Mathematics

Meeting of the Advisory Board
January, 2021

SBASSE
LUMS

Members

Dr Zahra Lakdawala
Numerical Analysis &
Computational Fluid Dynamics

Dr Amer Rasheed
Computational Fluid Dynamics &
Numerical Analysis

Dr Sultan Sial
Numerical Optimization
& Soliton solutions

Dr Mudassar Razzaq
Numerical Analysis &
Scientific Computing

Dr Shaheena Bashir
Robust Statistics,
Clinical Trials &
Statistical Genomics

Members

Dr Adnan Khan
Modeling, Biological Systems Analysis
& Computational Finance

Anoushe Hassan
Quantitative Finance
& Risk Management

Dr Imran Naeem
Symmetry methods in
Differential Equations

Dr Ali Ashher Zaidi
Mathematical biology

Dr Masood Shah
Operator Theory &
Fixed Point Theory

Dr Muhammad Usman
Spectral theory of Differential
Operators and Quantum Graphs

Members

Dr Imran Anwar
Commutative Algebra & Algebraic Combinatorics

Dr Shaheen Nazir
Algebraic Geometry and Topology & Combinatorial Commutative Algebra

Dr Haniya Azam
Algebraic Topology & Geometric Topology

Dr Muhammad Ahsan
Differential Equations, Functional Analysis & Differential geometry

Observations & Challenges

- Gender ratio
- Women in leadership roles
- Faculty attrition rate

Journals in Focus

Journal of Algebraic Combinatorics

Journal of Applied Mathematics

Mathematical Physics Analysis and Geometry

Mathematische Zeitschrift

Journal of Mathematical Analysis and Applications

Journal of Mathematical Biology

Physics Letters A

Canadian Journal of Physics

Journal of Inequalities and Applications

Journal of Physics A: Mathematical and theoretical

Applied Mathematics and Computation

Journal of Combinatorial Theory. Series A.

Grants

Year	FIF	FTG	ScR	SRG	STG	ETG	Grand Total
2018	1	2		3	1	1	8
2019		5		1	1		7
2020		2	1				3
Grand Total	1	9	1	4	2	1	18

Challenges

- Availability of national/international grants in Mathematics.
- Sensitizing colleagues about nature and impact of research in different fields of Mathematics.
- Evaluating collaborative work.
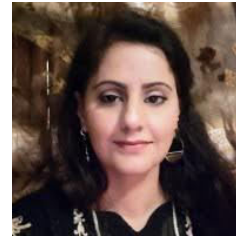
Graduate Placements

Forman Christian College (Lahore)

University of Jhang

University of Management and Technology (UMT)

IOBM University (Karachi)

Lahore School of Economics

Undergraduate Program

Math

Econ-Math

Minor in Computational Finance

Undergraduate Student Placements

Higher Studies

Affinity Software Solutions

Teaching Impact

Pre-Calculus—MATH 100: class size >150
Students enrolled: SDSB, HSS, SSE (non-math background).

Intro to Formal Math—MATH 204: class size > 60
Students enrolled: SSE, HSS, SDSB.

Intro to Analysis I—MATH 205: class size =70
Students enrolled: HSS, SSE, SDSB.

Quantitative Finance—MATH 449: class size=50
Students enrolled: SDSB, SSE.

Teaching Impact

Courses taught each semester with heavy enrollment

Probability—MATH 230: class size on average exceeds 100, in multiple sections, offered each semester.
Students enrolled: SSE, SDSB, HSS.

Statistics—MATH 231: class size on average exceeds 100.
Students enrolled: SSE, SDSB.

Calculus II—MATH 102: class size >100, in multiple sections.
Students enrolled: SSE, HSS.

Feedback on Teaching

Teaching evaluations have consistently improved.

Good evaluations have been successfully maintained.

