework project or a coursework examination at AS.

In the U6th there is scope to study option topics in greater depth, from a range of subjects including Earth Hazards, Climatic Hazards, Population and Resources, and Development and Inequalities.

The A2 course also no longer has any externally examined coursework but there will be a Geographical Skills paper which will test candidates' ability to interpret satellite imagery, photos and maps, their understanding of GIS and their ability to apply coursework techniques. To this end there will be opportunity for practical work, though this will not be externally assessed. Fieldwork is an important part of any geography education and the department runs trips locally (to areas of urban regeneration in London) and to more exotic locations in alternate years, Morocco, Costa Rica, Borneo and Vietnam having been the most recent.

*Christopher Battarbee*

## **Business Studies**

### ***OCR H030/H430***

In most walks of life to come students will be part of, or interact with, organisations. This is a subject that explores how such organisations function: how they choose objectives; how they deal with a changing environment; how they find the right people and get the best out of them; how they use marketing and guide operations to ensure that objectives are achieved; how they use financial accounts to review performance and help with decision-making; ultimately, how they succeed.

The syllabus is broad, highly relevant to the world outside the classroom, and focuses strongly on problem-solving, and on the development of analytical and evaluative skills. The subject suits the sort of student who has strong viewpoints and likes to argue their case. It is not a subject of 'right answers' but of the right way of thinking. A big part of this involves the use of numerical and statistical work, and therefore boys selecting Business Studies should have at least a B grade in GCSE Mathematics, though the emphasis is not upon number-crunching as such, but rather upon the interpretation and application of the numbers.

The AS examination consists of two modules: An Introduction to Business (Unit 1) and Business Functions (Unit 2). These examine the work covered during the first year, which includes an understanding of the needs of a successful business and a review of the functional areas of business: marketing, accounting and finance, human resources and operations management. The two exam papers are case study-based with staggered questions focussed on the businesses in the case studies. The A2 examination also consists of two modules. In Unit 3, boys study operations to a greater depth. They study the key aspects of successful production in terms of planning; managing resources; making decisions about scale and methods; productivity; and technological advancement. The final module, Unit 4, is the synoptic Strategy paper. This basically places the student onto the board of a case-study-based business and, given a wealth of contextual detail, sets them the challenge of managing it successfully and making the right decisions for its future.

Business Studies is a course from which all lively, independently-minded boys will benefit. It will prove particularly advantageous to those planning to enter Law, Accountancy, industry or commerce. It is recognised by all universities and the provision of business-related degree courses is wide. Any student considering such a course would obviously gain from an A level grounding in the subject.

Jonathon Blake

## **Government and Politics**

### ***Edexcel 8GP01/9GP01***

Politics is an exciting and intellectually demanding subject that will appeal to able boys with an interest in controversial ideas and in current affairs – boys who are interested in political issues will be excited by Politics A level. The subject matter is wide-ranging and ever-changing: the formation of the new coalition government and the effect this has had on the UK's political system; the varying ideological positions of each of the main political parties; the power of parliament and how this has varied over time; the decline in importance of the Cabinet; the emerging debate about whether European treaties should be ratified by popular referendum; the increasingly polarised nature of parties in America as reflected in Healthcare reform and other policy debates; the expansions to the power of the President under George Bush and analysis of the Obama Presidency thus far – the list goes on. Many issues are, of course, less high-profile: for example, the growth in judicial activism in the UK; the significance of recent Supreme Court appointments and how they affect the ideological balance of the court. Obviously, however, it is not an A level in current affairs. The course goes behind the events and attempts to provide an understanding of the structure and framework within which the political world operates. As such, it is an academic discipline that treats issues in a rigorous manner and provides an excellent foundation for university study at the highest level.

The AS examination consists of two papers, both of which are devoted to the study of British politics (though with plenty of scope for comparisons with other countries). The papers are: Unit 1 (People and Politics) and Unit 2 (Governing the UK).

In the Upper Sixth, attention turns to America and the political world that follows the Presidency of George Bush and subsequent election of Barack Obama. Boys will understand the very different nature of political life across the pond – the staggering expense associated with campaigning, the fierce debates surrounding morality, the resurgence of political parties in recent years and the way in which pressure groups have adapted as a result, and the strange yet wonderful way in which the American President is elected. Students will also look at the structures of government – the separation of powers which keeps the President out of Congress in an attempt to limit his power, the surprising power of the judiciary and the importance of a 4,000 word Constitution. The papers are: Unit 3C (Representative Processes in the USA); and Unit 4C (Governing the USA).

