Personal details

Personal details

First / given name	Marta Júlia
Second given name	
Third given name	
Surname/family name	Martínez Marín
Date of birth	08 February 2000
Preferred first/given name	Júlia
Previous surname	
Country of birth	Spain
Legal nationality	Spanish
Dual nationality	
Country of residence	Spain
Have you previously studied with us at the University of Bristol?	No

Contact details

Home address

Please provide your permanent residential address. If you have another address and would prefer for us to contact you at that address instead you have the opportunity to add a correspondence address in the next section.

Country	Spain
Postcode	46007
Address Line 1	C/Albacete, 40, Pta 23
Address Line 2	
City	Valencia
County	
Telephone	

If you would like us to send any postal correspondence to an address which is not your home address please enter an alternative address here. If you want us to send correspondence to your home address then please select No.

Do you want to add a correspondence address?	No
Country	Spain
Postcode	46007
Address Line 1	C/Albacete, 40, Pta 23
Address Line 2	
City	Valencia
County	
Telephone	

Agent

Agent details

Agency Name	
Email address	

Other information

Additional Documents

Please upload required documents as outlined in your admissions statement

Mode of study

How would like to study this programme?	Full Time

Qualifications

Qualifications

Institution	Qualification	Type	Subject	Actual/predicted	Grade	Start date	End date
Rheinische Friedrich Wilhelms Universitat Bonn	Master's Degree (PG)	Academic Qualification	Mathematics	Predicted	1.5-1.9	10/Oct/2022	31/Aug/2024
University of Warwick	Undergraduate Diploma	Academic Qualification	Mathematics	Actual	First Class wit	23/Sep/2019	02/Jul/2022

If these qualifications have altered since your last application please note the changes in the free text box here.

English Language

Is English your first language? No
What is your first language? Spanish
Did you study at school/university where you were taught in English? Yes
For how many years? 5
Have you sat a relevant English language test? No

TOEFL (internet-based)

Registration number
Date of TOEFL test
TOEFL reading score
TOEFL listening score
TOEFL speaking score
TOEFL writing score
TOEFL total score

IELTS (International English Language Testing System)

Test report form (TRF) number
UKVI number (if applicable)
Date of IELTS test
IELTS listening score
IELTS reading score
IELTS writing score
IELTS speaking score
IELTS total score

Pearson Test of English

Score report code
Date of Pearson test
Pearson listening score
Pearson reading score
Pearson speaking score
Pearson writing score
Pearson overall score

Other English Language test

Name of course
Registration number
Date of test
Listening score
Writing score
Reading score
Total score

Experience

Current Employer

Employer name and address
Job title and main duties
Full time/Part time
Date of Appointment
End date (if applicable)

Previous employment 1

Employer name and address
Job title and main duties
Full time/Part time
Date of Appointment
End date (if applicable)

Previous employment 2

Employer name and address
Job title and main duties
Full time/Part time
Date of Appointment
End date (if applicable)

Previous employment 3

Employer name and address
Job title and main duties
Full time/Part time
Date of Appointment
End date (if applicable)

Other Experience

Do you have any other relevant work experience to support your application?
Please provide details

Personal statement

Personal details

Do you have a personal statement to upload?	No
Please type your personal statement in the box	For my programme the personal statement is optional. I have included everything I wanted to say in the research statement.

Research proposal

Research proposal

Proposed supervisor 1	Dr. Céline Maistret
Proposed supervisor 1	Prof. Tim Dokchitser
Proposed project title (max 150 chars)	

Passport and visa

Visa required

Do you require a visa to study in the UK?	No

Please fill out your passport details below. If you are unable to provide these at the current time you will have another opportunity to upload your passport after you submit the form. If you do not provide us with this information we will be unable to issue you with your confirmation of acceptance number and you will be unable to obtain a visa.

Passport details

Passport number	

Further details

Have you previously studied in the UK?	
What was the highest level of study in the UK?	
Please confirm the total length of your UK study in years	

Referees

Referee 1

Do you have a reference to upload?	No
Type of reference	Academic
Referee title	Dr
Forename	Giacomo
Surname	Mezzedimi
Position	Postdoctoral Researcher
Institution/Company	Universität Bonn
Email address	mezzedim@math.uni-bonn.de
Country	Germany

Referee 2

Do you have a second reference to upload?	No
Type of reference	Academic
Referee title	Dr
Forename	Ángel
Surname	González-Prieto
Position	Assistant Professor
Institution/Company	Universidad Complutense de Madrid
Email address	angelgonzalezprieto@ucm.es
Country	Spain

Funding

Funding 1

What is your likely source of funding?	University of Bristol scholarship
Please give the name of your scholarship or Studentship	
Please specify	
Percentage from this source	100
Is this funding already secured?	No

Funding 2

What is your likely source of funding?	
Please give the name of your scholarship or Studentship	
Please specify	
Percentage from this source	
Is this funding already secured?	

Funding 3

What is your likely source of funding?	
Please give the name of your scholarship or Studentship	
Please specify	
Percentage from this source	
Is this funding already secured?	

Other funding

I would like to be considered for other funding opportunities	Yes

Submission

Documents

Document type	File name
Transcript	Transcript_Bonn.pdf
Curriculum vitae	CV (1).pdf
Degree certificate	diploma_warwick.pdf
Transcript	Transcript_Warwick.pdf
Research proposal	Research_Statement.pdf

By ticking the checkbox below and submitting your completed online application form, you acknowledge the University of Bristol will use the information provided from time to time, along with any further information about you the University may hold, for the purposes set out in the University's full Data Protection Statement. Applicants applying to the collaborative programmes of doctoral training should also read the Data Protection Statement for collaborative programmes of doctoral training.

