Si Li (https://sili-math.github.io/) *Curriculum Vitae (2024)*

Employment

- 2014 -present: Professor — Tsinghua University.
- 2012 -2014: Assistant Professor — Boston University.
- 2011 -2012: Boas Assistant Professor (Postdoctoral Fellowship) — Northwestern University.

- **Visiting positions**

- 2019 -2020: Visiting fellow — Institute for Advanced Study.
- 2014 -2015: Visiting fellow — Perimeter Institute for Theoretical Physics.
- 2014 -2020: Affiliated Visiting Senior Scientist — Kavli IPMU at University of Tokyo.

- **Service positions**

- 2020-2022, Associate Dean — Qiuzhen College, Tsinghua University.
- 2019-2020, Associate Dean — BIMSA, Yanqi Lake Beijing.
- 2017-2020, Associate Dean — Dept. of Math. Sci., Tsinghua University.

Education

- Ph.D. in Mathematics, 2006-2011 — Harvard University.
- M.Phil. in Mathematics, 2003-2005 — Univ. of Sci. & Tech. of China.
- B.Sc. in Mathematics, 1999–2003 — Univ. of Sci. & Tech. of China.

Academic Interest

- Geometry and Topology; Mathematical Physics; Quantum Field Theory and String Theory.

Awards

- National Key Research and Development Program of China 2020YFA0713000 (PI), 2021-2025.
- NSF Beijing Key Project, Z180003 (co-PI) 2018.12-2021.12, Geometry and Category on Calabi-Yau manifolds
- NSF DMS-1309118 (PI) 2013-2016, Geometric Aspects of Quantum Field Theory and Topological String.
- **Morningside Medal of Mathematics**: Gold Medal Award, 2016.

Books

- ***Classical Mechanics and Geometry***. Published by **International Press of Boston**. 2023.
- ***Electromagnetism and Geometry***. Published by **International Press of Boston**. 2023.
- ***Ordinary Differential Equations***. Published by **International Press of Boston**. 2024.
- ***Quantum Mechanics: Basic Theory***. Tsinghua University, Spring 2024.
- ***Introduction to Algebraic Topology***. Tsinghua University, Spring 2020.
- ***Geometry and Symmetry***. Tsinghua University, Fall 2018.