There will be visits to Parliament and to London Conferences. The Politics Society (under the direction of Upper Sixth form students) welcomes several outside speakers each year, whilst there is a Sixth Form Political Discussion Group which meets on a regular basis. The A level course offers an excellent preparation for any boy who is considering studying Philosophy, Politics & Economics (PPE) or Modern History and Politics at Oxford, or Politics, Philosophy and Sociology (PPS) at Cambridge. At the same time, many students go on to study Politics at other excellent departments around the country – Edinburgh, Nottingham and Essex in particular. At A level, it can be studied with any subject, although common combinations include one or more of Classics, English, History, Economics and Mathematics. Most importantly, however, it will be enjoyed by any boy who has an interest in matters political.

*Nicholas Rendall*

## Economics

### *AQA 1141/2141*

The most commonly held misconception surrounding the study of economics is that it is all about 'money' - in fact it is not (the study of money is actually a relatively minor issue). Economics is about how a society decides to divide up its scarce resources (and, perhaps surprisingly, money isn't actually one of them) and therefore determines who gets what and why. The course examines economic theories and their application to the real world, teaching boys how to think logically, how to analyse data, how to identify trends and draw conclusions from them, and how to present their ideas coherently and effectively. All concepts and theories are illustrated with real world data and case studies, and students enjoy being able to apply their knowledge and understanding to issues which arise daily in the news.

The subject tends to attract two 'types' of sixth form student: (a) the humanities specialist, attracted to the challenge of applying principles to contemporary problems, able to draw historical or overseas parallels, and often interested in the more political aspects of economic decision-making; and (b) the mathematician-scientist, attracted to the more theoretical features of the course with its opportunities for application of statistical techniques to economic model-building and forecasting. Economics can be combined with practically any other group of subjects and is often useful in demonstrating mastery of important skills for an otherwise arts or sciences specialist.

The AS course consists of two papers, and some typical questions give a sample of what is in store. Unit 1 (Markets and Market Failure) will look at questions such as: Why do governments impose taxes on alcohol but not children's clothes? Why have oil prices increased, fallen, and risen so rapidly recently? Has the privatisation of the railways proved disastrous? Should we pay to use a motorway? Should students pay for their university education? Why are tariffs imposed on lamb imported from New Zealand but not on French lamb? In Unit 2 (The National Economy) you might find: What has been the effect of granting the Bank of England independence? What is the New Deal, and is it working? Why are so many companies relocating their plants to Eastern Europe and the Indian sub-continent? Is the Credit Crunch a rerun of the Great Depression of 1929?

The A2 course consists of two papers, and examines the AS ideas and themes in greater depth. Typical questions in Unit 3 (Business Economics and Income Distribution) might include: What rules must a firm apply to maximise its profits? Will the recent nationalisation of RBS and HBOS change their objectives and performance? Has the recent regulation of the banks gone far enough? Could the NHS be replaced by a system of compulsory medical insurance? Has the introduction of the National Minimum Wage resulted in more unemployment? How can small airlines such as Ryanair and Easyjet afford to charge passengers so little? In Unit 4 (The National and International Economy) you might come across: Can a government abolish the famous boom-bust cycle? What impact does a weak pound have on the UK economy? What are the likely economic consequences of increased levels of immigration on the UK economy? What is globalisation and how does it affect the operations of companies such as Microsoft and Coca Cola? How did the collapse of the sub-prime housing market in the USA affect the world economy? What has been the impact of Brazil, Russia, India and China on the world and UK economies?

Economics is an excellent subject choice for anyone with an interest in the world around him, who enjoys problem-solving, and who is able to bring an open-minded, imaginative approach to their studies. The work is very varied, and includes problem-solving exercises, data analysis, case studies, essay-writing and multiple choice questions. Every university in the country has an Economics Department, and some 80% of all entrants have previously studied the subject in the VIth form; it can be studied as a single subject, or in many combinations ranging from Modern Languages through to Computer Science. Whilst A level maths is not a pre-requisite for the study of economics at A level, it is crucial for the subject at degree level at most universities, and so we encourage A level economists to consider taking maths A level as well. Career opportunities open to economics graduates are extremely great and varied.

*John Richards*

## Religious Studies

### *OCR H172/H572*

Are some things always wrong? Do humans have a right to life? If so, when does this right begin? Can Christian ethics contribute anything to contemporary debates about war and terrorism or sexuality? Is Buddhism a religion? What are human beings? Are they merely a bundle of atoms? Why was Jesus executed? Can we really know what happened at Jesus' trials? Did Jesus have coherent aims and objectives? Such questions, and many more, will be discussed over the course of an A level in Religious Studies.

Religious Studies at AS or A-level is an exciting and challenging option that will examine two out of three subject areas outlined below, two different modules are studied each year. It is likely that all boys will study moral philosophy or ethics and either Eastern Philosophy or New Testament Theology. It should appeal to boys who enjoy arguing, grappling with 'big' issues and challenging their preconceptions. GCSE Religious Studies, although useful, is not an entry requirement. There is no coursework.