The information that you provided on your application form will be used for the following purposes:

- To enable your application for entry to be considered and allow our Admissions Advisors, where applicable, to assist you through the application process;
- To enable the University to compile statistics, or to assist other organisations to do so. No statistical information will be published that would identify you personally;
- To enable the University to initiate your student record should you be offered a place at the University.

All applicants should note that the University reserves the right to make without notice changes in regulations, courses, fees etc at any time before or after a candidate's admission. Admission to the University is subject to the requirement that the candidate will comply with the University's registration procedure and will duly observe the Charter, Statutes, Ordinances and Regulations from time to time in force.

By ticking the checkbox below and submitting your completed online application form, you are confirming that the information given in this form is true, complete and accurate and that no information requested or other material information has been omitted. You are also confirming that you have read the Data Protection Statement and you confirm the statement below.

I can confirm that the information I have provided is true, complete and accurate. I accept that the information given in my application will be stored and processed by the University of Bristol, in accordance with the *UK General Data Protection Regulation and Data Protection Act 2018*, in order to:

- Consider my application and operate an effective and impartial admissions process;
- Monitor the University’s applicant and student profile;
- Comply with all laws and regulations;
- Ensure the wellbeing and security of all students and staff;
- If my application is successful to form the basis of the statement made within my application.

If the University of Bristol discovers that I have made a false statement or omitted signification information from my application, for example examination results, I understand that it may have to withdraw or amend its offer or terminate my registration, according to circumstances.

EDUCATION

MSc Mathematics, Universität Bonn 2022 – Expected: 2024
Master's Thesis topic: Rational points on K3 surfaces.

BSc Mathematics, University of Warwick 2019 – 2022
Grade: First Class Honours (83%)
Second Year Essay: "Completions of the field rational numbers: real and p-adic numbers"

International Baccalaureate, IES Pere Boïl 2016 – 2018
Grade: 43/45
Higher Level: Maths (7), English B (7), Physics (6)
Standard Level: Chemistry (7), Geography (7), Spanish A: Literature (6)
Extended Essay in Mathematics (A): "Geometric analysis of St. Peter's Square in the Vatican"

Secondary School, IES Lluís Vives 2012 – 2016
Grade: 9.91/10

Excellent Academic Performance Award given by Generalitat Valenciana 2016

WORK, RESEARCH AND VOLUNTEERING EXPERIENCE

Library Assistant at the Faculty of Mathematics, Universität Bonn Oct 2023 – present

Participant at the Preliminary Arizona Winter School, University of Arizona Oct – Nov 2023

- I attended a course by Dr Lassina Dembélé (King's College London) on Abelian varieties over finite fields.
- I also took part in weekly problem sessions supervised by Dr Mingjia Zhang (Princeton University).

Volunteer at GROW: *Graduate Research Opportunities for Women*, Universität Bonn Mar 2023

- Participated as a volunteer at the GROW Conference in Bonn, aimed at female undergraduate students and promoting the pursuit of a graduate degree in Mathematics.

Introduction to research Grant Programme Severo Ochoa, Instituto de Ciencias Matemáticas Jul – Sep 2022

- Under the supervision of Dr Ángel González-Prieto (Universidad Complutense de Madrid).
- I learned some basic notions appearing in algebraic and complex geometry and focused on arithmetic techniques to study invariants of character varieties arising from knot theory.

Participant at the JAE School of Mathematics, Instituto de Ciencias Matemáticas Jul 2022

- I took part in the JAE Summer School at the ICMAT in Madrid, attending courses on classical algebraic geometry, elliptic curves, fibre bundles, and infinite groups.

Volunteer at Warwick STAR: *Student Action for Refugees* 2021 – 2022

- I participated in Conversation Club, helping to teach English to refugees living in the local area.

Assistant at ICIAM: *International Council for Industrial and Applied Mathematics* Jul 2019

- Worked as a volunteer at the 9th ICIAM, organised by the Universitat de València.

SKILLS

Spoken languages: Spanish (native), Catalan (native), English (fluent), German (advanced).

Programming: C++, Java.

It is hereby certified that

Marta Júlia Martínez Marín

was awarded the degree of

Bachelor of Science (with Honours) in Mathematics

First Class

of this University by the Senate on
Tuesday 5th July 2022

Vice-Chancellor and President

Registrar

WARWICK
THE UNIVERSITY OF WARWICK

I am currently a Master's student at the University of Bonn and I previously did my Bachelor's at the University of Warwick. I am interested in arithmetic geometry and algebraic number theory and my goal is to pursue a doctorate and a career in academia.

One of the highlights of my undergraduate at Warwick was the second-year essay. This was a small research project which I decided to write on the p-adic numbers, where I also studied completions of the rational numbers more generally. At the time, the p-adic numbers seemed fascinating to me because of their abstract definition as a completion of the rationals, an analogous construction to that of the reals, yet having such a different topology. Ostrowski's Theorem pointed out their importance, and it made me excited to learn more about them in the future. From this project, I also really enjoyed studying maths independently and presenting my topic, since it was exciting to introduce other students to a new topic and show them my own view on it.

Having had such a good experience with the essay made me want to know more about research in mathematics, and I had the opportunity to do so in the summer of 2022 at the Institute of Mathematical Sciences in Madrid (ICMAT). Under the supervision of Dr Ángel González-Prieto, I learned about character varieties arising from knot theory and focused on arithmetic techniques to study their invariants. A lesson I learned then was that, when reading a paper, I shouldn't try to understand everything perfectly as I read, unlike I did with my lecture courses. It was often more efficient to skip some parts, continue reading, and then discuss them in the next meeting.

For my Master's I decided to move to Bonn. Apart from the high level of the Master's, a two-year programme was appealing to me as it gave me more time to decide on the area of my Master's Thesis. In my second semester, I took Dr Giacomo Mezzedimi's course on rational points which had Silverman's *The Arithmetic of Elliptic Curves* and Poonen's *Rational Points on Varieties* as the main references. I really enjoyed this course as it demonstrated the power of algebraic geometry and class field theory—both courses I had taken in the previous semester—to construct powerful machinery and obtain results such as the failure of the local–global principle for cubic curves (using the Tate–Shafarevich group).

