## Contents

Preface

1 Quasiconformal maps
   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
   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
   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
   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
   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
   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

9 Bibliographical comments

Bibliography 101

Index 103