The Ethics papers examine ethical theory -the tools for tackling practical ethics- and demand an understanding of the theories of 'key' thinkers such as Aristotle, Thomas Aquinas, Kant, Mill and Bentham. It then applies them to contemporary moral issues; in the Lower Sixth the focus is on medical ethics and dilemmas such as abortion, euthanasia, the right to life, the right to a child and genetic engineering. In the Upper Sixth, in addition to philosophical topics such as Determinism and Conscience, war, terrorism, sexuality, business ethics and the environment are considered.

The New Testament side of the course begins with an examination of the social and political world of Jesus and moves on to consider the death of Jesus as recorded in Mark's gospel. In the Upper Sixth Jesus' aims, teachings, ethics and miracles are critically examined. In both years the focus is entirely academic. The text will be subject to intense scrutiny as we piece together a picture of Jesus and the very different world of the gospel writers. In examining the New Testament we will engage with contemporary scholarship and use aspects of sociology, anthropology, ancient history and archaeology to illuminate the text.

In the Eastern Philosophy course we look at the life and work of Siddhartha Gautama, the man from India in the 5<sup>th</sup> Century BC who became known as the Buddha. We look at how the Buddha fundamentally challenged the existing Hindu culture to inspire a practice that is as much about what you do as what you believe. Why do people suffer? How do you lead a life that is truly happy? What is meditation and how does this fit into what the Buddha taught? What do the often misused words karma and nirvana actually mean? At A2 we explore how the teachings of the Buddha spread to other cultures and took new and very different forms, leading to Tibet and the Dalai Lama and to the austere meditation and cryptic riddles of Zen.

Religious Studies is most naturally complemented by other humanities such as English, Classics and History but many scientists have found it enriches their A level studies, especially the medical ethics components, and develops their critical and writing skills.

A level Religious Studies is highly regarded by universities and employers alike as it requires the candidate to analyse, argue and to research independently. The ideal theologian is (or will become) versatile, able to assess texts and arguments from different perspectives and be logical in their thinking. This makes Religious Studies an ideal subject for those considering Law as a profession, but it is also highly regarded by any career which values clear thought and articulate expression.

*Julian Dobson*

# Mathematics

## *OCR MEI Structured Mathematics*

Our Mathematics courses offer certifications ranging from the three modules required for AS Mathematics to the fifteen modules for two full A levels and AS Further Mathematics (Additional) according to a boy's interests, aspirations and aptitude. Note that Mathematics courses are built up of multiples of 3 modules rather than the multiples of 2 which other subjects use.

The study of Mathematics develops skills of analysis, logical argument, problem solving and communication. As such it is highly valued by universities and employers. Indeed, the number of careers requiring good mathematical skills continues to grow apace, so that a degree in Mathematics (either on its own or combined with another subject) is arguably one of the most flexible of all degrees, leaving graduates with an unsurpassed range of openings.

### **(Single) Mathematics (occupies one block)**

The specification is divided into three strands: Pure Mathematics, Mechanics and Statistics. Pure Mathematics builds up in a coherent way the tools a mathematician needs to solve problems. The other two strands are examples of Applied Mathematics and show how mathematical techniques can be used to model a diverse range of phenomena in the scientific and human worlds. Both the AS and A2 Mathematics courses consist of two Core Pure modules and one Applied module; one of the A2 Core modules involves a piece of coursework on the use of spreadsheets to solve equations numerically.

**For those taking IGCSE in the Third Year**, Mathematics AS/A level is a realistic choice if they are predicted an A or A\* grade, have good algebraic skills, are well-motivated, and if they pass an aptitude test. But it is a demanding AS/A level and such boys usually find it helpful to support their Mathematics with another scientific/numerate subject. Three modules are taken at the end of the Lower Sixth and three in the Upper Sixth; the specification allows some time for consolidation and this is reflected in our organisation of the course.

**For those who have already studied calculus**, for example, by having taken IGCSE early and having done the post-GCSE Mathematics course at Tonbridge, Mathematics A level will always be a realistic choice and they will be strong candidates. For such students, Mathematics can sensibly be linked with any combination of subjects. By the end of the Lower Sixth four modules will have been taken and the final two are taken in the Upper Sixth. The extra time available will be used to target the A\* grade.

In addition, for those satisfying the conditions for Double Mathematics (see below) and choosing Maths in the D block, it will be possible to study 9 modules in one A level block. This will lead to an A level in Maths and an AS level in Further Maths and can be studied with three other subjects.