Wanting to learn more about rational points, I am doing my Master's Thesis on rational points on K3 surfaces supervised by Dr Giacomo Mezzedimi. Currently, I am reading a paper on the case where the K3 surface admits an elliptic fibration, which is one of the two situations in which potential density of rational points is known (the other one being when the automorphism group of the surface is infinite); it is very interesting because one can transfer much of the theory of elliptic curves and their rational points to elliptic fibrations. The aim of the project is to study the set of rational points on other types of K3 surfaces, with finite automorphism group and no elliptic fibration. I am really enjoying working at my own pace and asking many questions to my supervisor, and it is very exciting to be learning research-level mathematics. Like at the ICMAT, I am approaching this differently to lecture courses, for instance by first reading through the main theorem, since its proof follows immediately from previous propositions, before working my way backwards from there.

In the rational points course we were also introduced to abelian varieties (for which we proved weak Mordell–Weil using torsors), and I continued learning them about in Dr Lassina

Dembélé's course in the Preliminary Arizona Winter School in October 2023. This was very interesting and quite advanced, so I really appreciated meeting students from other universities with similar interests to me and with whom I could discuss the content and the exercise sheets. Our different backgrounds helped to give each other new perspectives and ideas.

As part of a seminar on cubic hypersurfaces, I recently gave a 90-minute talk on automorphisms and deformations of smooth projective varieties with some specific results about hypersurfaces, following the book *The Geometry of Cubic Hypersurfaces* by Daniel Huybrechts. The preparation for the talk was challenging and demanding, as I had never before given a graduate-level talk and the main reference excluded many details, probably clear to experts. However, through discussions with the lecturers and hard work, I started to understand the underlying arguments and became very excited about the talk, and also about the prospect of sharing what I had learned with other students. This made me realise that the process of learning an advanced topic is often non-linear; many days it felt like I was making no progress. It also reminded me that asking questions and learning about how other people think about a specific idea can be very enriching.

I am currently preparing my next talk for a seminar on class field theory and quadratic forms, in which I will introduce ring class fields and use them to characterise the prime numbers of the form $p = x^2 + ny^2$ for any integer $n > 0$. Having the opportunity to participate in seminars during my Master's has made me gain confidence in my ability to present and explain mathematics. I look forward to taking part in more seminars in the future and also to eventually teaching at university.

To summarise, I am interested in doing research in topics related to elliptic curves and rational points, and I am also eager to continue exploring my interests within number theory and arithmetic geometry. I am particularly drawn to Bristol due to the great reputation, size and research interests of its number theory group, and I would be very excited to have the opportunity to work with Prof Tim Dokchitser or Dr Céline Maistret.

UNIVERSITÄT BONN

Rheinische
Friedrich-Wilhelms-
Universität Bonn

Mathematisch-Naturwissenschaftliche Fakultät

Transcript of Records

Name:	Ms. Marta Julia Martinez Marin
Date and place of birth:	08 February 2000 in Valencia (Spain)
Student ID number:	50077188
Intended degree:	Master of Science
Study programme:	Mathematics
Beginning of studies:	Winter 2022/23
Semester:	3
Credit points:	58
Preliminary overall grade:	1.9

Bachelor-Master-Büro Mathematik
Universität Bonn
Endenicher Allee 60
D-53115 Bonn
Tel.: +49 228 73-3180

Academic Record:

Subject No.	Course Title	Examiner	Term	Exam Date	Grade	Status	CP
8000	Master's Thesis "Rational Points on K3 Surfaces"	Dr. G. Mezzedimi	WT 2024/25	31 Oct 2024		R	0
611500101	Master's Thesis Seminar	Dr. G. Mezzedimi	WT 2024/25			R	0

Elective Modules

Subject No.	Course Title	Examiner	Term	Exam Date	Grade	Status	CP
611500801	Foundations in Algebra: Algebra II	Dr. E. Assing	WT 2022/23	22 Mar 2023	2.7	P	9
611500520	Foundations in Geometry and Topology: Analysis and Geometry on Manifolds	Prof. Dr. M. Lesch	WT 2022/23	06 Feb 2023	2.7	P	9
611500201	Algebraic Geometry I	Dr. G. Martin	WT 2022/23	29 Mar 2023	3.3	P	9

Bonn, 06 November 2023

Elective Modules

Subject No.	Course Title	Examiner	Term	Exam Date	Grade	Status	CP
611500218	Selected Topics in Algebra - An Introduction to Derived Categories	Priv.-Doz. Dr. T. Heidersdorf	ST 2023	20 Jul 2023	1.0	P	5
611500220	Selected Topics in Algebraic Geometry	Dr. G. Mezzedimi	ST 2023	25 Sep 2023	1.0	P	5
611500318	Selected Topics in Analysis	Dr. K. van den Dungen	ST 2023	17 Jul 2023	1.3	P	5
611500512	Selected Topics in Differential Geometry - Metric Inequalities in Geometry, Topology and Analysis	Dr. J. Hoisington	ST 2023	19 Jul 2023	1.0	P	5
611500513	Selected Topics in Topology - Slice Knots and Knot Concordance	Dr. A. Ray	ST 2023	31 Jul 2023	1.0	P	5
611501002	Graduate Seminar on Algebraic Geometry - Cubic Hypersurfaces	Dr. G. Martin	WT 2023/24	31 Oct 2023	1.0	P	6
611501026	Graduate Seminar on Advanced Number Theory - An Introduction to Quadratic Forms and Class Field Theory	Dr. G. Dill	WT 2023/24			R	0

Description of the grading scheme

The grading scheme comprises five levels (intermediate grades may be given):

(1) "Sehr gut" = Very Good (grades 1.0 or 1.3)
(2) "Gut" = Good (grades 1.7 or 2.0 or 2.3)
(3) "Befriedigend" = Satisfactory (grades 2.7 or 3.0 or 3.3)
(4) "Ausreichend"= Sufficient (grades 3.7 or 4.0)
(5) "Nicht ausreichend" = Non-Sufficient/Fail (grade 5.0)
The minimum passing grade is (4.0) "Ausreichend".

