Loreto sixth form college

SCIENCE & MATHS

APPLIED SCIENCE

BIOLOGY

CHEMISTRY

COMPUTER SCIENCE

IT

MATHS & FURTHER MATHS

GEOGRAPHY

PHYSICS

SPORT

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Ofsted Outstanding Provider

SCIENCE & MATHS

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VISIT LORETO.AC.UK FOR MORE INFO

Our purpose built Science labs, well equipped computer suites and well resourced teaching rooms enable all subjects in the faculty to deliver impactful lessons, inspiring a large percentage of students to study Science subjects at university and beyond. Whether you study Biology, Chemistry, Physics, Maths, Computing, Geography or one of our vocational options in ICT, Sport or Applied Science, our dedicated, motivating teachers ensure students make fantastic progress.

Simon Moss
Head of Faculty

GEOGRAPHY

LORETO.AC.UK/COURSES/**GEOGRAPHY**

A level Geography at Loreto focuses on the study of contemporary geography and the relationship between human populations over space and time with the environment. The examples we study vary in scale from local to global.

Integrated into the course are a variety of different skills areas, including investigative, cartographic, graphical, ICT and statistical.

The Geography course will equip you with a wide range of skills highly valued by universities and employers. Many of these skills are transferable to other courses of study such as essay writing, statistical skills, analytical skills, cartographic skills, graphical skills, problem solving, decision making, team working etc.

Geography is relevant to so many career paths such as urban planning, hydrologist, volcanologist, disaster relief, civil engineering, overseas development, environment agency analyst, environmental campaigner and to many other careers such as accountancy, journalism, marketing and teaching.

The department has run field trips to a variety of areas, in the past visiting the River Bollin, North Wales, Salford Quays and the Peak District. There have also been residential field trips to Reykjavik, Iceland and California, USA.

ENRICHMENT

TRIPS TO ICELAND AND CALIFORNIA

THERE ARE SO MANY THINGS TO GET INVOLVED IN AT LORETO, FROM SUBJECT AMBASSADOR ROLES AND TEAM SPORTS TO TRIPS OF A LIFETIME. I'VE MET SO MANY LIKE-MINDED NEW FRIENDS AND THE STAFF ARE BRILLIANT, SO SUPPORTIVE AND UNDERSTANDING.

Grace McAvoy, Geography Academic Ambassador

BIOLOGY

LORETO.AC.UK/COURSES/**BIOLOGY**

A level Biology covers a varied range of topics including the internal workings of organisms in physiology, the interdependence of living things in ecology, social issues including human influence on the environment and the ethical considerations of genetics. The course provides a good foundation for further study of Biology or related subjects in higher education.

You will develop your practical skills throughout the two years in order to gain a separate practical endorsement certificate. For this you will complete a minimum of 12 experiments, assessing a variety of lab skills.

Biology students go on to pursue a wide variety of related destinations. These include degree courses in Medicine, Dentistry, Veterinary Science, Biomedical Science, Biochemistry, Zoology, Animal Behaviour, Marine Biology, Environmental Science, Physiotherapy and Sports Science. Many careers within research, healthcare and conservation are accessible through studying Biology.

Biology students have taken part in a range of different activities and trips including the Biology Olympiad, lectures from academics and field trips to Iceland and California.

ENRICHMENT

TRIPS TO ICELAND AND CALIFORNIA

LORETO ENABLED ME TO DEEPEN MY UNDERSTANDING OF OPPORTUNITIES OUTSIDE OF COLLEGE. THE ANIMAL RESEARCH EVENT REALLY HELPED ME TO GAIN A BIGGER INSIGHT TO THE WORLD OF BIOLOGY AND MY FUTURE.

Leah Moghimi

CHEMISTRY

LORETO.AC.UK/COURSES/**CHEMISTRY**

In A level Chemistry you will develop your knowledge and understanding of atomic structure and the fundamental ideas on which numerical work and Inorganic Chemistry are based. You will also study the functional groups of molecules and their reactions and consider issues around applying Organic Chemistry to everyday life.

Practical skills are developed throughout the year, with practical work being carried out each week, and assessed as part of the written examinations and the practical endorsement.

An A level in Chemistry will allow you to pursue any number of avenues such as medical and veterinary courses or other Science careers/courses like Forensics and Geology. Students also go on to study a range of other subjects such as Law or Accountancy.

Chemistry students have taken part in a range of extracurricular activities including the Cambridge Chemistry Challenge and the Chemistry Olympiad.