### **Double Mathematics (occupies two blocks)**

Double Mathematics is our most prestigious Mathematics course. But it is a demanding and fast-moving course. We expect most boys studying Double Mathematics to be confident with the content of the post-IGCSE Mathematics course at Tonbridge (or its equivalent elsewhere). However there will also be a set starting straight from the IGCSE, but only if there are sufficient such boys. They would need to have very strong IGCSE results, typically already scoring an A\* at the IGCSE mock and 80% on the Harder Topics Test in January or, for those from outside Tonbridge, 80% on the single maths entry test.

This choice leads to two A levels (Mathematics and Further Mathematics) and requires two blocks. Those with a post GCSE background are taught in 24 ppf and those straight from IGCSE have 32ppf, split between three teachers. We follow the same modular specification as for Single

Mathematics but seven modules are taken by the end of the Lower Sixth and at least twelve by the end of the Upper Sixth. There are usually three Double Mathematics sets, two starting from a post-GCSE course and one straight from GCSE; some of the top set often take fifteen modules to achieve an extra AS level in Further Mathematics (Additional). Each of the three strands (Pure, Mechanics and Statistics) is studied to a greater depth than for Single Mathematics; for those starting from a post-GCSE background there is also a second coursework task on modelling with differential equations.

### Single Mathematics or Double Mathematics?

Boys with suitable mathematical ability to study Double Mathematics often have a difficult choice on this question. Our advice on which course to choose depends on the candidate's likely degree subject. The following may help boys likely to want to read the subjects indicated below at a top UK university.

- **Mathematics or Computer Science:** boys should aim for the 12 or 15 module course and should combine their **Double Maths** course with Physics and one other academic subject.
- **Physical Sciences:** boys should aim for the 12 or 15 module course and combine their **Double Maths** course with Physics and Chemistry.
- **Biological Sciences:** boys should EITHER aim for the 12 module course and combine the **Double Maths** with Chemistry and Biology OR aim for the 9 module course and combine **Maths** with Chemistry, Biology and one further subject, probably Physics.
- **Engineering:** boys should preferably aim for the 12 module course and combine their **Double Maths** with Physics and Chemistry *or* DT, or, alternatively, select the 9 module **Maths** course and combine it with three more subjects including Physics and two others (Chemistry, Economics and Design Technology are popular).
- **Medicine:** boys should aim for the 9 module **Maths** course and combine it with three other subjects including chemistry and biology plus one other (often Physics, but Economics, an arts subject or a language are also possible and attractive; Religious Studies has a medical ethics component). The 12 module course combined with chemistry and biology is also possible.
- **Economics** and related courses: boys should aim for the 12 module **Double Maths** course and combine it with economics plus one other subject (Government and Politics, History, a language or Physics are good fourth subjects).
- For **Law** the choice of A level subjects is much less important than the quality of the marks and grades achieved. Accordingly any of the maths courses described above would be fine. Subjects involving essays are helpful and the optional AS course in Critical Thinking helps to prepare for the Law Aptitude Tests required by many UK universities.

It follows from the above that boys who wish to keep their options open between **Engineering and Medicine** at this time should select the 9 module maths course and take it with Physics, Chemistry and Biology. Those undecided between **Engineering and Economics** should select the 12 module course and take it with Physics and Economics. Double Mathematicians have been conspicuously successful in obtaining Oxbridge places in recent years.

*Ian Jackson*

# Physics

## *AQA 1451/2451*

Physics is the most fundamental of the sciences, studying our basic ideas about the way the Universe works and aiming to bring them together into a coherent whole. Areas of interest within the subject range in scale from the tiniest fundamental particles to the gross structure of the Universe. Physics spans from the experiments at CERN to deep space astronomy pushing back our understanding of the world around us. Between these extremes the domain of A-level Physics overlaps significantly with Mathematics (Calculus and Mechanics especially) and with Chemistry (Materials and Physical Chemistry). Thus these subjects make particularly good partners for Physics A-level and are a frequently chosen combination. There are also clear links with areas of Economics, Geography, Biology, Computing and Design Technology.

A-level Physics is still regarded as one of the rigorous A-levels and identifies a strong candidate on any university application or CV. The course will provide you with practical skills, the ability to sift through information and find the relevant point. Most of all an A-level in Physics will provide you with the aptitude to solve real world problems creatively; after all it was Einstein that said, “The true sign of intelligence is not knowledge but imagination.”

The AS course covers a mixture of intriguing phenomena and the underlying mechanics of how things behave. Some new topics are opened up including particle physics, interference and quantum mechanics. In addition, many of the ‘core’ ideas of Physics are taken on and developed from the IGCSE course – electricity, electromagnetic radiation, particle, materials, waves and mechanics among them. For this reason, a good A-grade in GCSE Physics or double A grade in Dual Science is an important starting point. In addition, Physics relies heavily on mathematical skills and you will find the course difficult without at least an A-grade grasp of GCSE maths.