Description of abbreviations

CP	Credit Points	WT/ST	Winter/Summer Term	R	Registered	P	Pass	F	Fail	FF	Final Fail

There are two examination sessions for each module examination.

WARWICK
THE UNIVERSITY OF WARWICK

HIGHER EDUCATION ACHIEVEMENT REPORT

Marta Júlia Martínez Marín
Bachelor of Science (with Honours) Mathematics
First Class Honours
05/07/2022

This Higher Education Achievement Report incorporates the model developed by the European Commission, Council of Europe and UNESCO/CEPES for the Diploma Supplement.

The purpose of the Supplement is to provide sufficient recognition of qualifications (diplomas, degrees, certificates etc). It is designed to provide a description of the nature, level, context and status of the studies that were pursued and successfully completed by the individual named on the original qualifications to which this Supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition.

Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why. The University of Warwick only produces HEARs in a digital format. Only HEARs accessed or verified via www.gradintel.com can be considered valid.

Section 1: Information identifying the holder of the qualification

1.1	**Family name(s):**	Martínez Marín
1.2	**Given name(s):**	Marta Júlia
1.3	**Date of birth (day/month/year):**	08/02/2000
1.4	**Student identification number:**	1909054
	HESA identification number:	1911639090548

HUSID (HESA Unique Student Identifier) is the unique national identifying number for students registered at a UK university. It is defined by HESA, the UK's Higher Education Statistics Agency.

Section 2: Information identifying the qualification

2.1	**Qualification achieved:**	Bachelor of Science (with Honours)

The power to award degrees is regulated by law in the UK.

2.2	**Main field(s) of study:**	Mathematics
2.3	**Name and status of awarding institution:**	The University of Warwick

The University of Warwick is self-governing and legally independent of government but subject to its policies and laws. The University is a degree awarding institution, operating under a Royal Charter which was established in 1965.

2.4	**Name and status of institution (if different from 2.3) administering studies:**	As awarding institution
2.5	**Language(s) of instruction/examination:**	English

Section 3: Information on the level of the qualification

3.1 HESA level of qualification: UK Bachelors Degree with Honours Level 6 (European HE 1st cycle qualification)

See section 8 for reference to nationally devised "level indicators" which relate to the qualification as contained within the Framework for Higher Education Qualifications in England, Wales and Northern Ireland, (QAA, 2008). Also available at http://www.qaa.ac.uk/.

3.2 Official length of programme: 3 years full-time

3.3 Programme entry requirements or access:

The University aims to admit students of the highest calibre, who have the academic potential and the motivation to succeed on its challenging courses. The University encourages applications from applicants from all backgrounds and it consistently evaluates the potential of each applicant individually and on their own merits.

Section 4: Information on the contents and results gained

4.1 Mode of study:

Year	Mode of Study
19/20	Full-time according to Funding Council definitions
20/21	Full-time according to Funding Council definitions
21/22	Full-time according to Funding Council definitions

4.2 Programme requirements:

A Mathematics degree enhances a student's ability to think clearly, learn new ideas quickly, manipulate precise and intricate concepts, follow complex reasoning, construct logical arguments and expose illogical ones, invaluable skills which prepare our students for the rapidly changing modern world of employment.

Our undergraduate Mathematics programmes are distinguished by their academic excellence, flexibility and choice. All courses contain the same basic core of Mathematics in the first year, allowing easy transfer between degree courses. Our curriculum is broad, modern, and rigorous; and our degrees internationally recognised. Warwick Mathematics Institute is consistently ranked as one of the UK’s top mathematics departments, with internationally renowned research that drives the quality of our teaching and the mathematical experience of students.

In undertaking study in Mathematics at Warwick, students develop an advanced knowledge of a foundational core of pure mathematics and an understanding of a range of applied mathematics and techniques. This, teamed with the ability to think independently, deploy research skills and the capacity to integrate separate arguments coherently, prepares students for professions requiring strong reasoning and analytic skills.

4.3 Programme details, and the individual grades/marks/credits obtained:

Programme start date: 23/09/2019

Programme end date: 02/07/2022

The University of Warwick introduced component assessment marks for the HEAR in the academic year 2021/2022. Prior to 2021/2022 component assessment marks are not available.

Mathematics 19/20

Year	Module Code	Title	Mark %	Credits	ECTS Credits
19/20	MA106-12	Linear Algebra	0**	12.0	6.00
19/20	MA117-12	Programming for Scientists	95	12.0	6.00
19/20	MA124-6	Mathematics by Computer	94	6.0	3.00
19/20	MA125-6	Introduction to Geometry	0**	0.0	0.00
19/20	MA131-24	Analysis	92	24.0	12.00
19/20	MA132-12	Foundations	82	12.0	6.00
19/20	MA133-12	Differential Equations	0**	12.0	6.00
19/20	MA134-12	Geometry and Motion	0**	12.0	6.00
19/20	MA136-6	Introduction to Abstract Algebra	0**	6.0	3.00
19/20	PH136-15	Logic 1: Introduction to Symbolic Logic (for non-Philosophy Students)	0**	0.0	0.00
19/20	ST111-6	Probability (Part A)	0**	6.0	3.00
19/20	ST112-6	Probability (Part B)	0**	6.0	3.00
		TOTAL YEAR 19/20 CREDITS		108.0	54.00

