

Some Comments on the Lecture Notes for 21-640

Shashank Singh

sss1@andrew.cmu.edu

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Week 3

Page 10, Second to last paragraph

- should read 'Open Mapping Theorem', rather than 'Banach-Steinhaus'.

Week 12

Page 7, Proof of Lemma 12.24

- F should map (x, y) rather than $x + y$ to $x + y$.

Week 13

Page 5, Proof of Theorem 13.10

- This may have been intentional, but the proof appears to stop abruptly before actually showing

$$\forall x \in X, \|x\| = 0 \Rightarrow x = 0.$$

Week 14

Page 1, Theorem 14.1

- minor typo in first sentence - topological has an extra 'v'.
- A (probably minor) exception - What if $\mathcal{B} = \{\{0\}\}$ (by translation invariance, the topology would have to be discrete)? I think this should be possible on a TVS. However, \mathcal{B} would be a local base of balanced and convex, but not absorbing, sets.

Page 1, Proof of Theorem 14.1

- minor typo in second sentence - a ':' is missing the family $\{p^V : V \in \mathcal{B}\}$.

Page 1, Theorem 14.2

- typo in the last sentence:

$$\forall p \in \mathcal{P}, p \text{ is topologically on } E$$

should be

$$\forall p \in \mathcal{P}, p \text{ is bounded on } E.$$

Page 4, Paragraph 2

- minor typo in last sentence - 'equicontinuous' is missing the last 'u'

Page 4, Definition 14.11

- minor typo in part (c)- there is an extraneous 'it'

Page 4, Theorem 14.14

- minor typo in first sentence - 'linear amppings' should read 'linear mappings'

Page 5, Paragraph 2

- minor typo in first sentence - 'separating' is missing the second 'a'
- (I think) the fact that $\{p_x : x^* \in X^*\}$ is separating depends on a Hahn-Banach argument; if so, it might be clearer to mention this.

Page 5, Remark 14.18

- typo in second sentence - X should be X^* .

Pages 9-10, Theorems 14.27-14.29 and Proposition 14.30 are mislabelled Theorems 4.27-4.29 and Proposition 4.30, respectively.

Page 10, Definition 14.31

- typo in part (c) - $\forall x, y \in \mathbb{K}$ should read $\forall x, y \in X$.

Page 12, Paragraph 1

- minor typo in second sentence - missing close parenthesis.
- minor typo in third sentence - missing period.