The A2 course extends our understanding of the interactions of nature, from field theory and gravitation to oscillations, nuclear instability and astrophysics or applied Physics, for those bent on Engineering. The treatment becomes increasingly precise, and we do a great many experiments because Physics is, above all, a practical subject.

As well as leading directly on to degree courses in the Physical Sciences and Engineering, Physics A-level provides particularly strong support for applications to read Medical Sciences, Mathematics, and Computing. A background in Physics can lead to careers in Finance, Law, Management and Research. Good Physics graduates are highly numerate, problem solvers and are particularly sought after in the rapidly developing sectors of Quantitative Finance, Telecommunications and Information Technology, and it should be no surprise that Physicists command the highest graduate starting salary of all graduate degrees.

Ralph Fleming

# Chemistry

## *AQA 1421/2421*

Chemistry aims to explain the material world around us. Chemists are involved in an extremely diverse range of areas, using their skills of knowledge and analysis to solve many of the problems we face. Some Chemists are working on the Human Genome Project, helping to provide the technology that allows us to sequence DNA, while others discover and synthesise the new drugs needed to combat disease. You will find Chemists involved in predicting the behaviour of molecules, using powerful computers, while others will be designing new, lightweight power sources that will be less polluting than those we use today. Polymer Chemists may be discovering new, light emitting chemicals that will be the basis of paper-thin TV screens for the future, while another Chemist will have discovered ways to restore archaeological artefacts. Many Chemistry graduates end up working in Law, Financial Services and Management, where their particular skills and training are highly valued.

A-level Chemistry will give you the opportunity to understand the world around you at a more fundamental level and provide you with a sound scientific training that will be invaluable in securing a place at university to read for a wide range of courses.

The A-level is divided into three main areas which are studied at both the AS and A2 levels.

**Physical Chemistry** looks at the way that the structure of atoms and molecules controls their properties. It investigates what makes some reactions go very quickly, while some others are slow. It looks at the energy changes that accompany chemical reactions and how atoms and molecules are bonded together.

**Inorganic Chemistry** studies the patterns and trends in the periodic table. This is done in more detail than at GCSE and the emphasis is always upon understanding the reason behind the observed experimental facts.

**Organic Chemistry** considers the uniqueness of carbon and the vast range of compounds that it can form. Starting with simple molecules, the types of reactions undergone by organic chemicals are studied. The precise mechanism of these reactions is discussed and then it is shown how these simple ideas can be applied to much more complex molecules to explain their behaviour.

The work in the A2 year essentially builds upon the ideas introduced in the AS level. In both years, there is a small amount of practical coursework to do that complements the ideas introduced in the theory lessons. However, much laboratory work will be completed during the two year course, reflecting the practical nature of the subject.

A-level Chemistry enables a student to develop many skills that universities and employers find invaluable. The chemist is trained to problem-solve and to analyse data looking for patterns. He can build theoretical models to account for experiments and can communicate ideas in a logical fashion. These skills help make A-level Chemistry not only vital for most scientific degree courses, including medicine, but also a useful second or third A-level for many non-scientific degrees. It is an intellectually challenging course and you will find the going tough if you do not have at least a grade A in IGCSE Chemistry or two As in Double Award Science as a starting point.

*James Fisher*

# Biology

## *OCR H021 & H421*

At A-level it is important for the student to understand the principles underlying the subject. In Biology some deductive reasoning is needed, particularly in order to attain a high grade. Much of this can be achieved by effective reading around the subject from the extensive material available in the department. The most successful candidates for Biology use written, descriptive, experimental and data-based material effectively both on paper and in oral discussion, such skills certainly being high on the agenda for all the top universities.

The AS course will cover *Cells, Exchange & Transport* and *Molecules, Biodiversity, Food & Health*, whilst the A2 will cover *Communication, Homeostasis & Energy and Control, Genomes and Environment*. Practical work is assessed in both AS and A2, using exercises set by the board. A-level biologists are typically taught by two teachers throughout the course.

Many students study A-level Biology partly as a means of preparation for Medical or Veterinary Science, Biological Science, applied biological degrees or other science degrees at university. Although it is by no means a requirement, Biology A-level is perhaps best combined with other sciences, especially Chemistry, or Geography (for well over half of the medical schools, Biology *and* Chemistry at least to AS are now requirements). However, in recent years, students have successfully combine Biology with both English and languages, and many medical schools positively like the inclusion of one non-science A level. You should have at least an A grade in GCSE Biology and a B in Chemistry, or two As in Double Award Science, because biochemistry is an important part of the course.