Publications

1. *Quadratic Duality for Chiral Algebras* (with Z. Gui, K. Zeng), **Adv. Math.** 451 (2024) 109791
2. *Topological Quantum Mechanics on Orbifolds and Orbifold Index* (with P. Yang), **arXiv:2403.07590 [math.QA]**
3. *Quantum Algebra of Chern-Simons Matrix Model and Large N Limit* (with S.Hu, D. Ye, Y. Zhou), **arXiv:2308.14046 [math.QA]**
4. *Vertex algebras and quantum master equation.* **J.Diff.Geom.** 123 (2023), no 3, 461-521.
5. *Regularized Integrals on Elliptic Curves and Holomorphic Anomaly Equations (with J. Zhou).* **Commun. Math. Phys.** 401, pages 613–645 (2023)
6. *On the L2-Hodge theory of Landau-Ginzburg models (with H. Wen).* **Adv. Math.** 396 (2022) 108165
7. *Landau-Ginzburg mirror symmetry conjecture* (with W. He, Y. Shen, R. Webb). **J. Eur. Math. Soc.** Volume 24, Issue 8, (2022), pp. 2915–2978
8. *Elliptic Trace Map on Chiral Algebras* (with Z. Gui), **arXiv:2112.14572 [math.QA]**
9. *Regularized Integrals on Riemann Surfaces and Modular Forms* (with J. Zhou). **Commun. Math. Phys.** 388, pages 1403–1474 (2021)
10. *Geometry of Localized Effective Theories, Exact Semi-classical Approximation and the Algebraic Index* (with Z.Gui, K.Xu). **Commun. Math. Phys.** 382, 441–483 (2021).
11. *Anomaly cancellation in the topological string* (with K. Costello). **Adv. Theo. Math. Phys.** Vol. 24, No. 7 (2020), pp. 1723-1771.
12. *Dispersionless Integrable Hierarchy via Kodaira-Spencer Gravity* (with W.He, X.Tang, P. Yoo). **Commun. Math. Phys.** 379, 327–352 (2020).
13. *Homotopy Algebras in Higher Spin Theory* (with K. Zeng). **Adv. Theo. Math. Phys.** Vol 24, Issue 3, 757-819 (2020)
14. *G-twisted braces and orbifold Landau-Ginzburg Models* (with W. He and Y. Li), **Commun. Math. Phys.** 373, no.1, 175–217 (2020).
15. *Calabi-Yau geometry, Primitive form and Mirror symmetry*, **Adv. Stud. Pure Math.** Primitive Forms and Related Subjects, page 237-268 (2019). Mathematical Society of Japan.
16. *Categorical primitive forms and Gromov-Witten invariants of An singularities* (with A. Caldararu and J. Tu). **Int Math Res Notices**, rnz315 (2019).
17. *Seiberg-Witten differential via primitive forms* (with D. Xie and S.-T. Yau), **Commun. Math. Phys** 367, no.1, 193-214 (2019).
18. *Effective Batalin-Vilkovisky quantization and geometric applications*, Proceedings of the 7th ICCM, Vol. I, 349–372, **Adv. Lect. Math.** 43. (2019).
19. *Unfolding of Orbifold LG B-Models: A Case Study* (with W. He and Y. Li), **PAMQ** 14.3 (2018): 443-465.
20. *Some Classical/Quantum Aspects of Calabi-Yau Moduli.* **Trends in Mathematics** , Birkhäuser, Cham. B-Model Gromov-Witten Theory, page 463-497 (2018).
21. *Mirror symmetry for unimodular exceptional singularities* (with C. Li, K. Saito and Y. Shen), **J. Eur. Math. Soc.** 19 (2017), no.4, 1189-1229.
22. *Batalin-Vilkovisky quantization and the algebraic index*(with Q.Li, R. Grady), **Adv. Math.** 317 (2017), 575-639.

23. *Twisted supergravity and its quantization* (with K. Costello), **arXiv: 1606.00365 [hep-th]**
24. *On the B-twisted topological sigma model and Calabi-Yau geometry* (with Q. Li), **J.Diff.Geom**. 102 (2016) no.3, 409-48
25. *Quantization of open-closed BCOV theory, I* (with K. Costello), **arXiv:1505.06703 [hep-th]**
26. *A mirror theorem between Landau-Ginzburg models*. **Nuclear Phys. B.**, **898** (2015).
27. *Primitive forms via polyvector fields* (with C. Li and K. Saito), **arXiv:1311.1659 [math.AG]**
28. *Variation of Hodge structures, Frobenius manifolds, and gauge theory*, **arXiv:1303.2782 [math.QA]**
29. *Quantum BCOV theory on Calabi-Yau manifolds and the higher genus B-model* (with K. Costello), **arXiv:1201.4501 [math.QA]**
30. *Renormalization and mirror symmetry*, **SIGMA 8** (2012), 101
31. *Feynman graph integrals and almost modular forms*, **Commun. Number theory Phys**, **6**, (2012)
32. *Picard-Fuchs Equations of Relative Periods and Abel-Jacobi Map for Calabi-Yau Hypersurfaces* (with B.H. Lian and S.T. Yau), **Amer. J. Math**, **134** (2012), no.5, 1345-1384
33. *On the spectrum of unitary finite-Euclidean graphs* (with L.A. Vinh), **Ars Combin**. **110** (2013), 275-287.
34. *BCOV theory on the elliptic curve and higher genus mirror symmetry*, **arXiv:1112.4063 [math.QA]**
35. *Morphisms from Azumaya prestable curves with a fundamental module to a projective variety: Topological D-strings as a master object for curves* (with C.H. Liu, R. Song and S.T. Yau), **arXiv:0809.2121 [math.AG]**
36. *Hamiltonian Formalism of the de-Sitter Invariant Special Relativity* (with M.L. Yan, N.C. Xiao and W. Huang), **Commun. Theor. Phys**. **48** :27-36, (2007)
37. *Baryonium with a phenomenological skyrmion-type potential* (with M.L. Yan, B. Wu and B.Q. Ma), **Phys. Rev. D**, **72** (2005) 0 34027
38. ***Calabi-Yau geometry and higher genus mirror symmetry*, PhD Thesis (2011), Harvard University.**

