

# **BUDAPEST SEMESTERS IN MATHEMATICS**

## **Academic Rules**

**FALL, 2016**

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# ACADEMIC PROGRAM AND REGULATIONS

The semester starts with a trial period of three weeks, when you can sit in as many classes as you wish. Only at the end of this period must you register for the courses you really want to take. The registration deadline is at Noon at Thursday on the 3<sup>rd</sup> week into the semester.

There are two types of courses.

**Regular courses** meet twice a week for up to two each time. These are mostly lecture format.

**Reading courses\*** meet only once a week for up to two hours each time for consultation.

An academic hour is 45 minutes long.

\*Note that in the transcript no difference is made between *reading* and *regular courses*.

Below you will find a list of our standard course offerings.

For an up-to-date list check the local BSM homepage at [www.bsmath.hu](http://www.bsmath.hu).

**IMPORTANT:** *During/after the trial period ends (i.e. by the end of the third week) course offerings may change in response to increased/decreased demand:*

- *high demand courses may be offered in parallel sessions*
- *courses with fewer than 3 students will be canceled*
- *courses with 3-5 student will become reading courses.*

## **STANDARD COURSE OFFERINGS**

The standard BSM curriculum includes introductory and advanced mathematics courses.

The introductory courses are with prerequisites not going beyond calculus or linear algebra. The advanced math courses are somewhat more challenging and may require some experience in the given field.

**The syllabi** of the courses are available on the BSM local web site [www.bsmath.hu](http://www.bsmath.hu).

**IMPORTANT:** *up-to five math courses are included in your tuition and as many of the non-math courses listed below as you wish. You will have to pay extra for any additional math course, see "Payments"*

## Introductory level math courses:

These courses do not require more prerequisites than usual college level introductory calculus and algebra classes, but some may still be very demanding.

CLX	Complex Analysis
AL1	Introduction to Abstract Algebra
CO1	Introduction to Combinatorics
MAN	Introduction to Mathematical Analysis
NU1	Introduction to Number Theory
TOP	Introduction to Topology
MPS	Mathematical Problem Solving
NEG	Non-Euclidean Geometries
PRO	Probability Theory
SET	Set Theory

## Advanced math courses:

AAL	Advanced Algebra
ALT	Algebraic Topology
CMA	Commutative Algebra
CO2	Combinatorics of Finite Sets
COP	Combinatorial Optimization
C&P	Conjecture and Proof
DIG	Differential Geometry
FUN	Functional Analysis
GAL	Galois Theory
GRT	Graph Theory
LOG	Mathematical Logic
MAP	Mathematical Physics
MCR	Introduction to Mathematical Cryptography
NUT1	Introduction to Analytic Number Theory
NUT2	Additive Combinatorics
RFM	Real Functions and Measures
THC	Theory of Computing

For more information visit [http://www.bsmath.hu/CURRENT/syllabi\\_of\\_courses.html](http://www.bsmath.hu/CURRENT/syllabi_of_courses.html)

## Additional BSM math courses:

### 1. A three week "crash course" in Classical Algebra

Because of the diversity of mathematical curriculum in US colleges and Universities, BSM faculty have designed a special three week course in classical algebra that reviews topics crucial to the

study of mathematics that may have been absent from your undergraduate curriculum.

The course is held during the first three weeks of the program in order to make sure everyone has the necessary background in this basic topic, which is a prerequisite for almost all of our courses .

You are urged to attend this classical algebra course for your own benefit (even if you believe you thoroughly know the material covered by it): nobody later should claim at BSM about the material presented here that they are unfamiliar with it or they have never learnt it.

Please note, that though the course is essentially required for all of your BSM studies, it is especially important for those who wish to take Introductory Number Theory, Galois Theory, Introductory (or Advanced, of course) Abstract Algebra, Commutative Algebra and Complex Functions. Nobody should claim in those courses the lack of knowledge of some topic covered by the Classical Algebra course.

