SYLLABUS OUTLINE

Computer science

Common core (HL and SL students) 125 hrs

Topic 1—Systems life cycle and software development 35 hrs

1.1	**The systems life cycle**	**8 hrs**
1.2	**Systems analysis**	**4 hrs**
1.3	**Systems design**	**4 hrs**
1.4	**Social significance and implications of computer systems**	**5 hrs**
1.5	**Software life cycle**	**2 hrs**
1.6	**Software design**	**8 hrs**
1.7	**Documentation**	**4 hrs**

Topic 2—Program construction in Java 50 hrs

Topic 3—Computing system fundamentals 37 hrs

3.1	**Language translators**	**2 hrs**
3.2	**Computer architecture**	**12 hrs**
3.3	**Computer systems**	**5 hrs**
3.4	**Networked computer systems**	**8 hrs**
3.5	**Data representation**	**6 hrs**
3.6	**Errors**	**2 hrs**
3.7	**Utility software**	**2 hrs**

Case study 3 hrs

Program dossier

Standard level (SL)	25 hrs
Higher level (HL)	35 hrs
Additional HL material (HL students only)	80 hrs
Topic 4—Computer mathematics and logic	11 hrs
4.1 Number systems and representations	**6 hrs**
4.2 Boolean logic	**5 hrs**
Topic 5—Abstract data structures and algorithms	41 hrs
5.1 Fundamentals	**3 hrs**
5.2 Static data structures	**8 hrs**
5.3 Dynamic data structures	**14 hrs**
5.4 Objects in problem solutions	**6 hrs**
5.5 Recursion	**6 hrs**
5.6 Algorithm evaluation	**4 hrs**
Topic 6—Further system fundamentals	15 hrs
6.1 Processor configuration	**2 hrs**
6.2 Magnetic disk storage	**1 hr**
6.3 Operating systems and utilities	**2 hrs**
6.4 Further network fundamentals	**4 hrs**
6.5 Computer/peripheral communication	**6 hrs**
Topic 7—File organization	10 hrs
Case study (Extended study)	3 hrs