Mathematics 20/21

Year	Module Code	Title	Mark %	Credits	ECTS Credits
20/21	LL237-24	German 3	71	24.0	12.00
20/21	MA213-6	Second Year Essay	84	6.0	3.00
20/21	MA243-12	Geometry	81	12.0	6.00
20/21	MA244-12	Analysis III	79	12.0	6.00
20/21	MA249-12	Algebra II: Groups and Rings	78	12.0	6.00
20/21	MA251-12	Algebra I: Advanced Linear Algebra	79	12.0	6.00
20/21	MA257-12	Introduction to Number Theory	90	12.0	6.00
20/21	MA259-12	Multivariable Calculus	84	12.0	6.00
20/21	MA260-12	Norms, Metrics and Topologies	73	12.0	6.00
20/21	ST220-12	Introduction to Mathematical Statistics	75	12.0	6.00
20/21	ST222-12	Games, Decisions and Behaviour	77	12.0	6.00
		TOTAL YEAR 20/21 CREDITS		138.0	69.00

Mathematics 21/22

Year	Module Code	Title			Mark %	Credits	ECTS Credits
21/22	LL211-30	German 4			73	30.0	15.00
		Assessment	**Weight**	**Mark**			
		In-Class Test - Short Answer	10%	62.00			
		In-Class Test - Short Answer	50%	71.00			
		In-Class Test - Short Answer	40%	77.00			
21/22	MA3A6-15	Algebraic Number Theory			92	15.0	7.50
		Assessment	**Weight**	**Mark**			
		Worksheet	15%	99.00			
		Examination - April	85%	91.00			
21/22	MA3B8-15	Complex Analysis			79	15.0	7.50
		Assessment	**Weight**	**Mark**			
		Examination - April	100%	79.00			
21/22	MA3D5-15	Galois Theory			98	15.0	7.50
		Assessment	**Weight**	**Mark**			
		Worksheet	15%	96.00			
		Examination - Summer (Weeks 4 to 9)	85%	98.00			
21/22	MA3F1-15	Introduction to Topology			93	15.0	7.50
		Assessment	**Weight**	**Mark**			
		Examination - April	85%	92.00			
		Worksheet	15%	97.00			
21/22	MA3G6-15	Commutative Algebra			86	15.0	7.50
		Assessment	**Weight**	**Mark**			
		Examination - April	85%	84.00			
		Worksheet	15%	97.00			
21/22	MA3K4-15	Introduction to Group Theory			87	15.0	7.50
		Assessment	**Weight**	**Mark**			
		Examination - April	100%	87.00			
		TOTAL YEAR 21/22 CREDITS				120.0	60.00
		TOTAL CREDITS AWARDED				366.0	183.00

** In certain situations, an assessment for a module could not take place and this has resulted in a “zero” being displayed on the HEAR statement. The zero and absence of a mark simply means there was no opportunity to assess and should not be read as lack of or unsuccessful engagement with those elements of the module.

4.4 Grading scheme and, if available, grade distribution guidance:

The following classes of degree are awarded at undergraduate level, see http://go.warwick.ac.uk/assessmentconventions for more information:

Classification	Normal Average Grade
First Class Honours	At least 70%
Second Class Honours (1st Division)	At least 60%
Second Class Honours (2nd Division)	At least 50%
Third Class Honours	At least 40%
Pass	At least 35%

4.5 Overall classification of the qualification (in original language): First Class Honours

Section 5: Information on the function of the qualification

5.1 Access to further study:

This qualification may allow access to further study (at FHEQ level 7 or for equivalent EHEA second cycle qualifications) subject to individual requirements of the institution concerned.

5.2 Professional status (if applicable):

Not applicable

Section 6: Additional information

The University of Warwick has agreed a list of activities undertaken outside the academic curriculum that will be recorded in the HEAR. All activities recorded in this section have been verified by the University. This section also includes any departmental or University prizes won. Other activities and achievements not included in the HEAR, may be recorded in a CV or e-portfolio. Visit http://www.warwick.ac.uk/hear for a full list of activities.

Note: The HEAR was introduced at the University of Warwick at the beginning of the 2011/12 academic year, and therefore includes only information about activities undertaken and prizes awarded in the 2011/12 academic year or later.

6.1 Additional information:

2021/22

Warwick Volunteer Certificate
Awarded for community volunteering - 17 hours

6.2 Further information sources:

The University of Warwick is one of the UK's leading universities, with an acknowledged reputation for excellence in research and teaching, for innovation, and for links with business and industry. Its mission is:

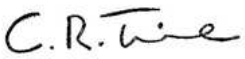
- To become a world leader in research and teaching
- Through research of international excellence, to increase significantly the range of human knowledge and understanding
- To equip graduates to make an important contribution to the economy and to society
- To serve our local region - academically, culturally and economically
- To continue to make a Warwick education available to all those able to benefit from it, regardless of economic or social circumstances.

Find out more at http://www.warwick.ac.uk/about.

Section 7: Certification of the HEAR

7.1 Date 05/07/2022

7.2 Signatory: Dr Chris Twine



7.3 Official capacity: Academic Registrar

7.4 Official stamp or seal

WARWICK
THE UNIVERSITY OF WARWICK
STUDENT ADMINISTRATIVE SERVICES

Section 8: Information on the national higher education system

Description of Higher Education in England, Wales and Northern Ireland

In England, Wales and Northern Ireland[1], higher education institutions are independent, self-governing bodies active in teaching, research and scholarship. They are established by Royal Charter or legislation and most are part-funded by government. Higher education (HE) is provided by many different types of institution. In addition to universities and university colleges, whose charters and statutes are made through the Privy Council which advises the Queen on the granting of Royal Charters and incorporation of universities, there are a number of publicly-designated and autonomous institutions within the higher education sector. Publicly funded higher education provision is available in some colleges of further education by the authority of another duly empowered institution. Teaching to prepare students for the award of higher education qualifications can be conducted in any higher education institution and in some further education colleges.

