References : [Pierce] : R.S. Pierce "Associative Algebras", GTM88

[G-W] : K.-R. Goodearl, R.B. Warfield "Introduction to noncommutative Noetherian rings", CUP

[McR] : McConnell - Robson "Noncommutative Noetherian rings", AMS

① Quaternions : Hamilton : $A = \mathbb{R} \oplus \mathbb{R}i \oplus \mathbb{R}j \oplus \mathbb{R}k$ with mult $i^2 = -1$, $j^2 = -1$, $ij = -ji = k$

§1.6 in [Pierce] : general quaternions

- Lemma : $\binom{\alpha,\beta}{F}$ is simple with center F $\iff$ $\alpha \neq 0, \beta \neq 0$
- Prop : div. alg.

§1.7 in [Pierce] : isomorphisms of quaternion algebras

② Group algebras (see lecture)   [G-W, xvi]
                                        ↓ first part
- Representations
- Basics [Pierce 1.2] : Def, Prop about ext. of morphisms
- Connections to skew Laurent rings ?
- [Mc-R] : p82 : Generalizations
- Semi-simplicity
- Decomposition : [Serre p48] , Center [Serre]

③ Rings of diff. operators   xvii in [G-W]
- Def ⟿ p 26 more detail [G-W]
- Weyl algebra p.30
  in part Cor 2.2 : all Weyl algebras are simple rings

④ Triangular matrix rings [GW p4] ⟶ whole section
⟿ From examples : When noetherian?

⑤ Skew polynomial rings

[G-W] p 9 : Universal property
· Quantized coordin. ring of k^2

· Simplicity p.20

⑤' Skew Laurent rings

[G-W] p. 15 + 20+

(⑥ Universal enveloping algebra

[G-W] xix , Chp 14 of [McC-R] : Basics)

⑦ Clifford algebras

→ see [Buchweitz-Faber-Ingalls : Magic Square of reflections and rotations]
     arXiv : 1806.04600

Section 8 + References   (need tensor algebra for the definition)
↳ examples of real Clifford algebras

⑧ TL -algebras : Survey by [Doty -Giaquinto : Origins of
                           the Temperley-Lieb algebra : Early
                           history] arXiv 2307. 11929