**NOTE:** *this course is not for credit and in fact, you need not even register for it, since it will be over by the registration deadline.*

Nevertheless, those who successfully complete the course and would like to have it mentioned in their transcript as a NC (non-credit) course should register for it using the BSM online registration software at <http://www.renyi.hu/~bsmphp/>

## **2. Reading courses**

Based on pre-registration data that is collected from students before the semester start, some math courses may start as reading courses and are changed to a regular course only if their audience exceeds 6 (and other circumstances allow).

**IMPORTANT:** *Based on registration/attendance data other courses may also start or eventually become reading courses as well.*

## **3. Undergraduate Research**

RES          Research Opportunities

This is a special research course that gives *advanced* students the opportunity to try their hands on actual research problems in a small group setting (2-3 people). You can find all details, including the problems offered to work on at <http://www.bsmath.hu/CURRENT/TDKsyllabus.html>

- **Who can participate?** Most professors gave a list of problems and/or some reading and related tasks for those who are interested in working on their problem. If you are interested in participating, do as much of these as you can by the Welcome Party and discuss your progress with the professor. First enrollment will be based on work on these problem sets/reading assignments. Final enrollment will be decided by the third week (as explained below).
- **Which topics will actually be offered ("stay alive")?** Of the initially offered research topics below those will be offered eventually, for which a group of students (at least around 3)

would like to sign up and are accepted by the Professor based on discussions at the Welcome party and/or the first week.

- **Course work: weekly meetings.**

Class will meet twice weekly, for two hours each. One class time is devoted to group work, when you discuss the problem and possible solutions with your student group (without the professor). The other class time is spent with your professor who will monitor your group's progress.

- **Course work: presentations.**

Week 3 - Milestone 1: The first three weeks of the course are spent discussing, gathering and studying necessary background information for your problem. At the end of the 3rd week, you (and your group) will have to present the problem you are working on in 20 minutes at a "mini workshop" organized for all BSM-TDK participants, their professors and everyone else interested. At this point professors evaluate progress and final enrollment decision is made. Ideally, the size of research groups is low, at most three.

Week 7 - Milestone 2: around week 7 students receive "midterm evaluation grades" in each course they are taking informing them of their course grade up to that point. A student with an insufficient overall performance (e.g. C's in all other classes) will have to finish doing research at that time and will receive half credit and an "Audit" on their BSM transcript.

Week 13 - Milestone 3: Work continues throughout the semester. At the 13th week each group should present their results at a "Preliminary report session" organized for all BSM-TDK participants, their professors and everyone else interested.

Write up of results is continuous, sometimes stretches after the semester is over.

#### **4. Competition Preparation Course**

This is a complimentary, out of curriculum course that prepares you for competitions such as the Putnam. It meets once a week.

#### **5. Courses at ELTE**

BSM works closely with several other Mathematics or Mathematics related programs in Budapest. Typically we offer up to 1 or 2 classes each semester at the Eotvos University (ELTE) which has a well-established pure mathematics program from the undergraduate level to PhD.

Taking a cross listed class at another institution not only allows you to study a subject not offered by BSM but in addition may enhance your study-abroad experience since the classes may run completely different style as at BSM and your classmates will be from outside of BSM.

Note that a grade you receive for a cross listed class will appear on your BSM transcript as a BSM class, with no mention of the other institution that offers it.

Classes cross listed with ELTE University are held on their campus which is about 30 minutes from BSM.

#### **6. Courses at BSME**

BSME (Budapest Semesters in Mathematics Education) is a completely independent program that is located in the same building as BSM. Given their subject area, BSM and BSME have an agreement so that BSM students can register for BSME classes freely, in addition to their BSM classes. That is, *BSME classes do not count towards the 5-math-course-limit imposed by BSM.*

The BSME courses are designed around teaching mathematics for high school students, including special techniques for teaching the gifted, that Hungary has a great tradition of. The courses provide a unique opportunity to learn firsthand how Hungarians became so good in mathematics!