Invited Talks

1. July 11, 2024: ICBS Satellite Conference in Mathematical Physics, Shanghai, China
2. June 10-14, 2024: 2024 Thematic Program in Field Theory and Topology, Notre Dame, USA
3. May 17, 2024: Colloquium, 浙江大学数学科学学院.
4. May 16, 2024: 陈建功大讲堂, 杭州师范大学数学学院.
5. May 14, 2024: 数智论坛, 南昌大学数学与计算机学院.
6. May 13, 2024: 数觿讲坛, 南昌航空大学数学与信息科学学院.
7. May 10, 2024: 珠峰讲坛, 山东大学数学学院.
8. Apr 25, 2024: 学术讲座, 华中科技大学数学与统计学院.
9. Apr 24, 2024: 学术讲座, 华中科技大学物理学院.
10. Apr 23, 2024: 学术讲座, 湖北大学物理学院.
11. Apr 22, 2024: 学术论坛, 河南大学数学与统计学院.
12. Apr 3, 2024: Current Developments in Mathematics and Physics, Beijing, China.
13. Mar 12, 2024: Conference on "Algebraic, analytic, geometric structures emerging from quantum field theory", Chengdu, China.
14. Feb 28, 2024: 几何讨论班，四川大学数学系.
15. Feb 1, 2024: Geometry and Physics Seminar, UC Berkeley, USA.

16. Jan 24, 2024: Geometry and Physics Seminar, Boston University, USA.
17. Jan 18, 2024: Algebraic Geometry Seminar, Boston College, USA.
18. Dec 23, 2023: 学术讲座, 东北师范大学.
19. Dec 23, 2023: 物理名家讲座, 吉林大学物理系.
20. Dec 11, 2023: 励新卓越论坛, 首都师范大学数学科学学院.
21. Dec 4, 2023: 代数几何讨论班, 南京大学.
22. Dec 3, 2023: 学术论坛, 南京大学.
23. Dec 3, 2023: 学术讲座, 东南大学丘成桐中心.
24. Sep 13, 2023: Eastern Hemisphere Colloquium on Geometry and Physics.
25. Aug 17, 2023: QM Research Seminar, Center for Quantum Mathematics, Danmark.
26. July 31, 2023: MIST: Satellite Conference to the "International Congress of Basic Science", CUHK, Hong Kong.
27. May 11, 2023: 2023 GADEPs focused conference II: Periods of Calabi-Yau varieties and Gromov-Witten invariants, BIMSA, China.
28. Apr 27, 2023: Wu Wen-tsun Lab Lecture, USTC, China.
29. Jan 13, 2023: TSIMF 2023 Homological Algebra of the Infrared, Sanya, China.
30. Nov 2, 2022: The Greater Bay Area Geometry and Mathematical Physics Seminar
31. Aug 1, 2022: The 9th International Congress of Chinese Mathematicians, Beijing, China.
32. June 20-24, 2022: Online Workshop on Topology and QFT. University of Notre dame.
33. Mar 30, 2022: Joint Harvard-CUHK-YMSC Differential Geometry Seminar.
34. Mar 22-25, 2022: "Geometry, Representation Theory and Quantum Fields", Osaka City University.
35. Nov 22–Dec 03 2021: String and M-Theory: The New Geometry of the 21st Century –II, NUS, Singapore.
36. Nov 22-26, 2021: Higher structures in geometry and physics, Chern Institute of Mathematics, Nankai University
37. **August 2-7, 2021: International Congress on Mathematical Physics (ICMP) 2021 (session Quantum Field Theory)**, Geneva, Switzerland.
38. **June 14-18, 2021: String-Math 2021 (Plenary talk)**, IMPA, Rio de Janeiro, Brazil.
39. May 14, 2021: TQFT Seminar, Instituto Superior Técnico, Lisbon, Portugal.
40. May 12, 2021: Hodge Seminar, Edinburgh Hodge Institute, Scotland.
41. May 3, 2021: Online Geometry and Physics Seminar, IASM at Zhejiang University, China.
42. Dec 27, 2020: ICCM Annual Meeting, USTC, China.
43. Oct 30, 2020: Wu Wen-tsün Lab Lecture, USTC, China.
44. Sep 20, 2020: "The 3rd Conference on Operad Theory and Related Topics", Jilin University, China.
45. Apr 17, 2020: Zoom Mathematical Physics Seminar, Tsinghua University, China.
46. Dec 11 , 2019: Colloquium, Columbia University, USA.
47. Dec 9, 2019: Workshop on Symplectic Geometry, NCG and Math Physics, Washington Univ. in St. Louis, USA.
48. Dec 2, 2019: Geometry, Symmetry and Physics Seminar, Yale, USA.
49. Nov 25, 2019: Geometry and Topology Seminar, UC Irvine, USA.