The study of ecology will probably remain an important element of the A-level. To help cover this area appropriately, it is the intention that Lower Sixth biologists spend a week in the Easter holidays in close study of the ecology of rocky shore habitats. All are expected to attend the course if at all possible (a charge for this being billed to parents) which has recently been held in Cornwall or Devon.

*Paul Ridd*

## Design Technology: Product Design

### *Edexcel 8RM01/9RM01*

If you are contemplating a Design and Technology course in the sixth form we would expect you to have a genuine interest in designing and making activities. It is a rigorous, stimulating and demanding subject, which attracts individuals who are highly motivated and are able to manage their time resourcefully in a purposeful way. If you are interested in design-related issues, enjoy designing and wish to study materials and manufacturing technologies and other related subjects in depth, this syllabus should be considered alongside Science subjects and Art & Design, especially if you are contemplating a career in engineering or in another design-related field. Possible combinations might be Double Maths, Physics, and Design Technology *or* Maths, Physics, Chemistry and Design Technology *or* Maths, Physics, Art and Design Technology.

You will enjoy the use of a superbly resourced design and manufacturing workspace and have the opportunity to meet practising designers from a wide field of disciplines, while being encouraged to develop your own design education through visits to exhibitions and participation in special events throughout the year.

### **The course:**

The Edexcel course at both A2 and AS level is designed to encourage you to develop your own design and technology capability by drawing on your powers of creativity, inventiveness, innovation and initiative through activities which incorporate planning, research, synthesis, communication and manufacturing skills to a very high level of operation. You will also develop a critical understanding which can influence the processes and products of design and technological activity from a historical perspective and in current practice. **We will encourage you to explore ideas of originality and value, to question and challenge, to envisage what could be by designing new products that are sustainable and imaginative.** You will learn to apply essential knowledge and develop understanding and skills of design production processes to a range of technological activities and develop understanding of industrial practices while enhancing your ICT and CAD/CAM skills for design and technological applications.

### **Assessment Structure:**

The full A-level is made up of two parts and covers four units:

The AS is the first half of the A-level course and is worth 50% of the final grade. The second half, A2, is taken in the UVith, and is also worth 50% of the overall grade.

In terms of coverage the AS course covers less content in less depth. In the second year you will build on what was learnt in the first year and study in more detail, with additional content up to full A-level standard.

Assessment of the course takes place at the end of each year.

### **AS level:**

The first year assessment, leading to an AS, consists of 2 units. **Unit 1: *Portfolio of Creative Skills*** involves **one** portfolio with **three** distinct sections – product investigation, product design and product manufacture. Using three different products for each section we will encourage you to be as creative as possible, by demonstrating blue sky thinking and technical and practical skills. You will not carry out one large design and make exercise, but three smaller focused tasks which build up to provide a detailed portfolio of your skills. The unit is internally marked and externally moderated. Work for this unit normally starts in the Michaelmas Term and accounts for 30% of the overall result. **Unit 2: *Design and Technology in Practice*** involves the study of a broad number of subject areas from materials and components, working properties of materials, hand and commercial processes, product manufacture and design in practice. On completion you will sit a 1 1/2 hour exam worth 20%.

### **A2 level:**

In the second year there are two further units of assessment. **Unit 3: *Designing for the Future***. You will study a range of modern design and manufacturing practices and contemporary design issues, covering topics such as ICT and systems and control technology in the design and manufacture of products, design history and sustainability, in the context of responsible design. This component is 20% of the final grade and will be tested by a 2 hour exam. For **Unit 4: *Commercial Design*** you will submit a full scale manufacture of a complex commercial artefact for a client or user group which reflects how a professional designer might deal with a design problem and its resolution. This contributes 30% towards the final grade.

*David Dixon*

# Music

OCR AS - H142 A2 - H542

## General Aims:

1. To help you enjoy and develop musical skills, knowledge and understanding.
2. To provide an interesting, varied and structured framework for VIth form involvement with music, both practical and intellectual.
3. To give you good foundations for any of the following:
  - lifelong enjoyment of music as a listener, performer or composer
  - further musical studies, or studies with a musical element
  - a career in music or in a music-related profession.

## Course Content:

The new OCR specification allows considerable flexibility for you to develop your own particular musical strengths and enthusiasms via three modules, focusing both at AS and A2 on the following different but related aspects of music:

- 1 *Performing.* This module aims to help and encourage you to develop your performing and musical interpretation skills, either through playing or singing, and there is a free choice about the type or style of music you choose. Both at AS and A2, as well as a recital, the final assessment includes a short discussion with the visiting examiner about your performance. This module carries 40% of total AS and A2 marks, whereas modules 2 and 3 each carry 30%.
- 2 *Composing.* This involves a combination of learning about the normal conventions of musical language and its common procedures, as well as developing your own creative skills, through coursework during the year. The style of music you compose is up to you, and the two year course covers writing both for instruments and for voice.
- 3 *Historical and Analytical Study.* This is approached in both years by developing the skills of describing and explaining what is heard in music, through aural perception and musical analysis. This involves studying set works, scores and recordings as well as learning about their historical setting and background context. The music explored will be very wide-ranging, from Classical, Romantic and 20<sup>th</sup> century, through Jazz to Pop. This module is assessed via a final written and listening exam, with individual CD players.