ENRICHMENT

CAMBRIDGE CHEMISTRY CHALLENGE AND THE CHEMISTRY OLYMPIAD

BEING SURROUNDED BY OTHER EXCEPTIONAL PUPILS, NEW AND OLD FRIENDS ALIKE, HAS REALLY INSPIRED ME TO DO WELL AS A STUDENT.

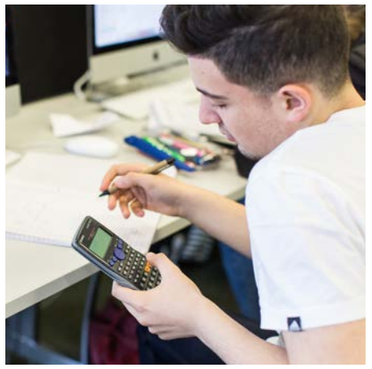
Don Rocco Espina

MATHS & FURTHER MATHS

LORETO.AC.UK/COURSES/**MATHS** | LORETO.AC.UK/COURSES/**FURTHER-MATHS**

ENRICHMENT

SENIOR MATHS CHALLENGE, BRITISH MATHEMATICAL OLYMPIAD AND MATHS MENTORING



The College offers two A level mathematical courses. The Maths Department also offers a variety of different enrichment opportunities including the Senior Maths Challenge and the British Mathematical Olympiad. Students have had the opportunity to take part in the Maths Mentoring Scheme where they work in local primary and secondary schools to support Maths teaching.

A LEVEL MATHEMATICS

A level Mathematics is a versatile, facilitating A level for those students who really enjoy solving equations, drawing graphs and working with algebra. Pure Mathematics contributes two-thirds of the course and involves primarily mathematical proof, geometry and algebra. The remaining third of the course is split evenly between Statistics and Mechanics (the study of how objects move).

A LEVEL FURTHER MATHEMATICS

Students with a particular aptitude for Maths have the opportunity to study A level Further Mathematics alongside the A level in Mathematics. Further Mathematics continues to build on the maths learnt in Mathematics A level, exploring more complex algebra and calculus as well as building on the Applied Mathematics. The two A levels are taught together so students get to experience some Further Mathematics topics early in the course like complex numbers and roots of polynomials. Students will experience new topics such as De Moivre's Theorem and matrices that they have not met before in GCSE as well as building on their prior knowledge of topics like trigonometry into the calculus of inverse trigonometry and hyperbolics. In addition, students get to develop their use of Pure Mathematics in a more applied setting such as the use of differential equations in mechanics.

> **"COMING TO LORETO HAS GIVEN ME A CHANCE TO TAKE PART IN A VARIETY OF ENRICHMENT OPPORTUNITIES LIKE THE MATHS MENTORING SCHEME. TEACHERS HERE ARE ALWAYS WILLING TO HELP TO ENSURE THAT WE DO THE BEST THAT WE CAN."**
>
> **Tiffany Tran**

PHYSICS

LORETO.AC.UK/COURSES/**PHYSICS**

The study of A level Physics develops skills of problem solving and analysis, logical thinking, clear and concise communication, practical skills, efficiency in organisation and mathematical skills.

ENRICHMENT

INSTITUTE OF PHYSICS COMPETITIONS AND ORIGINAL RESEARCH

An A level in Physics shows you are confident with both problem solving and scientific thinking, and are good at working with numbers. Physics will challenge you to think about the world you live in and explain why and how things happen.

The vast majority of Physics students pursue a science or engineering based course such as Mechanical Engineering or Aeronautical Engineering, with some as varied as Robotics or Aviation Technology.

Physics students have the opportunity to take part in competitions run by the Institute of Physics and carry out original research as part of the Physics research group.