50. Nov 21, 2019: Geometry, Physics and Representation Theory Seminar, Northeastern, USA.
51. Nov 15, 2019: High Energy Theory Seminar Seminar, IAS, USA.
52. Nov 8, 2019: Lie Group/Quantum Mathematics Seminar, Rutgers, USA.
53. Oct 8, 2019: Colloquium, Rutgers- Newark, USA.
54. June 17-28, 2019: Lectures at summer workshop "QFT for Mathematicians", Perimeter Institute, Canada.
55. June 14, 2019: "The mathematical foundations of conformal field theory and related topics"in honor of Yi-Zhi Huang's 60th birthday., Nankai University, Tianjin, China.
56. **June 13, 2019: The 8th International Congress of Chinese Mathematicians (Plenary talk), Beijing, China.**
57. May 6-11, 2019: Deformation theory and homotopy algebras, Emei, China.
58. Apr 24 and Apr 26, 2019: Mathematical Physics Seminar and GAP Seminar, USTC, China.
59. Feb 17-24, 2019: BIRS Workshop on Quantum Field Theory and Factorization Algebras, Banff, Canada.
60. January 25-27, 2019: Workshop on Modular structures in Gromov-Witten theory and related topics , University of Michigan, USA.
61. Feb 14, 2019: Geometry Seminar, University of Oregon, USA.
62. **Jan 14-18, 2019: Between Topology and Quantum Field Theory in celebration of Dan Freed's 60th birthday, University of Texas at Austin, USA.**
63. Dec 10-14, 2018: Workshop on String and M-theory: the new geometry of the 21 century, IMS at NUS, Singapore.
64. Nov 24-26, 2018: Mini-Workshop on Hochschild Cohomology and Related Topics III, East China Normal University, China.
65. Nov 16, 2018: Colloquium at IMS, Shanghaitech University, China.
66. **July 18-22, 2018: String-Math 2018 (Plenary talk), Tohoku University, Japan.**
67. May 10, 2018: 2018 Higher Structures and Symplectic Geometry, Tsinghua University, China.
68. Feb 8, 2018: Workshop on Factorisation Homology, Factorisation Algebras and the Cobordism Hypothesis, Saint-Etienne de Tinee, France.
69. Jan 29, 2018: Higher differential geometry seminar, MPIM, Bonn, Germany.
70. Jan 10-13, 2018: Simons Collaboration Workshop on Homological Mirror Symmetry, Harvard, USA.
71. Dec 7, 2017: Geometry Seminar, CNU, Beijing.
72. Nov 16-19, 2017: Gromov-Witten invariants and integrable hierarchies, USTC, China.
73. Nov 26, 2017: Wu Wen-tsün Lab Lecture, USTC, China.
74. Oct 30-Nov 4, 2017: East Asia Symplectic Conference 2017, Chengdu, China.
75. July 31-Aug 11, 2017: Geoquant 2017, Aarhus, Danmark.
76. **July 24-29, 2017: String-Math 2017 (Parallel talk), Hamburg, Germany.**
77. July 20-22, 2017: Flat connections in physics and geometry, Heidelberg, Germany.
78. July 3-7, 2017: Symposium in Geometry and Differential Equations, Beijing, China.
79. June 8, 2017: ICTS seminar, USTC, Hefei, China.
80. May 22-26, 2017: Homological mirror symmetry and higher genus invariants, Simons Center for Geometry and Physics, USA.

