```
#include <Wire.h>
#include <ArduCAM.h>
#include <SPI.h>
#include <SD.h>
#include "memorysaver.h"

// Use correct camera module here
#define OV2640_MINI_2MP
#define CS_CAM 10
#define CS_SD 8

ArduCAM myCAM(OV2640, CS_CAM);

void setup() {
  uint8_t vid, pid;
  uint8_t temp;

  Serial.begin(115200);
  Wire.begin();
  pinMode(CS_CAM, OUTPUT);
  pinMode(CS_SD, OUTPUT);
  digitalWrite(CS_CAM, HIGH);
  digitalWrite(CS_SD, HIGH);

  // Init SPI and SD
  SPI.begin();
  if (!SD.begin(CS_SD)) {
    Serial.println("SD Card init failed!");
    return;
  }
  Serial.println("SD Card initialized");

  // Init Camera
  myCAM.write_reg(ARDUCHIP_MODE, 0x00); // switch to MCU mode
  myCAM.InitCAM();
  myCAM.set_format(JPEG);
  myCAM.InitCAM();
  myCAM.OV2640_set_JPEG_size(OV2640_640x480); // You can choose other sizes
  delay(1000);

  myCAM.clear_fifo_flag();
  myCAM.start_capture();
  Serial.println("Capturing...");

  while (!myCAM.get_bit(ARDUCHIP_TRIG, CAP_DONE_MASK));

  Serial.println("Capture Done.");

  saveImageToSD();
}
```

```
void saveImageToSD() {
  char filename[] = "/image00.jpg";
  for (uint8_t i = 0; i < 100; i++) {
    filename[6] = '0' + i / 10;
    filename[7] = '0' + i % 10;
    if (!SD.exists(filename)) break;
  }

  File imgFile = SD.open(filename, FILE_WRITE);
  if (!imgFile) {
    Serial.println("Failed to open file");
    return;
  }

  uint32_t length = myCAM.read_fifo_length();
  if (length >= 0x7FFFFF || length == 0) {
    Serial.println("Invalid image length");
    imgFile.close();
    return;
  }

  myCAM.CS_LOW();

  bool foundFFD8 = false;
  bool lastWasFF = false;
  uint8_t b;

  const int BUF_SIZE = 256;
  uint8_t buf[BUF_SIZE];
  int buf_idx = 0;

  for (uint32_t i = 0; i < length; i++) {
    b = myCAM.read_fifo();  // <-- use official method

    if (!foundFFD8) {
      if (lastWasFF && b == 0xD8) {
        buf[buf_idx++] = 0xFF;
        buf[buf_idx++] = 0xD8;
        foundFFD8 = true;
        lastWasFF = false;
        continue;
      }
      lastWasFF = (b == 0xFF);
      continue;
    }

    buf[buf_idx++] = b;

    if (buf_idx >= BUF_SIZE) {
      imgFile.write(buf, buf_idx);
      buf_idx = 0;
    }
```

```
    if (lastWasFF && b == 0xD9) {
      // EOI reached
      if (buf_idx > 0) imgFile.write(buf, buf_idx);
      Serial.println("Found FFD9. Done.");
      break;
    }

    lastWasFF = (b == 0xFF);
  }

  // Flush remaining buffer
  if (buf_idx > 0) {
    imgFile.write(buf, buf_idx);
  }

  myCAM.CS_HIGH();
  imgFile.close();

  Serial.println("✅ JPEG saved using ArduCam read_fifo()");
}




void loop() {
  // Nothing to do
}
```