Degree awarding powers and the title 'university'

All universities and many higher education colleges have the legal power to develop their own courses and award their own degrees, as well as determine the conditions on which they are awarded. Some HE colleges and specialist institutions without these powers offer programmes, with varying extents of devolved authority, leading to the degrees of an institution which does have them. All universities in existence before 2005 have the power to award degrees on the basis of completion of taught courses and the power to award research degrees. From 2005, institutions in England and Wales that award only taught degrees ('first' and 'second cycle') and which meet certain numerical criteria, may also be permitted to use the title 'university'. Higher education institutions that award only taught degrees but which do not meet the numerical criteria may apply to use the title 'university college', although not all choose to do so. All of these institutions are subject to the same regulatory quality assurance and funding requirements as universities; and all institutions decide for themselves which students to admit and which staff to appoint. Degrees and other higher education qualifications are legally owned by the awarding institution, not by the state. The names of institutions with their own degree awarding powers ("Recognised Bodies") are available for download at: http://www.bis.gov.uk/policies/higher-education/recognised-uk-degrees/recognised-bodies

Higher education institutions, further education colleges and other organisations able to offer courses leading to a degree of a Recognised Body are listed by the English, Welsh and Northern Irish authorities, and are known as "Listed Bodies". View the list at: http://www.bis.gov.uk/policies/higher-education/recognised-uk-degrees/listed-bodies

Qualifications

The types of qualifications awarded by higher education institutions at sub-degree and undergraduate (first cycle) and postgraduate level (second and third cycles) are described in the Framework for Higher Education Qualifications in England, Wales and Northern Ireland (FHEQ). This also includes qualification descriptors that were developed with the HE sector by the Quality Assurance Agency for Higher Education (QAA - established in 1997 as an independent UK-wide body to monitor the standard of higher education provision - www.qaa.ac.uk). The FHEQ was self-certified as compatible with the Framework for Qualifications of the European Higher Education Area, the qualifications framework adopted as part of the Bologna Process, in February 2009. Foundation degrees, designed to create intermediate awards strongly oriented towards specific employment opportunities, were introduced in 2001. In terms of the European Higher Education Area they are "short cycle" qualifications within the first cycle. The FHEQ is one component of the Credit and Qualifications Framework for Wales (CQFW). The Qualifications and Curriculum Authority (QCA), the Department for Children, Education, Lifelong Learning and Skills, Wales (DCELLS) and the Council for Curriculum Examination and Assessment, Northern Ireland (CCEA) have established the Qualifications and Credit Framework (to replace, in time, the National Qualifications Framework (NQF)). These authorities regulate a number of professional, statutory and other awarding bodies which control VET and general qualifications at all levels. The QCF is also incorporated into the CQFW. There is a close association between the levels of the FHEQ and the NQF (as shown overleaf), and other frameworks of the UK and Ireland (see 'Qualifications can cross Boundaries' https://www.qaa.ac.uk/docs/qaa/quality-code/qualifications-can-cross-boundaries.pdf

Quality Assurance

Academic standards are established and maintained by higher education institutions themselves using an extensive and sophisticated range of shared quality assurance approaches and structures. Standards and quality in institutions are underpinned by the universal use of external examiners, a standard set of indicators and other reports, by the activities of the QAA, and in professional areas by relevant professional, statutory and regulatory bodies. This ensures that institutions meet national expectations described in the FHEQ: subject benchmark statements, the Code of Practice and programme specifications. QAA conducts peer-review based audits and reviews of higher education institutions with the opportunity for subject-based review as the need arises. The accuracy and adequacy of quality-related information published by the higher education institutions is also reviewed. QAA also reviews publicly funded higher education provision in further education colleges.

Credit System

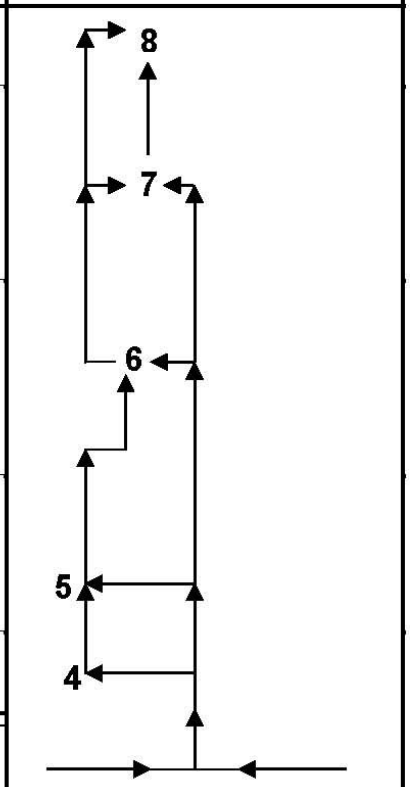
Most higher education institutions in England and Northern Ireland belong to one of several credit consortia and some operate local credit accumulation and transfer systems for students moving between programmes and/or institutions. A framework of national guidelines, the Higher Education Credit Framework for England, was launched in 2008. Credit is also an integral part of the CQFW and the QCF. It may be possible for credit awarded in one framework to be recognised by education providers whose qualifications sit within a different framework. HE credit systems in use in England, Wales and Northern Ireland are compatible with the European Credit Transfer System (ECTS) for accumulation and transfers within the European Higher Education Area, and are used to recognise learning gained by students in institutions elsewhere in Europe.

Admissions

The most common qualification for entry to higher education is the General Certificate of Education at 'Advanced' (A) level. Other appropriate NQF level 3 qualifications and the kite-marked Access to HE Diploma may also provide entry to HE. Level 3 qualifications in the CQFW, including the Welsh Baccalaureate, also provide entry, as do Scottish Highers, Advanced Highers or qualifications at the same levels of the Scottish Credit and Qualifications Framework. Part-time and mature students may enter HE with these qualifications or alternatives with evidenced equivalent prior formal and/or experiential learning. Institutions will admit students whom they believe to have the potential to complete their programmes successfully.