81. May 8-12, 2017: Quantum fields on manifolds with boundary and the BV formalism, Perimeter Institute, Canada.
82. **Apr 28-May 1, 2017: JDG conference on geometry and topology, Harvard, USA.**
83. **Apr 25-28, 2017: Developments of mathematics at IPMU: in honor of Kyoji Saito, Kavli IPMU, Japan.**
84. Apr 17-24, 2017: Gauge Equations, Geometry and Strings, ICMAT, Madrid, Spain.
85. Mar 13-17, 2017: Workshop on homological mirror symmetry, IAS, Princeton, USA.
86. Feb 6, 2017: Geometry and Physics seminar, IBS-CGP, Korea.
87. Jan 19, 2017: Ganita seminar, University of Toronto, Canada.
88. Jan 18, 2017: Mathematical Physics seminar, Perimeter Institute for theoretical physics, Canada.
89. Oct 31-Nov 4, 2016: BICMR/IBS-CGP joint Symplectic Geometry Workshop, Jeju, Korea.
90. **Aug 6-11, 2016: The 7th International Congress of Chinese Mathematicians, Beijing, China.**
91. **Aug 1-5, 2016: Strings 2016 (Parallel talk), Beijing, China.**
92. June 20-26, 2016: Retrospective Workshop for the Thematic Program on Calabi-Yau Varieties: Arithmetic, Geometry and Physics, Herstmonceux Castle, UK
93. May 8-14, 2016: Lecture series for "Factorization Algebras and Functorial Field Theories", MFO, Germany.
94. May 6-8, 2016: Simons Workshop on SYZ Mirror Symmetry and related topics, Harvard, USA.
95. Apr 24-30, 2016: Mini course on "BV quantization and geometric applications", IBS-CGP, Korea.
96. Apr 5-12, 2016: MIST IV: Mathematics Inspired by String Theory, CUHK, Hong Kong.
97. Jan 1-4, 2016: Poisson Geometry and Mathematical Physics, Chern Institute of Mathematics, Tianjin.
98. **Dec 31, 2015: Strings-Math 2015 (Plenary talk), Sanya, China.**
99. Dec 27, 2015: Workshop on Mathematics Physics, Dec 27, Sanya, China.
100. Nov 24, 2015: 2015 Annual Conference of Chinese Mathematical Society, CNU, Beijing.
101. Nov 14, 2015: Geometry and Physics seminar, Shanghai Jiaotong University, Shanghai
102. July 13-July 18,, 2015: "Uniformization, Riemann-Hilbert Correspondence, Calabi-Yau manifold, and Picard-Fuchs Equation", Mittag-Leffler Institute, Sweden
103. July 6-10, 2015: GAP XII-Derived Algebraic Geometry, IBS-CGP, Pohang, Korea
104. March 28, 2015: Tianyuan workshop in algebraic geometry, AMSS, Beijing.
105. Mar 23, 2015: Symplectic geometry and mathematical physics, BICMR, China.
106. March 7, 2015: Beijing Geometry and Physics Colloquium, Peking University
107. Feb 7-8, 2015: Lecture series-Introduction to perturbative field theory, Morningside Center, CAS, Beijing.
108. Jan 20, 2015: String/Math Seminar, Perimeter Institute, Canada
109. Aug 26, 2014: China annual complex analysis conference, USTC, Hefei.
110. Oct 20, 2014: Geometry seminar, Lehigh University, USA.
111. Oct 6, 2014: Informal mathematical physics seminar, Columbia University, USA.
112. Sep 29-Aug 3, 2014: Homological methods in quantum field theory, Simons center for geometry and physics, USA.
113. Sep 18, 2014: Seminar on mathematical physics, Morningside Center for Mathematics, CAS, Beijing.
114. **Aug 5, 2014: 60 years of Calabi conjecture-Workshop in Honor of Professor Shing-Tung Yau on the occasion of his 65th birthday, Tsinghua University**

