1. Evolution of C – from past to eternity
   - milestones: ANSI C, C89, C95, C99, C11
   - obsolete (but still valid) language elements
   - how have function declarations changed over time?
   - trigraphs and digraphs
   - new C11 keywords:
     - _Noreturn
     - _Alignof and _Alignas
     - _Bool
     - _Exit
     - _Complex
     - _Pragma, _func_
     - _Generic

2. Handling variable number of parameters (<stdarg.h>)
   - calling conventions, passing parameters, stack usage, stack frame, returning a value, recursion
   - va_start()
   - va_arg()
   - va_end()
   - va_copy()
   - vsprintf(), vprintf(), vfprintf()
   - vscanf(), vsscanf(), vfscanf()
   - (_VA_ARGS_)

3. Low level IO (<unistd.h>)
   - POSIX, API, ABI, WINAPI, etc.
   - access()
   - open()
   - errno
   - close()
   - read()
   - write()
   - lseek()
   - dprintf()
   - stat()
   - symlink(), link()
   - readlink()
   - unlink()
   - fcntl(), ioctl()
4. Memory and strings (<string.h> et al.)
   - manipulating memory blocks
   - string manipulation: strchr(), strrchr(), strstr(), strtok()
   - qsort(), bsearch()
   - aligned_alloc(), calloc(), malloc(), and realloc()
   - bcopy()
   - memcpy()
   - memccpy()
   - memmove()
   - bzero()
   - memset()
   - memcmp()
   - Internationalization I18N
     - Unicode, UCS, UTF-8 – how to deal with a multilingual environment?
     - universal character names
     - wide characters supported in different C dialects (<wchar.h>, <wctype.h>, …)
   - strcoll() and wcscoll()

5. Processes and threads
   - definitions, implementations and history
   - thread safety
   - system(), getenv(), setenv()
   - processes – the Unix way:
     - fork()
     - exit()
     - execxx()
     - wait() and waitpid()
   - processes – the MS Windows way:
     - CreateProcess()
     - WaitForSingleObject()
   - POSIX threads
   - MS Windows threads
   - C11 threads (<thread.h>)
6. Floats and ints once again (<math.h>, <fenv.h>, <inttypes.h> et al.)
   - IEEE-754: a different universe
   - NaN, infinity, zero
   - floats and doubles – should we trust them?
   - numerical anomalies vs precision
   - ULP
   - what is a pragma?
   - FENV_ACCESS pragma
   - floating-point exceptions
   - rounding
   - multi-precision libraries (GMP, MPFR, MPIR)

7. Network sockets – the absolute basics
   - what is a socket? what is a network socket?
   - TCP/IP protocol stack, UDP
   - connection and connectionless data transmissions
   - servers and clients
   - big- and little-endians and why you should be aware of them
   - socket addressing: IPv4, IPv6, service numbers
   - getaddrinfo()
   - socket()
   - connect()
   - bind()
   - listen()
   - accept()
   - send() and recv()
   - a simple example of client–server communication
   - a simple example of peer-to-peer communication

8. Miscellaneous
   - const variables vs. volatile variables
   - goto – why and why not, advantages, disadvantages and limitations
   - long (non-local) jumps: setjmp() and longjmp()
   - static array indices, designated initializers, compound literals, variable-length arrays, flexible array members, restrict keyword
   - sequence points: why ++/-- may sometimes make you crazy
   - the asm keyword
   - portability issues and undefined behaviors