[1] The UK has a system of devolved government, including for higher education, to Scotland, to Wales and to Northern Ireland. This description is approved by the High Level Policy Forum which includes representatives of the Department for Business, Innovation and Skills, the Scottish Government, the Welsh Assembly Government, the Higher Education Funding Councils for England, Scotland and Wales, the Quality Assurance Agency (QAA), Universities UK (UUK), GuildHE and the National Recognition Information Centre for the UK (UK NARIC)

Diagram of higher education qualification levels in England, Wales and Northern Ireland

Framework for Higher Education Qualifications (FHEQ)[5]		FQ-EHEA cycle	Credit		Progression for selection of students (FHEQ levels)	National Qualifications Framework for England, Wales and Northern Ireland[6]	
Typical Qualifications	Level		Typical UK	Typical ECTS credit ranges[3]		Typical Qualifications	Level
Doctoral Degrees (eg PhD, DPhil, EdD)	8	3rd cycle	Typically not credit rated[1]	Typically not credit rated		Vocational Qualifications Level 8	8
Masters Degrees Integrated Masters Degrees Postgraduate Diplomas Postgraduate Certificate of Education Postgraduate Certificates	7	2nd cycle	180	60-120[2]		Fellowships NVQ Level 5 Vocational Qualifications Level 7	7
Bachelors Degrees with Honours Bachelors Degrees Professional Graduate Certificate in Education Graduate Diplomas Graduate Certificates	6	1st cycle	360	180-240		Vocational Qualifications Level 6	6
Foundation Degrees Diplomas of Higher Education Higher National Diplomas	5	Short cycle	240	120		NVQ Level 4 Higher National Diplomas (HND) Higher National Certificates (HNC) Vocational Qualifications Level 5	5
Higher National Certificates Certificates of Higher Education	4		120			Vocational Qualifications Level 4	4
Entry to HE via equivalent experiential or prior learning						National Vocational Qualification (NVQ) Level 3 Vocational Qualifications Level 3 GCE AS and A Level Advanced Diploma Welsh Baccalaureate Advanced[4]	3

Levels 2, 1 and entry

[1]PhD and DPhil qualifications are typically not credit-rated. Newer doctoral degrees, such as the Professional Doctorate, are sometimes credit rated, typically 540 UK credits.
[2]A range of 90-120 ECTS is typical of most awards
[3]1 ECTS credit is typically worth 2 UK credits
[4]The Welsh Baccalaureate Qualification is part of the Credit and Qualifications Framework for Wales (CQFW)

[5]For students with the necessary prerequisites, entry to each FHEQ level is possible from the next lower level in the NQF or Framework for Higher Education Qualifications.
[6]These levels will also apply to the Qualifications and Credit Framework (QCF). The QCF will eventually replace the National Qualifications Framework (NQF)

UNIVERSIDAD COMPLUTENSE MADRID

Universidad Complutense de Madrid

Ángel González Prieto

Department of Algebra, Geometry and Topology
Faculty of Mathematical Sciences
Universidad Complutense de Madrid
Ciudad Universitaria de Moncloa,
Plaza Ciencias 3,
28049 Madrid.
Email: angelgonzalezprieto@ucm.es

January 2, 2024.

Dear Admission Committee,

I am greatly pleased to recommend Ms. Júlia Martínez Marín for her admission to the PhD programme in Mathematics at the University of Bristol.

I met Ms. Martínez last year, when she got selected to be part of the JAE Intro Summer Research Program 2022 held at Instituto de Ciencias Matemáticas (ICMAT) in Madrid. This three-month program is designed to introduce advanced Bachelor's and Master's students to modern research techniques, including an intensive course covering research-level lectures on differential geometry, algebraic geometry, and PDEs. Selected students receive financial support to cover travel expenses to Madrid and accommodation during the program. Given the program's competitiveness, with hundreds of applicants each year, being accepted represents a significant achievement.

As her advisor for the introduction to research project, I worked closely with Ms. Martínez, holding at least two meetings per week during the program and almost daily meetings during the intensive lecture weeks. As topic for this project, we chose arithmetic properties of the moduli spaces of representations, moduli spaces of Higgs bundles, and knot theory.

This topic is directly related to one of my most active research lines. As part of her project, Ms. Martínez delved into several research papers and contributions, including some of my most recent works. Thanks to her background in arithmetic techniques and commutative algebra, she studied in detail Hausel and Rodríguez-Villegas' works on the point count of representations of surface groups into finite groups of Lie type. In this groundbreaking work, the authors managed to provide a close formula for this point count of representations $\rho : \pi_1(\Sigma_g) \to \mathrm{GL}_n(\mathbb{F}_q)$ depending only on q, partitions of n, and the genus g of the surface Σ_g. For this purpose, the authors mixed techniques coming from representation theory of Lie-type groups, Deligne-Lusztig theory, combinatorics through plethystic functions and algebraic geometry.

Despite the inherent difficulty of this work, arising from both the broad spectrum of the techniques used and their depth, Ms. Martínez worked tirelessly on this work by thoroughly dissecting the arguments. During this process, I witnessed that she managed to repeat every single calculation shown in the paper, some of which were highly non-trivial due to the sketchy or incomplete nature of the manuscript's proof. Furthermore, at the end of this training period, Júlia was able to explain some of the most intricate arguments to me, which I had struggled to understand due to their combinatorial nature, far from my expertise.