115. June 8-15, 2014: Lecturer for Research Training Group 1670, University of Hamburg, Germany
116. May 19-23, 2014: Representation Theory, Integrable Systems, and Quantum Fields, Northwestern University, USA
117. April 1, 2014: Algebraic geometry seminar, Princeton, USA
118. Mar 3-7, 2014: Workshop on B-model aspect of Gromov-Witten theory, University of Michigan
119. Feb 10-14, 2014: Lecturer: Primitive forms and related subjects, Kavli IPMU, Japan
120. Nov 25, 2013: Geometry and Physics seminar, University of Michigan, USA
121. July 22, 2013: Invited seminar, Kavli IPMU, Japan
122. **July 16, 2013: The Sixth International Congress of Chinese Mathematicians, Taipei**
123. Apr 12-14, 2013: Mini-course for FRG Workshop on Gromov-Witten theory, Columbia University, USA
124. Mar 11, 2013: Geometry and Physics seminar, University of Michigan, USA
125. Jan 29, 2013: Differential geometry seminar, Harvard University, USA
126. Nov 30, 2012: Everytopic Seminar, Brandeis University, USA
127. Nov 27, 2012: GAP Seminar, Penn State University, USA
128. Sep 14-17, 2012: Boston-Keio Summer Workshop on Geometry, Boston University, USA
129. Aug 27, 2012: FRG Workshop: Generalized Geometry, String Theory, and Deformations, Harvard, USA
130. August 20-24, 2012: The Conference of Mirror Symmetry and Related Topics, KMUST, China
131. July 27-Aug 20, 2012: Summer course, MSC at Tsinghua University, China
132. August 10, 2012: Math Literature Seminar, MSC at Tsinghua University, China
133. July 18, 2012: Workshop on the mathematical aspects of quantum field theory, USTC, China
134. June 26, 2012: Geometry and Physics of the Landau-Ginzburg Model, IPMU, Japan
135. June 18, 2012: Quantization and Mathematics: An Undergraduate Conference, Northwestern University, USA
136. Mar 19, 2012: Geometry and Physics Seminar, University of Michigan, USA
137. Feb 18, 2012: Hong Kong Geometry Colloquium, Hong Kong
138. Feb 17,20, 2012: Geometry and Physics Seminar, HK Chinese Univ, Hong Kong
139. Feb 8,11, 2012: Geometry Seminar, HKUST, Hong Kong
140. Dec 9, 2011: Geometry Seminar, Boston University, USA
141. Nov 3, 2011: Felix Klein Seminar, University of Notre Dame, USA
142. Aug 3, 2011: Workshop on Chiral Differential Operators, Northwestern University, USA
143. July 19, 2011: Seminar on QFT, MIT, US
144. May 5, 2011: Mirror Symmetry Seminar, Simons Center for Geometry And Physics, Stonybrook
145. Mar 4, 2011: Algebraic Geometry Seminar, University of Wisconsin, USA
146. Feb 22, 2011: Differential Geometry Seminar, Harvard University, USA
147. Oct 14, 2010: Geometry/Physics Seminar, Northwestern University, USA
148. Sep 28, 2010: Differential Geometry Seminar, Harvard University, USA
149. Dec 4 2009: Differential Geometry Seminar, Harvard University, USA