Constantly adapting to evolving trends in online teaching and learning.
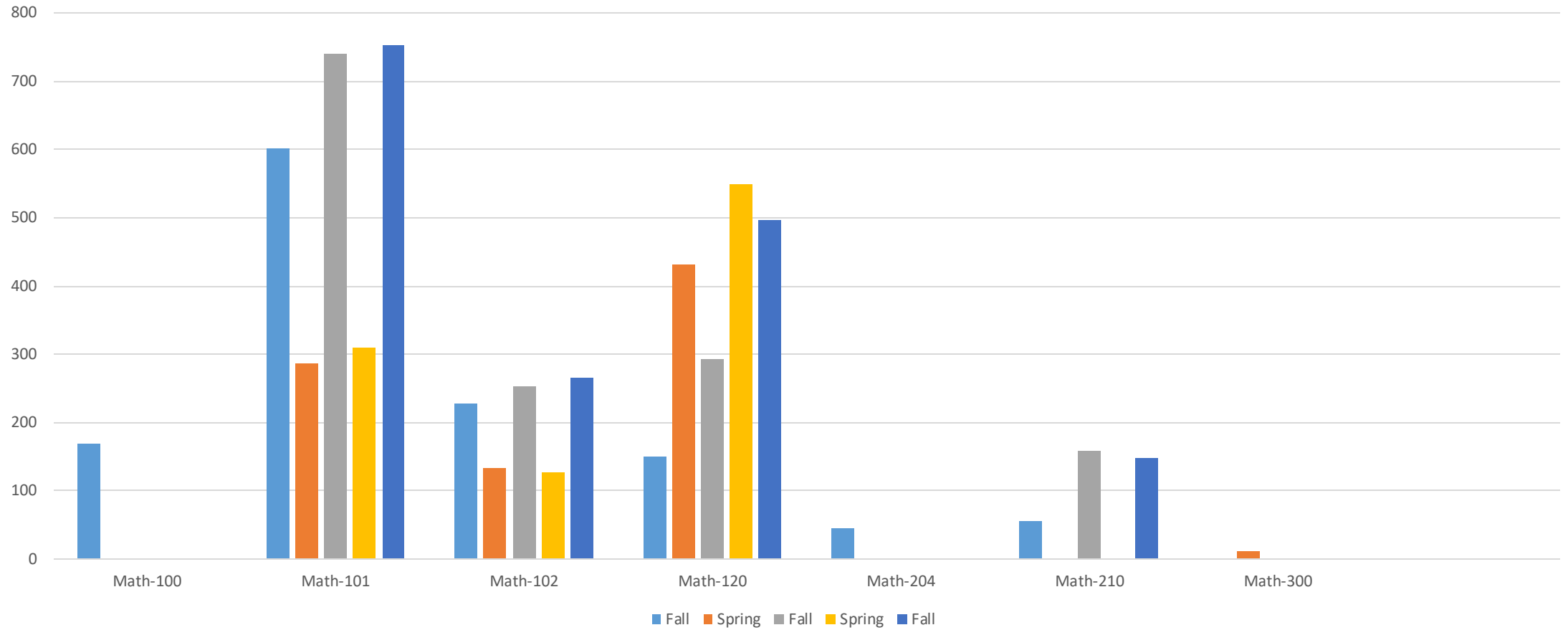
Efforts to space out assessments to reduce stress and workload of students.

Students facing difficulties readily facilitated in the online setting

Current users of WeBWork

-	year 18-19	year 19-20	year 20-21
Fall	1663	1447	1246
Spring	985	864	
Summer	40	14	
Total	2688	2325	1246

WeBWork usage

Challenges

Strain on faculty and students increased by going fully/partially online

Integrity related issues in basic Freshmen level courses

Logistical issues faced in large enrollment courses:
Need to enhance resources for hosting latex enabled WeBWork for smooth running of courses. Especially for conducting online assessments which require 5 times more resources.

Center for Advanced Studies in Mathematics

Expand Scope of CASM beyond organization of conferences and workshops.

Enhance school representation: promoting interdisciplinary research and innovation.

Future directions

- Efforts to enhance student numbers in Math and Econ-Math majors.
- Fostering international linkages such as the one with ICTP, Trieste.
- Capacity building for interdisciplinary collaboration especially targeting the role of Artificial Intelligence and Machine Learning.
- An online repository of courses offered with complete course materials and lectures made available for public use.
- Encouraging more internationally funded activities through CASM.

Thank you!