## General Information:

You do not necessarily need to have GCSE Music, though it is usually an advantage. As music is an art and a language, as well as both a practical and theoretical subject, it combines well with any other choice of A levels, for example as a fourth to complement three sciences. Anyone choosing music will benefit from small set sizes and a tutorial approach to teaching, with individualised help towards working in whatever musical idiom and style suits you best. Just so you know, Tom Chaplin (of Keane) did Music A level here, and got an A grade!

*Julian Thomas and Mark Forkgen*

## Art

### *Edexcel 8AD01/9AD01*

#### **The Course:**

The AS/A-level Art course is designed to help develop from GCSE your understanding and appreciation of the world in which you live. We aim to provide you with a language with which to respond creatively and meaningfully to this world. Whilst building a working knowledge of the materials, practices and techniques within Art, the course allows you to develop your imaginative and creative powers, as well as your experimental and analytical skills. The practical work will be supported by a strong emphasis on the History of Art, allowing you to develop both a specialist vocabulary, and an insight into the role of Art within a wider context. This knowledge will provide a sound bedrock of understanding from which you will be encouraged to develop your work. Learning to draw, and the development of a confident and fluent drawing practice is seen as an essential element of the AS/A-level course. This is emphasised and consolidated by the compulsory weekly Life Drawing sessions. Other disciplines include painting, printmaking, sculpture, collage, photography, ceramics, computer generated graphics, and any creative combination of the above!

#### **AS level:**

At Tonbridge the AS is a one year course and serves as the first year of the full A-level course. There are 2 units, a Coursework Unit (60%) and the exam Unit (40%). Within the course students will be required to undergo an extensive, practical study culminating in some sort of 'conclusion', or finished piece. The development of sketchbooks and/or work journals forms a significant part of the course as does the development of drawing skills. To this end all the boys are encouraged to attend Life Drawing, whether in Activities on Wednesdays or on Monday evenings. A good grade at GCSE is expected.

#### **A-level:**

The A-level is a continuation of the AS course. The study of the History of Art is seen as a vital element of all Art education at the school, and this culminates at A-level in the Coursework Unit (60%) where they are encouraged to write a Contextual Study in parallel to their practical work. This study can take the form of an illustrated thesis (1,500 - 2000 words) or another form (video, slide presentation, exhibition). There is an element of problem solving within the course, where students need to tackle an issue (e.g. the illusion of space, race and gender within Art) exploring it visually, verbally, and/or in any other way. The culmination of the course is the exam (40%) which the students undertake in the Lent Term.

Both AS and A Level students formally show their work twice a year in the Tunnel Gallery, with a 'grand' end of year show when the whole department is transformed into an Art Gallery and their work can be seen as a whole.

*Charlotte Chisholm*

# Drama & Theatre Studies

## *EDEXCEL 8DR01 and 9DR01*

Drama & Theatre studies is a very demanding but enjoyable A level. The course requires a high degree of creativity, practical involvement in the world of the theatre, and a desire to explore the whole function of the role of drama within society. It also demands a sophisticated, committed level of group work and an appetite for intellectual enquiry.

Unit 1 (AS) Exploration of Drama and Theatre (20%) introduces students to the practical analysis of plays written for the theatre. They learn how to explore plays in a variety of ways so that they become familiar with the way written plays can be interpreted for realisation in performance. This exploration and assessment is based on the study of two contrasting plays and is achieved through practical work in the classroom and analysis of text and style of performance. At least one of the plays is studied in the light of a recognised Theatre Practitioner. Students also submit written work that reflects upon this exploration process (3,000 words in total), plus an evaluation of a live theatre performance (1,000 words).

Unit 2 (AS) Text in Performance (30%) requires students to complete a public performance in front of an external examiner. The first section requires students to offer either a monologue or duologue. A written explanation of their interpretation is sent to the examiner one week in advance of the assessment. The second section requires students to contribute to a performance of a professionally published play by a recognised playwright, no more than 1 hour in length.

Unit 3 (A2) Exploration of Dramatic Performance (20%) is the devising element of the course. In groups of up to six, students devise or adapt a piece of theatre using the knowledge and understanding gained at AS. Students will be assessed on both the process of creating original theatre and the final performance which is performed in front of an invited audience. Students are also required to complete a written reflection and evaluation (3000 words) on the research process and development.