APPLIED SCIENCE

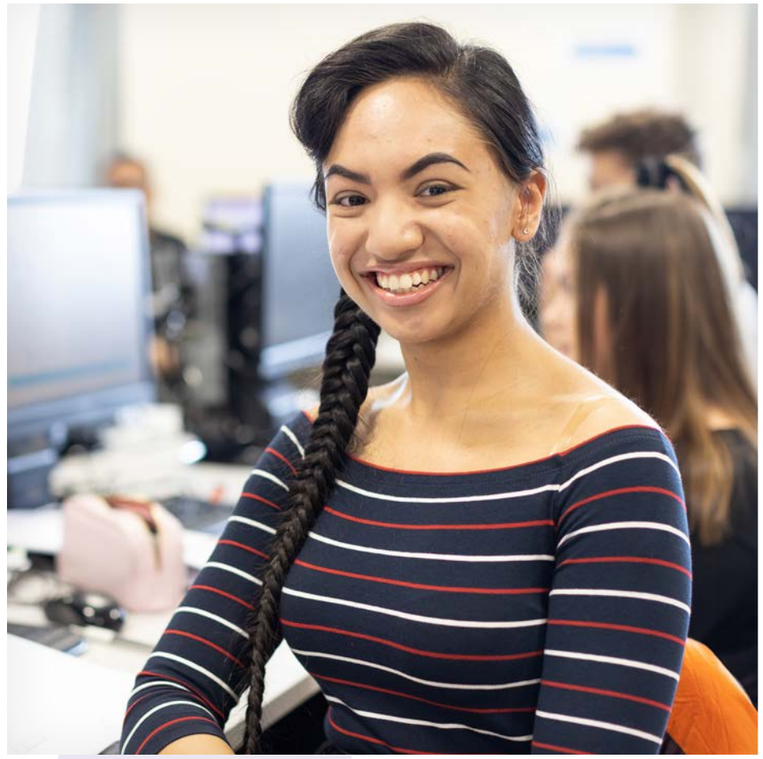
LORETO.AC.UK/COURSES/**APPLIED-SCIENCE**

Applied Science is an applied qualification for students wanting to continue their education through applied learning and who aim to progress to higher education and to employment in the Science sector.

As part of this course students will study elements of Biology, Chemistry and Physics. On this course students will develop the transferable skills which are highly regarded by both HE and employers, including learning how to plan investigations, collect, analyse, and present data and communicate results. The qualification is recognised by universities as contributing to meeting admission requirements for a wide range of courses including Psychology, Nursing, Sport Science and Environmental Science.

COMPUTER SCIENCE AND IT

LORETO.AC.UK/COURSES/**COMPUTER-SCIENCE** | LORETO.AC.UK/COURSES/**IT**



A LEVEL COMPUTER SCIENCE

This course focuses on the fundamental concepts of computer architecture and the development of software.

The theory component of the course investigates topics such as hardware, networking, algorithms, data structures and computational mathematics. The coursework component is weighted at 20% and students are required to undertake an in depth programming project to solve a realistic problem.

You will develop analytical and problem solving skills in addition to analysis, design, software development, documentation, testing and evaluation of a system leading to a solution to the given problem.

Many of our students go on to university or degree apprenticeships in Engineering, Computer Science and Software Engineering.

Computer Science students have had the opportunity to take part in a range of different extracurricular activities including Coding Club.

BTEC NATIONAL EXTENDED DIPLOMA IN COMPUTING

This is a two year Computer Science course that is equivalent to three A levels.

Students will learn problem solving skills including coding, project management, security and encryption and many more skills that are used by organisations in today's business environment. There are 13 units to be studied in total; of these, four are externally assessed; two by external examination and two are controlled tests which are set and marked by the awarding body. The remaining nine units are internally assessed via course work and practical tasks.

The course carries UCAS points and is recognised by UK universities as fully meeting admission requirements for many degree and foundation degree programmes.

BTEC EXTENDED CERTIFICATE IN IT

This course is equivalent to one A level and can be studied alongside other A level or BTEC courses. It is suitable for students who are interested in computers, but who do not want to learn to code.

On this course you will develop a wide range of skills, including how to use popular software such as MS Excel and MS Access confidently to solve problems, the basics of building a computer and installing software. You will also carry out research and write extended reports on a range of topics.

On successful completion of this course you can progress to employment or apprenticeship, or you can progress to higher education and continue with degree studies in the same, or related vocational area.

"I ENJOYED TAKING PART IN CODING CLUB AND MEETING LOTS OF DIFFERENT TYPES OF PEOPLE."

Hebron Daike

"MY MOST FAVOURITE MEMORY AT LORETO IS WINNING THE HACK MANCHESTER CHALLENGE IN LOWER SIXTH. IT WAS A COMPETITION I WASN'T AWARE OF PRIOR TO COMING TO LORETO AND WAS STRONGLY ENCOURAGED TO DO IT BY MY COMPUTER SCIENCE TEACHER."

Yong Xu, former Computer Science student

ENRICHMENT

CODING CLUB

BTEC SPORT

LORETO.AC.UK/COURSES/**SPORT**

TEACHERS PROVIDE EXCELLENT ACADEMIC SUPPORT FOR STUDENTS. THEY ARE GENEROUS WITH THEIR TIME OUTSIDE OF LESSONS AND EXTRA SUPPORT AND REVISION SESSIONS ARE PROVIDED.