Throughout this program, Ms. Martínez showed an extraordinary performance. Throughout the project, she was very motivated and learnt all the topics quickly and in depth. In the meetings we held, I had the opportunity of discussing with Ms. Martínez some of the most intriguing parts of the theory, conversations in which she provided insightful comments. Finally, I would also like to highlight that, under my supervision, Ms. Martínez has demonstrated a high level of autonomy and proactivity, looking for new literature and searching for alternative solutions. I definitely consider her learning ability outstanding.

Additionally, after completing this summer program, Ms. Martínez moved to Bonn, where she is currently enrolled in the Master's program in Mathematics. We have stayed in touch and she has provided constant updates of her academic development and the courses she has taken. Based on her studies, it is evident that she has acquired solid bases of modern algebraic geometry, including scheme theory and derived geometry, differential geometry and algebraic topology. Additionally, her training in number theory, including class field theory and rational point counting on varieties is likely very robust, especially because I lack the expertise to fully assess it.

In my opinion, Ms. Martínez is an extraordinarily talented student. I can say with no doubt that she is in the top 5% of the best students I have ever supervised, in terms of motivation, work ethic and mathematical skills. While she has chosen to pursue a career in number theory, I would gladly welcome her as a Ph.D. student if she decides to pursue her doctorate studies in algebraic geometry. I am confident that Júlia has the capability to complete a Ph.D. at the highest level.

I am completely at your disposal in the case I can provide any additional information to support the application of Ms. Martínez in the decision process.

Yours sincerely,

Ángel González Prieto
Assistant Professor
Universidad Complutense de Madrid

Dr. Giacomo Mezzedimi
Mathematisches Institut
Universität Bonn
Endenicher Allee 60
53115 Bonn (Germany)
0049-0228-73-62258
https://sites.google.com/view/giacomomezzedimi
2/1/2024

Dear Admissions Team,

My name is Giacomo Mezzedimi and I am a PostDoc at the University of Bonn.

I met Júlia for the first time in the last summer semester, when she attended my master course "Rational points on Varieties". In this course I presented several advanced topics in Arithmetic Geometry, mainly following Poonen's book. Since the very beginning Júlia has shown a clear interest in the subject: not only was she asking questions during and after the lectures, but she also wanted to discuss the (optional) exercises that I gave in class every week. Her understanding of the presented material, including the most difficult proofs, was excellent, and this was reflected in her perfect oral exam, which I awarded with the best grade 1,0.

During the summer semester Júlia became interested in doing a Master Thesis under my supervision, and for this reason we started meeting regularly. I realized that, thanks to her bachelor studies at the University of Warwick, she already had a solid background in Commutative Algebra and Algebraic Number Theory. Since my research interests lean more towards Geometry, I frequently gave her research papers or chapters of books to read, or exercises to solve, in order to allow her to broaden her knowledge in Algebraic and Arithmetic Geometry. Júlia immediately showed enthusiasm for these topics, as demonstrated by the several courses in Geometry she has attended in the past months. I am convinced that the geometric intuition and perspective that she has recently gained have given her a deeper understanding of concepts in Algebra and Number Theory, and have sparked in her a renewed interest for these subjects.

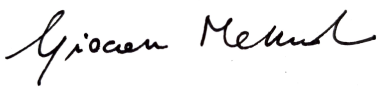
In the context of the master seminar "Cubic hypersurfaces", in November Júlia gave a talk about automorphisms of cubic hypersurfaces. Despite the fact that it was only one of the first times she was presenting such an advanced topic in front of an audience, her talk was outstanding, clearly one of the best of the semester, and for it she received the best grade 1,0. What struck me in particular was the clarity of her exposition, the precision in the details, and her ability to complement the more abstract notions with concrete examples and intuitive explanations.

On November 1st, Júlia started her Master Thesis under my supervision. The topic of the thesis is Rational points on K3 surfaces, and the main goal is to understand when K3 surfaces over number fields admit a Zariski dense set of rational points. The only known case, due to Bogomolov and Tschinkel, concerns K3 surfaces admitting either an elliptic fibration

or an infinite automorphism group. The purpose of the thesis is to focus on K3 surfaces that arise as double cover of the projective plane $\mathbb{P}^2$, and more specifically to find examples (or families) of such K3 surfaces over number fields with an infinite or Zariski dense set of rational points. In this initial phase of the thesis, she is studying the foundational paper of Bogomolov and Tschinkel, focusing on elliptic fibrations, their Mordell-Weil group, their Tate-Shafarevich group, and the structure of the rational points on them. I am impressed by her hard work and her determination to comprehend the topics in depth, not stopping at a superficial understanding.

To summarize, I believe that Júlia has an extremely solid and thorough background in Algebra, Number Theory, and Arithmetic and Algebraic Geometry. Her excellent track record, both at the University of Warwick and here in Bonn, demonstrate a very good ability to understand and elaborate advanced topics in Mathematics, that few other students have. Therefore I firmly believe that Júlia has already acquired the necessary expertise to undertake a PhD program in Arithmetic Geometry and carry out relevant independent research in this area. Her passion and enthusiasm for Mathematics are also witnessed by the fact that she has often volunteered for various outreach programs during her studies. For all these reasons, I strongly recommend Júlia for the PhD program at the University of Bristol.

Best regards,



Giacomo Mezzedimi
Postdoctoral researcher
University of Bonn
0049-0228-73-62258
mezzedim@math.uni-bonn.de

VISA information

I have spoken to the Embassy of Spain in the UK to check the details of my immigration status. I lived in the UK during my undergraduate and moved to Germany for my Master's.

I currently have pre-settled status until the 3rd of June 2025. Due to a recent update of the EU Settlement Scheme, this will automatically be extended by 2 years, so I will have pre-settled status until June 2027. Since having pre-settled status allows one to study in the UK, I won't need a VISA at least until June 2027, and depending on whether there is another extension of the pre-settled status or not, I might need to apply for a VISA then.

I hope this information is useful and, if you have any questions, please don't hesitate to contact me.