**IMPORTANT:** *if you are planning to take any of these courses you need to enquire in advance with your home college about credit transfers to find out if the given course will be accepted as a mathematics or education course or other.*

**IMPORTANT:** *apart from DLP, that is cross-listed with BSM, you will get a separate BSME transcript for all completed BSME courses. (That is: DLP will appear on your BSM transcript.)*

The BSME course offers can be found at <http://bsmeducation.com/course-descriptions/>

## Non-Math Courses:

The following courses are cross-listed with McDaniel College and therefore they have pre-set meeting times. Thus their scheduling cannot be changed even if they conflict with some of the other courses you would like to take.

The courses count as regular BSM courses, no need for special arrangements to sign up for them and they will appear on your BSM transcript as regular BSM courses. *You may take as many of these courses as you wish.*

HL1	Beginner Hungarian Language
HL2	Intermediate Hungarian Language
HUC	Hungarian Art and Culture
FILM	Film Analysis - Great Masters of European Films

In addition, we have a BSM-only course:

PHI	Philosophy of Mathematics
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Philosophy of Mathematics is a relatively new course, designed especially at your (previous BSM student's) request!

## McDaniel and AIT courses:

**McDaniel College courses** are available at the Budapest branch of McDaniel College, which you

may wish to attend. These courses are held in the same building where we have the BSM classes but we cannot take care of the scheduling conflicts; so you will only be able to audit these courses if you do not have a BSM course at the same time.

In case you wish to attend any of them, please contact the associate director (Agnes) or the Hungarian director (Dezso Miklos) of the BSM program.

**NOTE:** *McDaniel courses are not for credit, unless special arrangements are made.*

If you need credit for these courses, you need (and will get) the permission of the local McDaniel office and you will get a McDaniel (not BSM!) transcript, however you should also check with your home institution if it accepts your McDaniel courses for credit.

Please note that you are not guaranteed to be able to take a McDaniel course due to the limit on the number of students (since McDaniel college will naturally register their own students first).

### **AIT (Aquincum Institute of Technology) courses**

Aquincum Institute of Technology is an English language institution that works similarly to BSM. Their campus is located at Aquincum, Óbuda, which is about 45 minutes from Bethlen Square.

BSM has a special arrangement with AIT:

you can attend one of their courses free of charge. Note however that you will get an AIT transcript for your AIT course, for which there is a charge.

**IMPORTANT:** *you need to make arrangements with your home institution yourself if you would like AIT courses be accepted by your home institution for credit.*

For more information on AIT, their course offerings etc see [www.ait-budapest.com](http://www.ait-budapest.com)

## **COUNSELORS**

All BSM students are assigned a counselor whose primary role is to make sure that students maintain their good academic standing with their home institution. Thus, for example, the counselors make sure the students course selection fits their requirements. They help them with their academic issues such as choosing courses, as well.

**All students must have a personal meeting with their counselor by the end of the second week.** Counselors office hours will be announced by the beginning of the semester.

## **REGISTERING FOR COURSES, PAYMENTS**

The semester starts with a trial period of three weeks, when you can sit in as many classes as you wish. Only by the end of this period must you register for the courses you really want to take. Thus, **the registration deadline is at Noon on Thursday of the 3rd week of the semester.**

**The registration should be done online using the BSM registration software at <http://www.renyi.hu/~bsmphp/> (a link is available from [www.bsmath.hu](http://www.bsmath.hu)).**

Students will receive your login and password via email by the second week of the semester.

For security reasons, please, change your login/password immediately the first time you use the system!

**Your online registration should be approved by your counselor to come in effect.** You will have to meet your counselor in person briefly to discuss your choices to get an approval. Set up a time to meet your counselor! Their office hours will be emailed at the beginning of the semester. The course approval however is done online!

Note that the final course offerings also depend on overall registration data. (See regular courses versus reading courses at the beginning of this document.)

**NOTE:** *You will be allowed to register only for those courses which you attended during the week of the registration, that is, the third week of the semester.*

Your paid tuition covers as much as five of the math courses and as many of the non-math courses OFFERED by BSM, as well as all BSME courses as you wish.