Unit 4 (A2) Theatre Text in Context (30%) is an externally examined written unit. It requires the detailed study of one set play text, currently *Woyzeck* by Georg Buchner and one prescribed historical period of theatrical development, normally Shakespeare.

The 2 ½ examination has three sections. Sections A and B require students to explore the set text from the point of view of a director working. For Section C students will have been to see a live performance of the chosen text which they must evaluate and compare with the original staging conditions of the play.

Ideally, those opting for this course will have taken GCSE Drama successfully. However, a commitment to theatre and a willingness to develop one's self-confidence through a subject that has a strong practical emphasis are as important, (about 80% of the lessons have a practical component). The course is intellectually rigorous but also gives those with specific practical skills the opportunity to do well within a subject that necessarily involves a different, exciting approach to learning.

Gavin Bruce

# Physical Education

## *AQA 2580*

Every year more and more people take up sport. With London hosting the Olympic games in 2012, Physical Education and sport has never played such an important part in society. As somebody studying Physical Education you will be learning about something that is a significant part of our culture and everyday conversation. Physical Education at A level will allow you to study many facets of a number of sports. This multi-dimensional course will require you to study sports in detail, looking at a variety of subject areas including: physiology, psychology and contemporary issues such as performance enhancing drugs. Within the course there is a large amount of performance analysis, so expect to be using the new facilities on offer in the school media centre.

### **The course**

In the first year there are two main topics.

- 1) The first covers the beneficial effects of a healthy lifestyle and includes subjects like the physiological effects of exercise and how people acquire sports skills.
- 2) The second study topic you'll learn how to analyse and evaluate an athlete's performance, how to improve performance, and the factors affecting gaining new skills.

In the first year there are two assessments.. A written exam accounts for 60% of the marks for the year. The second assessment is a practical exercise where the candidate is marked as a player and/or coach, and/or official, depending on personal goals. This practical assessment is based on the second study topic of the year and accounts for 40% of the marks for the year.

In the second year there are also two main study topics.

- 1) The first continues with the theme of optimising the performance of an athlete. This includes how physiology can improve performance for elite athletes, as well as studying the important topics within sport today.
- 2) The second study topic looks at performance in competitive situations. This includes the observation and analysis of weaknesses, along with ways of correcting any errors the athlete is making.

The assessment for the second year is the same. A two hour paper accounting for 60% of the marks. Then a practical performance in a competitive situation as a coach, official or performer, along with an oral and written presentation on how to correct weaknesses in an athlete, will account for the remaining 40% of marks for the year.

PE goes well with other subjects. If you want a career in physical education you might also consider courses like Biology. But no matter what your career ambition, if you are passionate about sport, PE works well as a contrasting fourth A-level with unrelated subjects.

This course will require a minimum of six participants for it to be viable.

*Christopher Morgan*

This copy is for your reference.

Note your choices on this form.

Name and initials: \_\_\_\_\_

House: \_\_\_\_\_

### AS/A-level Choice Form for entry in September 2012

#### AS Level Choice

1. Please indicate below your choice of AS level subjects from the list **offered on page 11** of the Sixth Form Curriculum brochure; it doesn't matter which order you put them in:

1	2	3	4
_____	_____	_____	_____

2. If there is doubt about your choice of AS levels, list any alternative combinations you are considering:

1	2	3	4
_____	_____	_____	_____

Or

1	2	3	4
_____	_____	_____	_____

**Possible courses at university include:** \_\_\_\_\_

Choices approved by Parent: \_\_\_\_\_

Choices approved by Housemaster: \_\_\_\_\_

*Please make your choices on the Parents' Portal by 8.30 a.m. Monday, 6<sup>th</sup> February 2012*

## Timetable for Sixth Form Curricular Matters

### Lower Sixth

November – January	Assessment tests in all subjects
January	Oxbridge Evening for boys and parents
January	Oxbridge classes start
	Progress review for all boys
February	LVI Parents' Evening (to discuss AS progress)
April	AS mocks taken over two days at the start of term
	Open evening for parents and boys on application to University
May/June	AS Examinations (study leave during main period of the AS examinations)
Late June	Preliminary discussion of boys' A2 programmes with Housemasters
August	AS results published
Late August / September	Finalisation of A2 programme

### Upper Sixth

September/October	UCAS and Oxbridge application forms completed
November	UVI Parents' Evening (to discuss AS results, A2 progress and UCAS prospects)
November - March	Interviews at universities
December	Interviews at Oxford and Cambridge
Easter holidays	Cornwall Revision Party (optional)
May/June	A2/AEA/STEP Examinations (study leave from half-term)
August	A-level/AEA/STEP examination results published