Teaching and Mentorship

- **Post-doc mentorship**
  - Jingyue Chen (2015-2018), work at Capital Normal University
  - Weiqinag He (2015-2018), work at Sun Yat-sen University
  - Hao Wen (2016-2019), work at Nankai University
  - Xinxing Tang (2017-2021) work at Beijing Inst. of Math. Sci. App. (BIMSA)
  - Jiawei Zhou (2019-2022) work at Beijing Inst. of Math. Sci. App. (BIMSA)
  - Hongfei Shu (2021-2023) work at Zhengzhou University
  - Yong Li (2022-2024) work at Beijing Inst. of Math. Sci. App. (BIMSA)
- **Graduate (Ph.D.) mentorship**
  - Yifan Li (2014-2019).
    Thesis: "**Algebraic Approaches to Landau-Ginzburg Orbifolds**".
  - Zhengping Gui (2016-2021).
    Thesis: "**Chiral deformation theory of 2d conformal field theory**"
  - Minghao Wang (2018-2023).
    Thesis: "**Perturbative BV-BFV formalism with homotopic renormalization**"
  - Gongwang Yan (2018-2023).
    Thesis: "**Homological framework for quantum field theory on manifold with boundary: a case study**"
  - Xiaoxiao Yang (2019-current)
  - Peng Yang (2020-current)
  - Tianqin Zhu (2020-current)
  - Linfang Hou (2024-current)
- **Undergraduate thesis mentorship**
  - Yifan Wu (2024, Columbia)
  - Chenjing Bu (2021, Oxford)
  - Keyou Zeng (2018, Perimeter Institute)
  - Kai Xu (2018, Harvard)
  - Shaoyun Bai (2017, Princeton)
  - Yuxuan Yang (2017, Harvard)
  - Zhengping Gui (2016, Tsinghua)
  - Weifeng Sun (2016, Harvard)
- **Teaching (Tsinghua)**
  - Fall 2024: *Mathematical Methods in Quantum Mechanics* (undergraduate, 4 credits)
  - Fall 2024: *Linear Algebra (for physics major)* (undergraduate, 4 credits)
  - Fall 2023: *Ordinary Differential Equations* (undergraduate, 4 credits)
  - Fall 2023: *Quantum Mechanics* (**new undergraduate course for Qiuzhen College**, 4 credits)

– Spring 2023: *Electrodynamics* (**new undergraduate course for Qiuzhen College**, 4 credits)
– Fall 2022: *Classical Mechanics* (**new undergraduate course for Qiuzhen College**, 4 credits)
– Spring 2021: *Algebraic Topology* (graduate course. 4 credits)
– Fall 2020: *Mathematical Analysis-I* (undergraduate. 5 credits)
– Spring 2020: *Algebraic Topology* (graduate course. 4 credits)
– Spring 2019: *Noncommutative geometry* (**new graduate course**, 4 credits)
– Spring 2019: *Mathematical Examples* (**new undergraduate course for Yau Elite class**, 2 credits)
– Fall 2018: *Geometry and Symmetry* (**new undergraduate course for Yau Elite class**, 3 credits)
– Spring 2018: *Algebraic Topology* (**graduate course, evaluation top 5 % at Tsinghua**, 4 credits)
– Fall 2017: *Topics in mathematical physics-supersymmetry* (**new graduate course**, 4 credits)
– Fall 2017: *Topology* (undergraduate, 3 credits)
– Fall 2015: *Linear algebra* (undergraduate, 4 credits)
– Spring 2015:*Topics in quantum field theory and geometric applications* (YMSC graduate, 4 credits)
– Summer 2014: *Introduction to deformation quantization* (YMSC graduate, 2 credits)
– Summer 2013: *Topics in quantum field theory* (YMSC graduate, 2 credits)