For the sixth and any further math course you would like to take a **non-refundable** tuition fee of 350USD/course should be paid by the registration deadline, which is the end of the third week.

**NOTE:** *No registration for 6 or more math courses will be accepted without proof of payment for the extra tuition. Even if academically sound, your counselor will not approve registering for 6 or more courses if a proof of payment is not presented.*

## **GRADES, TRANSCRIPTS**

Individual homework and test grades are recorded by the lecturer. His/her grading policy is announced at the beginning of the course.

During the semester you will be able to see a Midterm Assessment Grade (MAG) using our registration software <http://www.renyi.hu/~bsmphp/>

- Go "My courses" --> the course you are interested in --> "Study information"

You will get an automatically generated email message when a Midterm Assessment Grade for a course becomes available.

The MAG grade is given by your lecturer, usually after a midterm and indicates what grade you would get if that moment was the end of semester already. This grade should help you decide with strategies for the given course.

You can view your BSM grade report sheet (a "draft transcript") at the Farewell Party which is usually held Thursday afternoon of the Exam Week.

The final grade report sheets are sent to the BSM American Office which in turn sends a transcript to your home institution. Allow for 2-3 weeks for the process after the end of the semester.

As described before, any "unusual" activities (such as AIT courses etc) must be negotiated with your BSM counselor and your home institution to make sure they accept it for credit. It is the responsibility of each student to go through with such negotiations.

For such courses you will get a separate (non-BSM) transcript provided by the institution offering the course.

## **DROPPING A COURSE**

In order to drop a course from your schedule, you must request it online via the BSM registration software (<http://www.renyi.hu/~bsmphp/>) by the drop deadline which is on the 12<sup>th</sup> week of the semester, on Friday. The "request dropping a course" link is located on the homepage of that course.

- Go "My courses" --> the course you would like to drop --> "Click for drop request"

To finalize your dropping of a course **you also need the approval of the lecturer of the course** - he or she will also do this online and you get an automatically generated email about it when your request is approved.

Failure of following the above procedure OR TRYING TO DROP A COURSE WHICH YOU HAVE NOT ATTENDED FOR TWO OR MORE WEEKS PRIOR TO REQUESTING TO DROP THE COURSE will result in a "NA" (non-attending) grade for the course that will appear in your transcript, considered by many of the home colleges as "FAIL".

**PASS/FAIL:** THERE IS NO PASS/FAIL OPTION AT BSM.

## **AUDITING A COURSE**

There are two ways to audit a course.

**1.** If you are sure **from the beginning** that you only want to audit a course, you may register for it as such, by registering for the course and requesting the audit option immediately (see 2. below). Please note that audited classes will count toward your class load as well (and an auditing person will count toward the class size).

**2. You may change** a course you registered for to "audit" even in the last days of the semester online via the BSM registration software <http://www.renyi.hu/~bsmphp/>.

(Go "My courses --> the course you would like to audit --> Click for audit request" at the bottom of the page.)

**You also need the approval of the lecturer of the course** - he or she will also do this electronically and you get an automatically generated email about when your request is approved.

Note that you may even be able to change a course for audit upon receiving the "draft grade report sheet". In that case your audit request should be approved by the Program Director by the Farewell Party the latest. In this case you should initiate such a change in person or by email.

## **GETTING AN INCOMPLETE GRADE**

BSM students must apply for the incomplete by writing a petition to the BSM Director in Budapest.

"I"(Incomplete) is a temporary grade and is given at the discretion of the instructor and the BSM Director in Budapest.

- Incompletes should only be given in situations where students are receiving a passing grade in a course, have completed most of the course assignments, and are not able to complete their coursework due to unforeseeable circumstances or medical reasons.

- Incompletes should only be given when there is a reasonable expectation that a student can and will complete the work in a timely fashion. A timeline for all coursework to be completed should be established by the Instructors, the Director and the student based on the reasons for an incomplete.
- If the work for an incomplete has not been completed by the deadline, the grade will lapse into the alternative grade.