Ofsted

The Sports Department offers two courses: BTEC Level 3 Extended Diploma in Sport (equivalent to three A levels) and BTEC Level 3 Extended Certificate (equivalent to one A level). These qualifications equip students with the knowledge and skills to continue to study a vast range of courses at university or pursue a career in the Sports industry.

Students on the course will study a wide range of both theoretical and practical units. During the two years of study, students are assessed via many different methods, including written assignments, practical assessments, verbal interviews, experiments, presentations and coaching sessions.

Within the first year, students enjoy studying units such as Anatomy and Physiology, Sports Coaching and Practical Individual Sports. During Anatomy and Physiology, students explore the human body, studying the different body systems and the physiological effects of exercise on these systems. As part of Sports Coaching students develop their knowledge and understanding of what it takes to become a successful coach. Students enjoy the practical aspects of this unit. They will develop their own coaching session in their chosen sports before delivering it to a group of students. As part of Practical Individual Sports, students get the opportunity to participate in a selection of individual sports as performers and officials, looking at the skills, techniques and tactics within these sports.

The majority of students progress onto Higher Education to study a wide

variety of Sports related degrees. Past students have completed degrees in Sports Coaching, Sports Nutrition, Sports Rehabilitation, Sports Therapy, Primary/ Secondary School Teaching, Sports Psychology and Sports Management. Students also progress into employment after completing the qualification in roles such as sports coaching, personal training and leisure roles.

SUPPORT IN YOUR STUDIES

As well as excellent teaching and outstanding facilities, the Science and Maths Faculty at Loreto aims to offer its students an unrivalled service in terms of careers advice, guidance and support. These are just some of the events which take place throughout the College year which help ensure that Loreto students are able to access the most highly regarded Science courses at the most prestigious universities.

MEDICS, DENTISTS, VETS

Loreto's potential Medics, Dentists and Vets programme includes a wide variety of activities to inspire students and give them the best possible chance of making a successful application to these highly competitive degrees.

- Talks from Admissions tutors, researchers and undergraduates.
- One-on-one support from experienced staff on writing their personal statements and preparing their UCAS applications.
- Preparation for the BMAT and UKCAT tests that are required by many medical and dental schools.
- Support in securing high quality work placements.
- Mock interviews which mirror the types of activities they will be asked to complete during the real interview processes.

PHARMACY

Pharmacy degrees are in high demand and with average offers of AAB they are difficult courses on which to gain places. At Loreto we have specialist members of staff who have many years' experience in the pharmaceutical industry who provide students with invaluable support in applying to these competitive degrees.

HIGH ACHIEVERS

Potential high achieving Scientists have attended masterclasses in Maths, Biology, Chemistry and Physics. The sessions are delivered as part of the Cambridge University HE+ programme of which Loreto is a North West Hub. Additional Subject Support Programme lessons are also provided for students aiming for A*.

SCIENCE AND ENGINEERING CAREERS

Loreto provides a great deal of support for students aspiring to a career in Science or Engineering. A huge range of events take place throughout the year, including:-

- Lecture programme on cutting edge Science and Engineering topics
- Tailored careers fairs and events
- Work placements for students in laboratories around the North West.

SUPPORT SESSIONS

All subjects offer a range of additional support for students. This can include additional supplementary lessons, teacher led drop ins and online resources.

AS A RESULT OF THEIR HIGH ACHIEVEMENT, STUDENTS ARE ABLE TO APPLY SUCCESSFULLY FOR COURSES WHICH ARE VERY SELECTIVE, INCLUDING MEDICINE, DENTISTRY AND PHYSIOTHERAPY, AT HIGH PROFILE UNIVERSITIES.

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CONTACT INFORMATION

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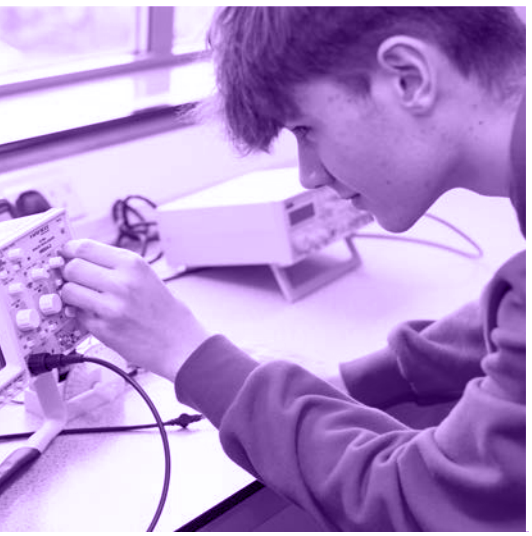
Our history, your future.





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Manchester Catholic Partnership

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TeachManchester