# Contents


Preface v

**1 Quasiconformal maps** 1
- 1.1 Lecture I. Definition of quasiconformality . . . 1
- 1.2 Lecture II. Uniqueness and existence theorems . . . 5
- 1.3 Lecture III. Quasisymmetric homeomorphisms . . . 12

**2 Universal Teichmüller space** 19
- 2.1 Lecture IV. Definition of the universal Teichmüller space . . . 19
- 2.2 Lecture V. Properties of the universal Teichmüller space . . . 24

**3 Subspaces of universal Teichmüller space** 37
- 3.1 Lecture VI. Riemann surfaces . . . 37
- 3.2 Lecture VII. Classical Teichmüller spaces . . . 44
- 3.3 Lecture VIII. The space of diffeomorphisms . . . 48

**4 Grassmann realization of the universal Teichmüller space** 55
- 4.1 Lecture IX. The action of quasisymmetric homeomorphisms on the Hilbert space . . . 55
- 4.2 Lecture X. Grassmann realization of the space $\mathcal{T}$ . . . 64

**5 Quantization of space of diffeomorphisms** 69
- 5.1 Lecture XI. Quantization of classical systems by Dirac . . . 69
- 5.2 Lecture XII. Quantization of the extended system . . . 72

**6 Quantization of Teichmüller space** 85
- 6.1 Lecture XIII. Quantization by Connes . . . 85
- 6.2 Lecture XIV. Quantization of the universal Teichmüller space . . . 90

**7 Instead of an afterword. Universal Teichmüller space and string theory** 93

**8 Problems** 95

**9 Bibliographical comments** 99

Bibliography 101

Index 103